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MEMORANDUM

TO:	Jo Chamberlain, CLT jo@coastsidelandtrust.org	FROM:	Leslie Lazarotti, WRA lazarotti@wra-ca.com
CC:	Steve Noack, Placeworks snoack@placeworks.com		Jesse Jones, Placeworks jjones@placeworks.com
DATE:	October 12, 2022		
SUBJECT:	Wavecrest Coastal Trail: Southern Alignment Project Biological Resource Evaluation (BRE) Amendment (2022)		
ATTACHMENTS:	1. Updated BRE Figures (2022) 2. BRE (June 2020)		

Background

The Wavecrest Coastal Trail: Southern Alignment Project (Project) planning effort began in 2016, and biological resources field work was conducted for this project between 2016 and 2022. These efforts are summarized below.

- On January 26 and 27 and February 9 and 16, 2016, WRA, Inc. (WRA) conducted a Biological Resource Evaluation (BRE) of the proposed trail alignment (Project Area) and an approximately 200-foot buffer around the Project Area (Study Area). In addition, protocol-level special-status plant species surveys were conducted within the Study Area on April 15 and June 22, 2016.
- In November 2019, the Project design was revised to add stairs for beach access and the Project Area was expanded to include installation of a sewer lateral, utility line (water line extension) and new restroom along Redondo Beach Road, collectively referred to as the “Utility Area.”
- A BRE of the Utility Area plus 200-foot buffer was conducted by WRA on January 14, 2020 and an updated BRE report was prepared by WRA in June 2020 (2020 BRE). However, the timing of this evaluation was outside of reported blooming periods for special-status plant species.
- As such, during April and June of 2022, protocol-level special-status plant surveys were conducted to update the 2016 surveys and cover the Utility Area. During this time, biological resources within the Study Area was re-evaluated to determine if baseline environmental conditions had changed since initial field work was conducted during 2016.

This memorandum was prepared to address the following comment from the California Coastal Commission (CCC) in a letter to the City of Half Moon Bay, dated August 26, 2020:

The survey for the BRE was conducted in January/February of 2016 for the majority of the project area, with the exception of the utility/restroom area that was conducted in January 2020. The Commission's standard practice is to request new biological reports every 5 years and in this case, it has been 4.5 years since the bulk of the study area was assessed. As such, we would suggest an amendment to the BRE to demonstrate whether these habitat areas have changed in the time since the initial report. Surveys should occur during the rainy season and during the bloom periods for the special-status plant species with the potential to occur on-site, for the entirety of the study area (including the utility/restroom area which was not surveyed during the bloom period).

This memorandum serves as an amendment to the 2020 BRE and provides results from field studies conducted during 2022. Current project figures are provided in Attachment 1 and the 2020 BRE is included as Attachment 2. This memorandum and its attachments contain the most current information about Project impacts and site conditions and will be submitted with regulatory permit applications to the U.S. Army Corps of Engineers (Corps), California Department of Fish and Wildlife (CDFW), Regional Water Quality Control Board (RWQCB), and City of Half Moon Bay/California Coastal Commission (CCC).

Summary of Updates

WRA conducted a general site reconnaissance and focused special-status plant surveys within the Study Area (including Utility Area) during April and June 2022. These studies confirmed that baseline environmental conditions have not changed since initial field work was conducted in 2016. The following section documents methods and results of the 2022 special-status plant surveys and updated special-status plant impact analysis. In response to the August 26, 2020 CCC comment letter, this section also provides clarifications about impacts to aquatic resources and minor revisions that were made to special-status wildlife mitigation measures in the 2020 BRE (Attachment 2).

Special Status Plant Species

Methods

Prior to the 2022 rare plant surveys, California Natural Diversity Database (CNDDDB) and California Native Plant Society (CNPS) database searches were re-run using the same parameters as methods described in the 2020 BRE (Attachment 2). The purpose of this updated records search was to identify any changes to the list of special-status plant species documented within or near the Study Area. Database searches were conducted within the Half Moon Bay, Montara Mountain, and San Gregorio USGS 7.5' quadrangles. Updated database results include the addition of two new species, shown in **Table 1**, below.

Table 1. Changes in CNDDDB/CNPS/IPaC Database Searches for Plants

SPECIES AND STATUS	HABITAT	POTENTIAL FOR OCCURRENCE
Harlequin lotus <i>Hosackia gracilis</i>	Broadleafed upland forest, coast bluff scrub, coast prairie, cismontane woodland, coastal scrub, closed-cone coniferous	Moderate Potential. Not Observed during protocol surveys conducted in April and June

SPECIES AND STATUS	HABITAT	POTENTIAL FOR OCCURRENCE
<u>Status:</u> CNPS Rare Plant Rank 4.2	forest, meadows and seeps, marshes and swamps, north coast coniferous forest, valley and foothill grassland. Microhabitats of wetlands and roadsides. Blooms between March and July. Elevation: 0-700 m.	2022. No further actions are recommended.
Hickman's popcorn flower <i>Plagiobothrys chorisianus</i> var. <i>hickmanii</i> <u>Status:</u> CNPS Rare Plant Rank: 4.2	Closed-cone coniferous forest, chaparral, coastal scrub, marshes and swamps, vernal pools. Blooms between April and June. Elevation: 15-390m.	High Potential. Not Observed during protocol surveys conducted in April and June 2022. No further actions are recommended.

Protocol surveys were conducted during the reported blooming periods of all species with potential to occur on April 12, April 13, and June 8, 2022 in accordance with resource agency guidelines (CDFW 2018¹ and CNPS 2001²). These surveys were conducted by botanists who have experience identifying the rare plant species with potential to occur and covered all portions of the Project Area where impacts would occur (including the Utility Area). The surveys also focused on documenting potential changes in site conditions since the 2020 BRE was prepared, as well as investigating the potential presence of the two new rare plant species that came up in the 2022 database search.

The 2022 surveys were conducted by walking transects spaced approximately 25-feet apart within previously mapped Choris' popcornflower populations; existing formal and informal trails; and the proposed trail alignments and Utility Area plus a 25-foot surrounding buffer. Within remaining portions of the Study Area, transects were spaced at approximately 50-foot intervals. Within planned impact areas, surveys detected any previously undocumented occurrences that would be impacted. Because of the severe drought conditions in 2022, survey efforts focused on mapping new occurrences rather than removing previously mapped populations. This is because water year 2022 marks the 3rd consecutive year of drought in California, and it is assumed that a well-established and viable seed bank of Choris' popcornflower is still present within previously mapped areas. In addition, Choris' popcornflower is an annual species that experiences population shifts which are dependent on a variety of environmental conditions (in addition to precipitation).

An additional survey was conducted in June 2022 in potentially suitable habitat for the remaining late-blooming species that may not have been identifiable during the April survey. All observed species were recorded to the lowest taxonomic level necessary to determine rarity status.

¹ California Department of Fish and Wildlife. 2018. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities. Available at: <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959>

² California Native Plant Society (CNPS). 2001. CNPS Botanical Survey Guidelines. Available at: https://cnps.org/wp-content/uploads/2018/03/cnps_survey_guidelines.pdf

Results

Of the 50 special-status plant species known to occur in the vicinity of the Study Area, one was documented within the Study Area and 20 were determined to have a moderate or high potential to occur based on presence of suitable habitat but were not observed. The remaining species documented to occur in the vicinity of the Study Area are unlikely or have no potential to occur due to a lack of suitable habitat. In 2016, the Study Area, excluding the Utility Area, was found to contain 7.48 acres of Choris' popcornflower. In 2022, the Study Area, including the Utility Area, was found to contain an additional 0.54 acres, for a total of 8.02 acres (Attachment 1, Figure 5). Generally, most areas that were previously mapped in 2016 were observed to be occupied in 2022, with limited areas that did not have any Choris' popcornflower. New occurrences tended to occur in shallow depressions near coyote brush (*Baccharis pilularis*) shrubs, with some new populations mapped in the middle of an existing (and actively used) trail in the southeastern corner of the Project Area. The Utility Area was added on after the 2016 surveys; Choris' popcorn flower was not identified within this area during the 2022 survey.

Impacts

Attachment 1 -Figure 6 depicts proposed impacts to Choris' popcorn flower within the Project Area. Based on current site plans, the project would result in permanent impacts to 0.44 acres of Choris' popcornflower from trail construction and ripping, grading, and restoration actions. This represents an impact of approximately 5 percent of the occupied habitat. There would be temporary impacts to 0.73 acre of Choris' popcornflower for construction access. An estimated 2,500 to 115,000 individuals would be permanently impacted, and 4,100 to 192,000 would be temporarily impacted. Estimated ranges of individuals impacted are provided for illustrative purposes only and should not be used to determine mitigation benchmarks/thresholds for the impacted areas. The wide range for the population estimate reflects the highly variable density observed throughout the areas mapped as occupied by Choris' popcornflower, as well as annual population fluctuations that may occur over time depending on environmental conditions.

Mitigation

Choris' popcornflower. Prior to construction activity within the Project Area, Choris' popcorn flower seeds shall be collected from areas that will be impacted from the trail alignment and added to the seed mix to be used to revegetate and decommission informal trails within other portions of the Project Area. Seed collection should be timed appropriately, i.e., when flowers have senesced and seeds (nutlets) have matured, but not before seeds drop. Following the completion of the project, areas within the CLT lands that are outside of the public rights-of-way will be preserved.

Special Status Wildlife

Three new species were documented from the 2022 CNDDDB and USFWS IPaC database searches that were not previously discussed in the 2020 BRE report. However, these species are not expected to occur in the Study Area due to a lack of suitable habitat conditions and distance from known occurrences (refer to **Table 2**).

Table 2. Changes in CNDDB/IPaC Database Searches for Wildlife

SPECIES AND STATUS	HABITAT	POTENTIAL
REPTILES AND AMPHIBIANS		
<p>California giant salamander <i>Dicamptodon ensatus</i></p> <p><u>Status:</u> CDFW Species of Special Concern</p>	<p>Known from wet coastal forests near streams and seeps from Mendocino County south to Monterey County, and east to Napa County. Aquatic larvae found in cold, clear streams, occasionally in lakes and ponds. Adults known from wet forests under rocks and logs near streams and lakes.</p>	<p>Not Expected. Most nearby occurrences of this species are documented from wet redwood forests in the hills to the east. The closest CNDDB occurrence is 3.5 miles to the east, in a different watershed. No perennial streams with sufficient shading are present to support larval metamorphosis.</p>
<p>Foothill yellow-legged frog <i>Rana boylei</i></p> <p><u>Status:</u> California endangered and CDFW Species of Special Concern</p>	<p>Partly shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Needs at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis.</p>	<p>Not Expected. Rocky perennial streams are not present within the Study Area to support any portion of this species' life history. Additionally, the closest documented CNDDB occurrence is 7 miles to the east, suggesting that a nearby source population is not present. These populations are additionally separate from the Study area by major barriers to dispersal, including highways and residential development.</p>
INVERTEBRATES		
<p>Mission blue butterfly <i>Icaria icarioides missionensis</i></p> <p><u>Status:</u> Federally endangered</p>	<p>Inhabits grasslands of the San Francisco Peninsula. Three larval host plants: <i>Lupinus albifrons</i>, <i>L. littoralis</i> var. <i>variicolor</i>, and <i>L. formosus</i>, of which <i>L. albifrons</i> is favored.</p>	<p>Not Expected. Although grassland habitat is present, along with suitable larval host plant, <i>Lupinus littoralis</i> var. <i>variicolor</i>, the Study Area is outside of the documented range for the species, and dispersal is limited. The closest CNDDB occurrence is 9 miles to the northeast, and this species is not known to disperse long distances from population centers.</p>

Mitigation

Based on results of the 2022 field surveys and updated database searches, baseline conditions within the Study Area, including the location and extent of habitat for special-status wildlife species, have not changed since initial field work was conducted in 2016. Therefore, all mitigation measures from the 2020 BRE remain the same. However, based on feedback received from the CCC in their August 26, 2020 comment letter, minor revisions were made to the following mitigation measures in the 2020 BRE (Attachment 2), as indicated by underlined added text, or ~~strikethrough~~ deleted text.

Special-Status and Non-Special-Status Nesting Birds. Nearly all the habitats within the Study Area have the potential to support nesting birds, and the LCLUP considers raptors unique species. In addition, the nests of most native birds are protected under the MBTA. Vegetation removal or other ground disturbance activities have the potential to impact nesting birds directly or indirectly. The following measures shall be implemented to avoid take of special-status birds and non-special-status nesting birds protected by the MBTA.

Because Project work is scheduled to occur in between September and October, no pre-construction nesting bird surveys are required.³ However, if the Project schedule changes such that ground disturbance or removal of vegetation occurs outside of this work window, pre-construction surveys shall be required. If ground disturbance or removal of vegetation occurs between February 1 and June 30, pre-construction surveys should be performed by a qualified biologist no more than 72 hours of commencement of construction, and surveys should extend out a minimum of 300-feet from the work area for non-raptor species and 500-feet for raptor species. Buffers for nesting birds should be 300-feet from non-raptors and 500-feet from raptors. 14 days prior to commencement of such activities to determine the presence and location of nesting bird species. If ground disturbance or removal of vegetation occurs between July 1 and August 31, pre-construction surveys should be performed within 30 days prior to such activities. If active nests are present, establishment of temporary protective breeding season buffers will avoid direct mortality of these birds, nests, or young. The appropriate buffer distance is dependent on the species, surrounding vegetation, and topography and should be determined by a qualified biologist as appropriate to prevent nest abandonment and direct mortality during construction. If construction cannot wait out fledglings, encroachment on these distances may be considered by the biologist but should set a minimum buffer distance (with an absolute minimum of 50-feet for non-raptors and 150-feet for raptors) and should employ visual screening and sound barriers (noise at sensitive receptors should be no more than 60-65 dB).

CRLF and SFGS. California red-legged frog and SFGS are unlikely to inhabit the Study Area because of the absence of preferred habitat components and distance from suitable and/or occupied habitats. However, because of the suitability of nearby habitats, these species may on occasion disperse through the Study Area under certain conditions; therefore, they are discussed further. No suitable breeding habitat is found within the Study Area; however, CRLF may occasionally disperse through the Study Area. WRA recommends the following measures be implemented to avoid take of CRLF and SFGS.

- All ground disturbance activities shall be restricted to the dry season (April 15 through October 15) or when all habitats have dried and reduce potential for CRLF and SFGS to disperse through the Study Area.
- A qualified biologist shall survey the work site immediately before the onset of vegetation clearing or ground disturbance activities to verify if species are present and all habitats are dry. If CRLF are found and do not move out of the work area on their own, USFWS shall be contacted to determine if relocation is appropriate. In making this determination, the USFWS will consider if an appropriate relocation site exists. If the USFWS approves moving animals, a USFWS-approved biologist will be allowed sufficient time to move them from the work site before work activities begin. Any SFGS shall be allowed to leave the work area on their own and shall be monitored as practical by the biologist to ensure they do not reenter the work area.

³ Non-breeding Season: September 1 through January 31

- Prior to the start of groundbreaking activities, all construction personnel will receive training on listed species and their habitats by a qualified biologist. The importance of these species and their habitat will be described to all employees as well as the minimization and avoidance measures that are to be implemented as part of the project. An educational brochure containing color photographs of all listed species in the work area will be distributed to all employees working within the Project Area. The original list of employees who attend the training sessions will be maintained by the contractor and be made available for review by the USFWS and the CDFW upon request.
- The contractor shall designate a person or employee to monitor on-site compliance with all minimization measures. The on-site monitor(s) will be on-site daily for the duration of the Project, including vegetation removal, grading, and clean-up activities.
- All vehicles and equipment associated with work-activities will be parked or staged only within designated staging areas at the end of each workday or when not in use to minimize habitat disturbance and water quality degradation.
- Wildlife exclusion fencing would be erected and maintained around the project construction staging areas to prevent SFGS and CRLF from entering staging areas overnight. Exclusion fencing should be installed with the fence stakes placed on the inside of the fencing (closest to the project boundary) to prevent frogs or snakes from using the stakes to maneuver over the fence. The fencing shall be maintained until all work has been completed.
- Installation of fencing will be performed under the supervision of a qualified biologist.
- No work shall occur within 48 hours following a rain event (over 0.25 inch in a 24-hour period). Following a rain event, a qualified biologist shall survey the work site immediately before reinitiation of ground disturbance activities to verify if species are present. If CRLF or SFGS are observed, then the steps previously described for the initial pre-construction survey shall be followed.
- Any erosion control materials used shall be made of tightly woven fiber netting or similar material to ensure that the CRLF and SFGS do not get trapped. This limitation will be communicated to the contractor. Plastic mono-filament netting (erosion control matting), rolled erosion control products, or similar material shall not be used at the Project Area because CRLF, SFGS, and other species may become entangled or trapped in it.
- No trash shall be deposited on the site during construction activities. All trash shall be placed in trash receptacles with secure lids stored in vehicles and removed nightly from the Project Area.
- Where feasible, any fueling and maintenance of equipment shall be conducted off-site and at least ~~50-100~~ feet from any wetland or designated ESHA.
- CRLF and SFGS may take refuge in cavity-like and den-like structures such as pipes and may enter stored pipes and become trapped. Therefore, all construction pipes, culverts, or similar structures that are stored at the site for one or more overnight periods will be either securely capped prior to storage or thoroughly inspected by the on-site monitor and/or the construction foreman/manager for these animals before the pipe is subsequently buried, capped, or otherwise used or moved in any way. It is also recommended these structures, if stored, are kept within the staging areas either in developed areas or within wildlife exclusion fencing. If CRLF are found and do not move out of the work area on their own, USFWS shall be contacted to determine if relocation is appropriate. In making this determination, the USFWS will consider if an appropriate relocation site exists. If the USFWS approves moving animals, a USFWS-approved biologist will be allowed sufficient time to move them from the work site before work



activities begin. If SFGS is found, it shall be allowed to passively leave the work area on its own, as determined by the on-site monitor, unless in circumstances where the animal is determined to be trapped as discussed below.

- To prevent CRLF and SFGS from taking refuge and becoming trapped in cavity-like and den-like structures such as pipes and stored pipes, all construction pipes, culverts, or similar structures that are stored at the site for one or more overnight periods would be either securely capped prior to storage or thoroughly inspected by the on-site monitor and/or the construction foreman/manager for these animals before the pipe is subsequently buried, capped, or otherwise used or moved in any way.
- To protect potential burrows, soil shall not be stockpiled on the ground unless it is a paved surface.
- Furthermore, to prevent inadvertent entrapment of CRLF or SFGS during construction, the on-site monitor and/or construction foreman/manager shall ensure that all excavated, steep-walled holes or trenches more than one foot deep are completely covered at the close of each working day by plywood or similar materials or provided with one or more escape ramps constructed of earth fill or wooden planks and inspected by the on-site biologist. Before such holes or trenches are filled, they will be thoroughly inspected for trapped animals by the on-site biologist and/or construction foreman/manager.
- If at any time a trapped CRLF or SFGS is discovered by the on-site biologist or anyone else, the animal shall be allowed to passively leave the work area on its own, as determined by the onsite biologist. If a CRLF or SFGS is trapped, only a USFWS-approved biologist shall move the individual under the direction of USFWS and CDFW. The biologist will also report these findings, as required, to appropriate the agencies.
- Mitigation measures should account for potential scenarios in which USFWS determines that relocation of CRLF isn't appropriate.

Jurisdictional Features

Field surveys conducted during April and June 2022 confirmed the location and extent of Corps, RWQCB, CDFW, and CCC jurisdictional features within the Study Area; therefore, there have been no changes to the impact quantities documented in the 2020 BRE (Attachment 2). However, in response to the following comment in the CCC's August 26, 2020 comment letter, the impact discussion and Table 3 below provide clarification that all features included in Table 2 of the 2020 BRE are considered to be jurisdictional by the CCC.

5. Table 2. On PDF Pg. 41, the listed "CCC/LCP-only" amount of wetland area within the project site is a smaller figure than the rest of the wetland area. The applicant should clarify whether the table implies that the other outlined potentially jurisdictional area for the Army Corps, RWQCB, and CDFW would also be included in what is considered wetlands by the Coastal Commission.

Impacts

Temporary and permanent impacts to Corps, RWQCB, CDFW, and CCC/LCLUP jurisdictional features including wetlands, non-wetland waters, and ESHAs, are discussed in this section, depicted on Attachment 1- Figure 4, and summarized in Table 3.

Seasonal Wetlands. The Project will result in 503 square feet (sf; 0.01 acre) of permanent fill impacts to seasonal wetlands regulated by the Corps/RWQCB/CCC through trenching the utility line connection along Redondo Beach Road, construction of the trail footings, and decking

shading. Additionally, approximately 402 sf (0.01 acre) of temporary impacts to seasonal wetlands regulated by the Corps/RWQCB/CCC via construction access.

Waters. Project work at the unnamed intermittent to perennial drainage in Ravine 9 will result in no permanent impacts to non-wetland waters below OHWM regulated by the Corps. Temporary impacts of 288 sf (0.01 acre; 31 linear feet) of non-wetlands waters below OHWM regulated by Corps/RWQCB/CDFW/CCC would occur from construction access.

Central Coast Riparian Scrub. The Project has been designed to the maximum extent feasible to avoid impacts to Central Coast riparian scrub habitat and areas above OHWM but inside TOB at Ravine 9. However, on the eastern crossing at Ravine 9 contains a rock-lined ditch and the work at the western stairs overlap with portions of this habitat. As a result, portions of Central Coast riparian scrub and areas inside TOB will be impacted.

Up to 423 sf (0.01 acre; 14 linear feet) of permanent impacts to this feature below TOB and additional 648 sf (0.02 acre) of riparian habitat outside TOB regulated by RWQCB/CCC/CDFW would occur from Park Avenue Paper Street improvements, southern beach stairs/handrail/cribwall construction, and construction and improvements to drainage features including a slope drain by the south stairs as well as rock lined swales and ditches. An additional 1,155 sf (0.03 acre; 48 linear feet) of temporary impacts to areas below TOB and 1,453 sf (0.03 acre) of riparian habitat outside TOB through construction access would occur. Consequently, the Project will result in 1,071 sf (0.02 acre) of permanent impacts and 2,608 sf (0.06 acre) of temporary impacts to central coast riparian scrub habitat regulated by the CDFW/RWQCB/CCC resulting from work at the eastern portion (crossing) and western portion (stairs) of Ravine 9 in the Project area.

Table 3. Project Jurisdictional Impacts

POTENTIALLY JURISDICTIONAL AREA		PERMANENT IMPACT AREA acreage [square feet] / linear feet		TEMPORARY IMPACT AREA acreage [square feet] / linear feet
		FILL	SHADING	
Corps ⁴ /RWQCB ⁵ /CCC	Seasonal Wetlands	0.01 ac [503 sf]	-	0.01 ac [402 sf]
	Ocean (to HTL ⁶)	-	-	-
	Non-wetland Waters of the U.S./State (to OHWM ⁷)	-	-	0.01 ac [288 sf]/31 lf
CORPS/RWQCB/CCC TOTAL		0.01 ac [503 sf]	-	0.01 ac [690 sf]/31 lf
RWQCB ⁸ / CDFW ⁹ /CCC	Non-wetland Waters of the State (to TOB ¹⁰)	0.01 ac [423 sf]/14 lf	-	0.03 ac [1,155 sf]/48 lf
	Riparian Scrub	0.02 ac [648 sf]	-	0.03 ac [1,453 sf]

⁴ Section 404

⁵ Section 401

⁶ High Tide Line

⁷ Ordinary High Water Mark

⁸ Section 401

⁹ Section 1600

¹⁰ Top of Bank

POTENTIALLY JURISDICTIONAL AREA	PERMANENT IMPACT AREA acreage [square feet] / linear feet		TEMPORARY IMPACT AREA acreage [square feet] / linear feet
	FILL	SHADING	
RWQCB/CDFW/CCC TOTAL	0.02 ac [1,071 sf]/14 lf	-	0.06 ac [2,608 sf]/48 lf
CCC/Half Moon Bay LCLUP ¹¹	Coastal Seasonal Wetlands (ESHA ¹²)	<0.01 ac [28 sf]	<0.01 ac [21 sf]
	Sea Cliffs (ESHA)	-	<0.01 ac [151 sf]
CCC/LCLUP-ONLY TOTAL	<0.01 ac [28 sf]	<0.01 ac [21 sf]	<0.01 ac [356 sf]

¹¹ The Half Moon Bay LCLUP will also have jurisdiction over Corps' jurisdictional areas listed above.

¹² Environmentally Sensitive Habitat Area

Attachment 1. Updated BRE Figures (2022)



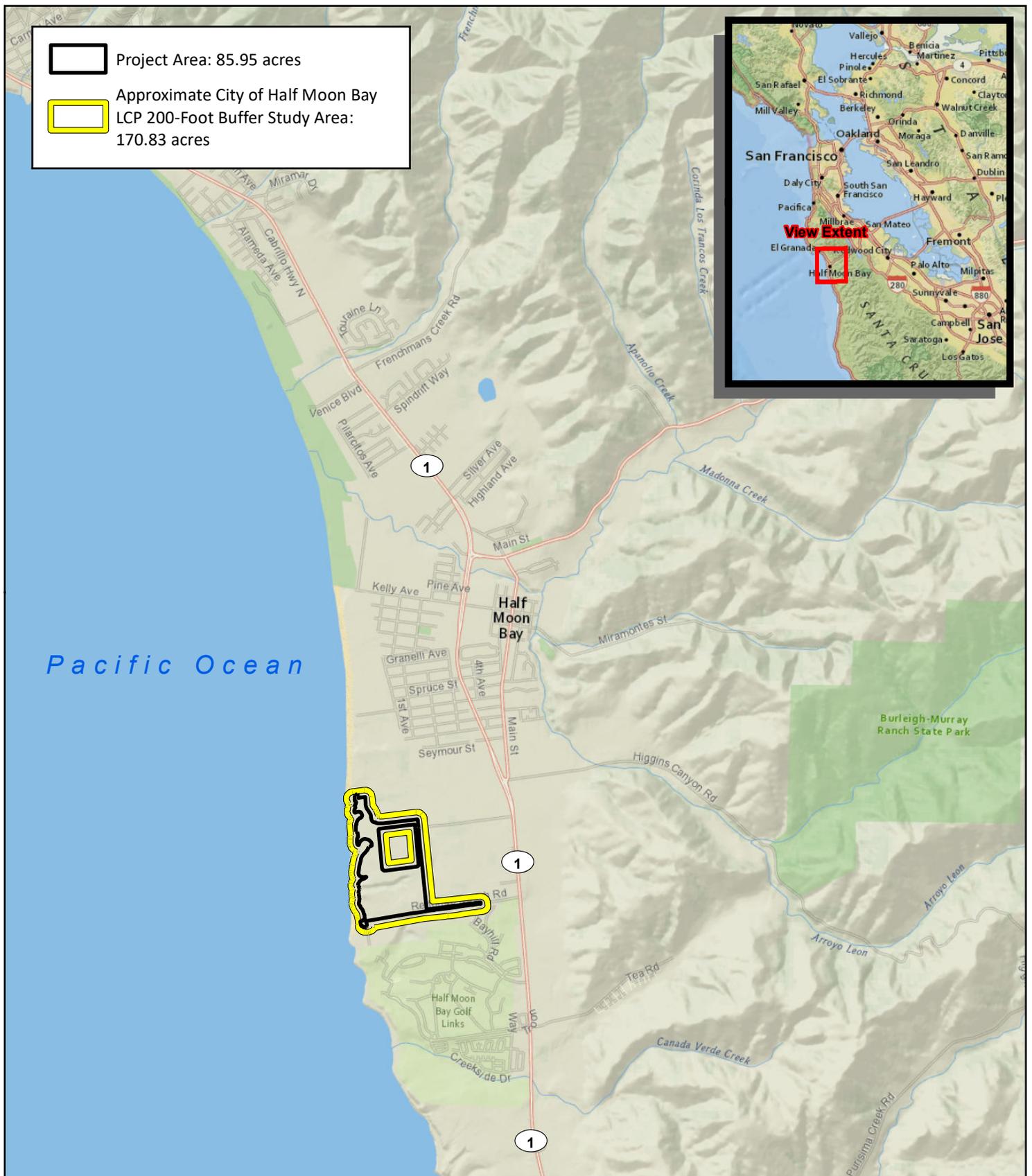
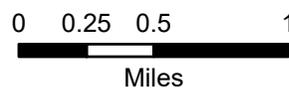


Figure 1. Location Map of Study Area

Wavecrest Coastal Trail: Southern Alignment
Half Moon Bay, California



ENVIRONMENTAL CONSULTANTS



Map Prepared Date: 9/3/2020
Map Prepared By: mweidenbach
Base Source: Esri Streaming - National Geographic
Data Source(s): WRA

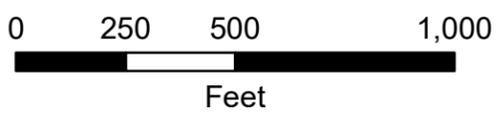


	Project Area: 85.95 acres
	Approximate City of Half Moon Bay LCP 200-Foot Buffer Study Area: 170.83 acres
	Protected Land Parcels
	Privately-Owned Parcels

Figure 2. Protected Land and Privately-Owned Parcels within the Study Area



Wavecrest Coastal Trail: Southern Alignment
Half Moon Bay, California



Map Prepared Date: 5/9/2022
Map Prepared By: SGillespie
Base Source: Esri Streaming - World Imagery
Data Source(s): WRA, San Mateo County Parcels

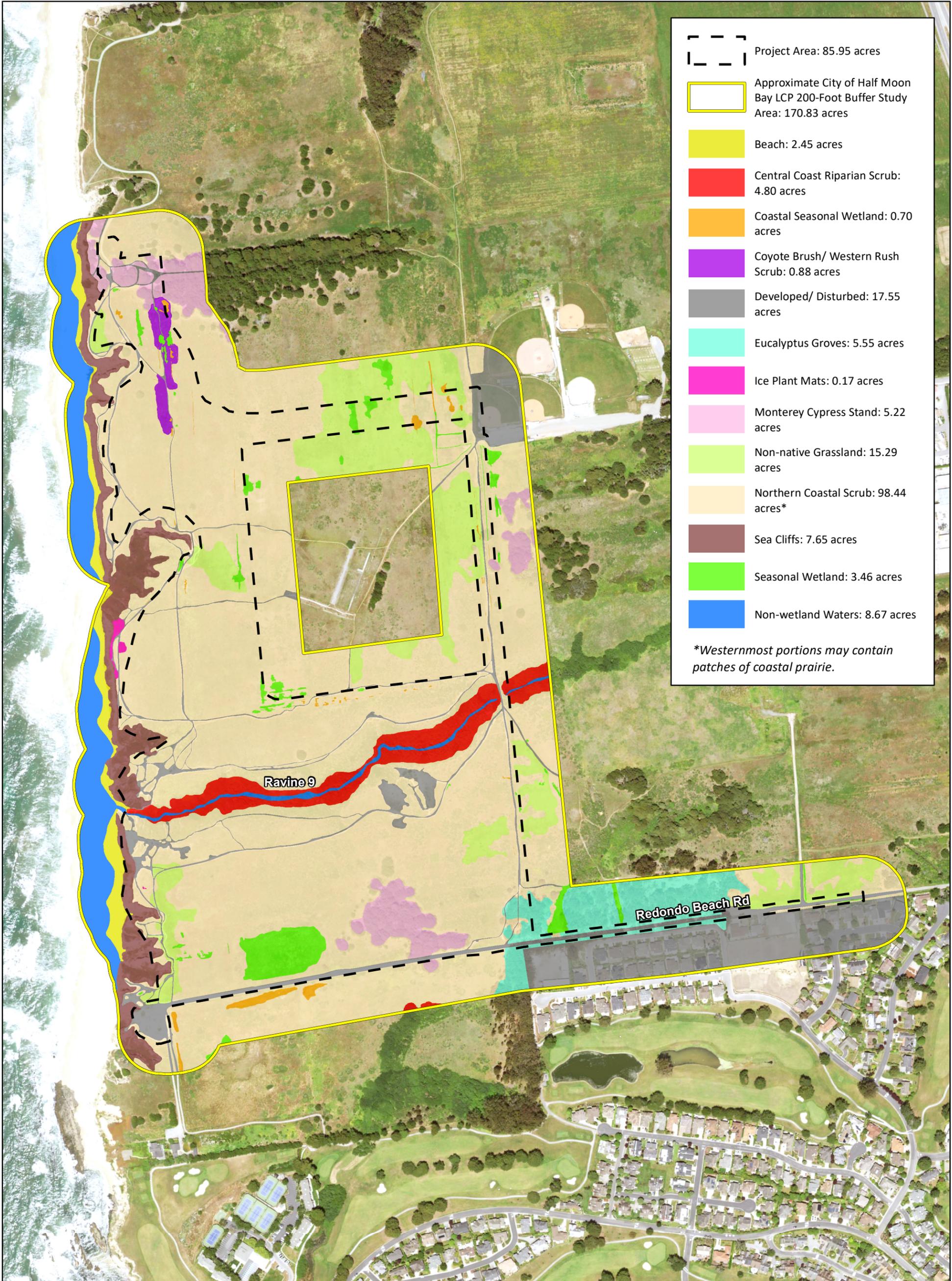
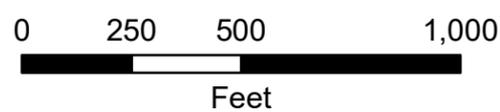


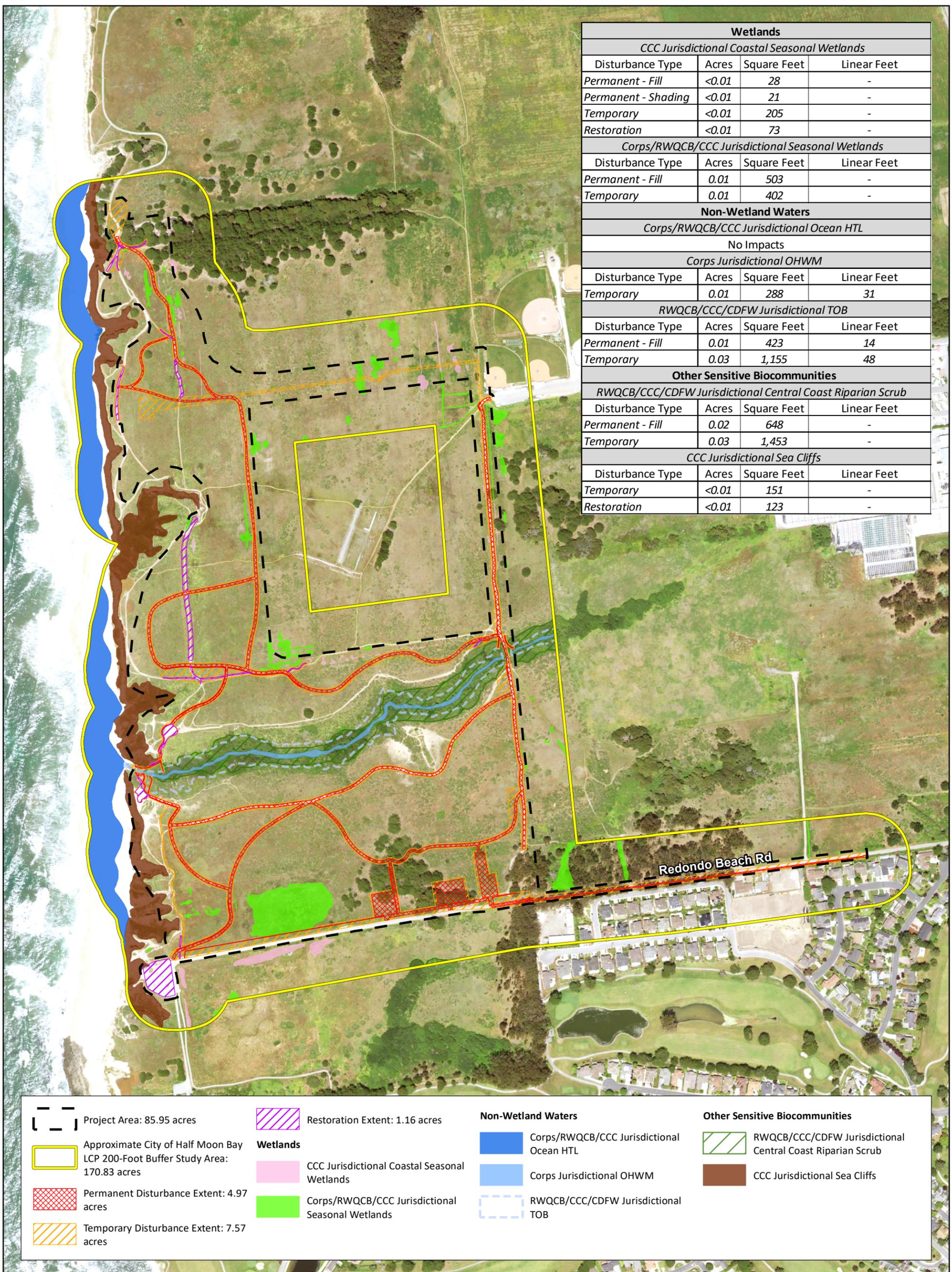
Figure 3. Biological Communities within the Study Area

No project impacts will be occurring on private parcels. Biological resource findings depicted on adjacent private parcels are for context only and are preliminary.

Wavecrest Coastal Trail: Southern Alignment
Half Moon Bay, California



Map Prepared Date: 5/9/2022
Map Prepared By: SGillespie
Base Source: Esri Streaming - World Imagery
Data Source(s): WRA



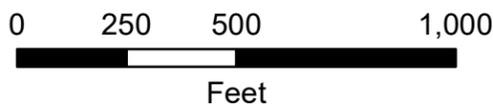
Wetlands			
CCC Jurisdictional Coastal Seasonal Wetlands			
Disturbance Type	Acres	Square Feet	Linear Feet
Permanent - Fill	<0.01	28	-
Permanent - Shading	<0.01	21	-
Temporary	<0.01	205	-
Restoration	<0.01	73	-
Corps/RWQCB/CCC Jurisdictional Seasonal Wetlands			
Disturbance Type	Acres	Square Feet	Linear Feet
Permanent - Fill	0.01	503	-
Temporary	0.01	402	-
Non-Wetland Waters			
Corps/RWQCB/CCC Jurisdictional Ocean HTL			
No Impacts			
Corps Jurisdictional OHWM			
Disturbance Type	Acres	Square Feet	Linear Feet
Temporary	0.01	288	31
RWQCB/CCC/CDFW Jurisdictional TOB			
Disturbance Type	Acres	Square Feet	Linear Feet
Permanent - Fill	0.01	423	14
Temporary	0.03	1,155	48
Other Sensitive Biocommunities			
RWQCB/CCC/CDFW Jurisdictional Central Coast Riparian Scrub			
Disturbance Type	Acres	Square Feet	Linear Feet
Permanent - Fill	0.02	648	-
Temporary	0.03	1,453	-
CCC Jurisdictional Sea Cliffs			
Disturbance Type	Acres	Square Feet	Linear Feet
Temporary	<0.01	151	-
Restoration	<0.01	123	-

<ul style="list-style-type: none"> Project Area: 85.95 acres Approximate City of Half Moon Bay LCP 200-Foot Buffer Study Area: 170.83 acres Permanent Disturbance Extent: 4.97 acres Temporary Disturbance Extent: 7.57 acres 	<ul style="list-style-type: none"> Restoration Extent: 1.16 acres 	<p>Wetlands</p> <ul style="list-style-type: none"> CCC Jurisdictional Coastal Seasonal Wetlands Corps/RWQCB/CCC Jurisdictional Seasonal Wetlands 	<p>Non-Wetland Waters</p> <ul style="list-style-type: none"> Corps/RWQCB/CCC Jurisdictional Ocean HTL Corps Jurisdictional OHWM RWQCB/CCC/CDFW Jurisdictional TOB 	<p>Other Sensitive Biocommunities</p> <ul style="list-style-type: none"> RWQCB/CCC/CDFW Jurisdictional Central Coast Riparian Scrub CCC Jurisdictional Sea Cliffs
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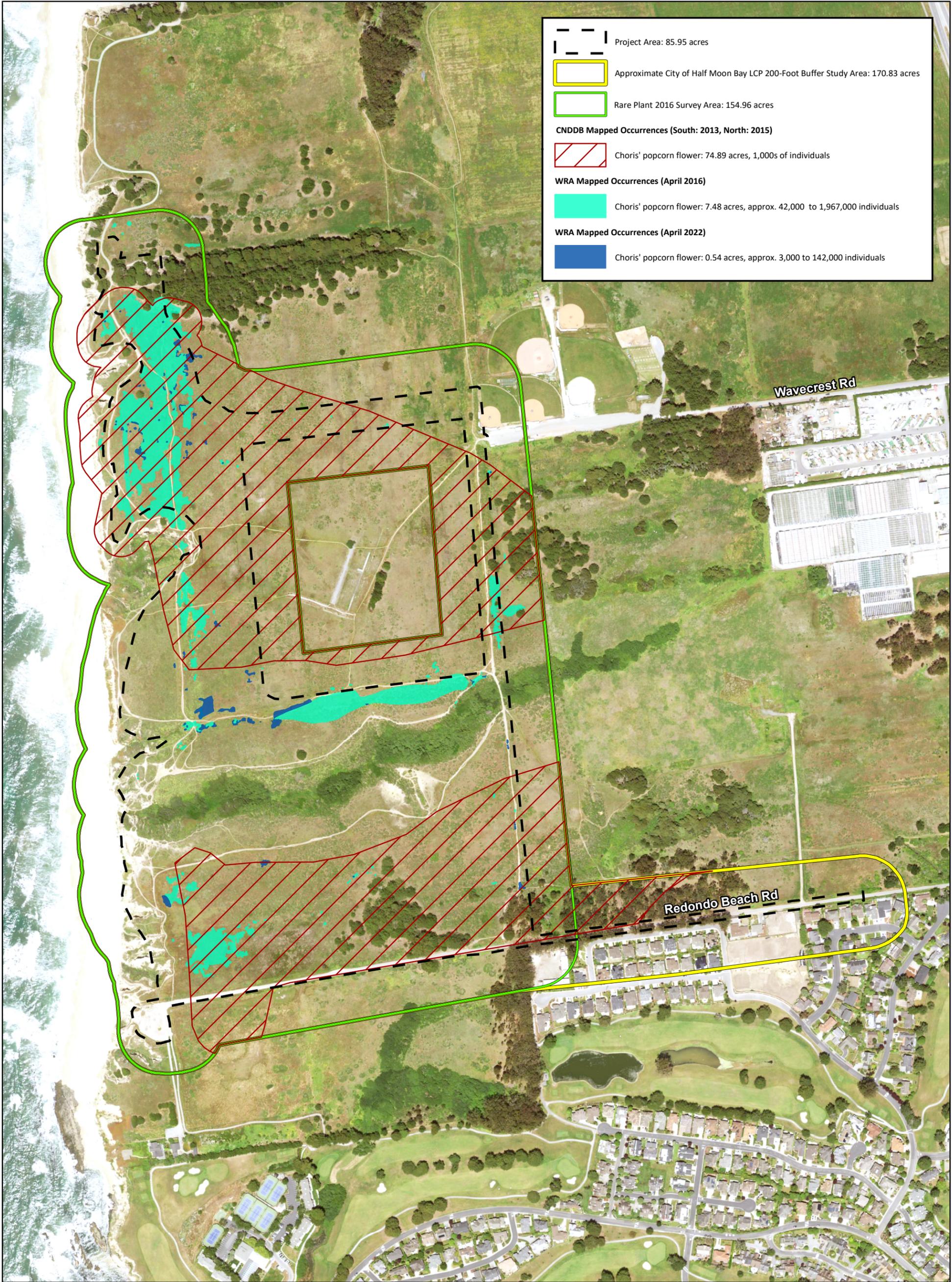
Figure 4. Project Area Impacts to Corps, RWQCB, CCC/LCP, and CDFW Jurisdictional Features

No project impacts will be occurring on private parcels. Biological resource findings depicted on adjacent private parcels are for context only and are preliminary.

Wavecrest Coastal Trail: Southern Alignment
Half Moon Bay, California



Map Prepared Date: 5/9/2022
Map Prepared By: SGillespie
Base Source: Esri Streaming - World Imagery
Data Source(s): WRA



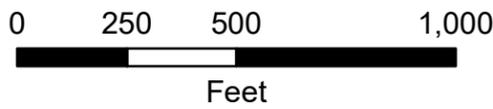
- - - - - Project Area: 85.95 acres
 [Yellow Outline] Approximate City of Half Moon Bay LCP 200-Foot Buffer Study Area: 170.83 acres
 [Green Outline] Rare Plant 2016 Survey Area: 154.96 acres
CNDBB Mapped Occurrences (South: 2013, North: 2015)
 [Red Hatched] Choris' popcorn flower: 74.89 acres, 1,000s of individuals
WRA Mapped Occurrences (April 2016)
 [Cyan] Choris' popcorn flower: 7.48 acres, approx. 42,000 to 1,967,000 individuals
WRA Mapped Occurrences (April 2022)
 [Blue] Choris' popcorn flower: 0.54 acres, approx. 3,000 to 142,000 individuals

Figure 5. Special-Status Plants Observed within Study Area

No project impacts will be occurring on private parcels. Biological resource findings depicted on adjacent private parcels are for context only and are preliminary.



Wavecrest Coastal Trail: Southern Alignment
Half Moon Bay, California



Map Prepared Date: 5/9/2022
 Map Prepared By: SGillespie
 Base Source: Esri Streaming - World Imagery
 Data Source(s): WRA, CDFW CNDBB January 2020

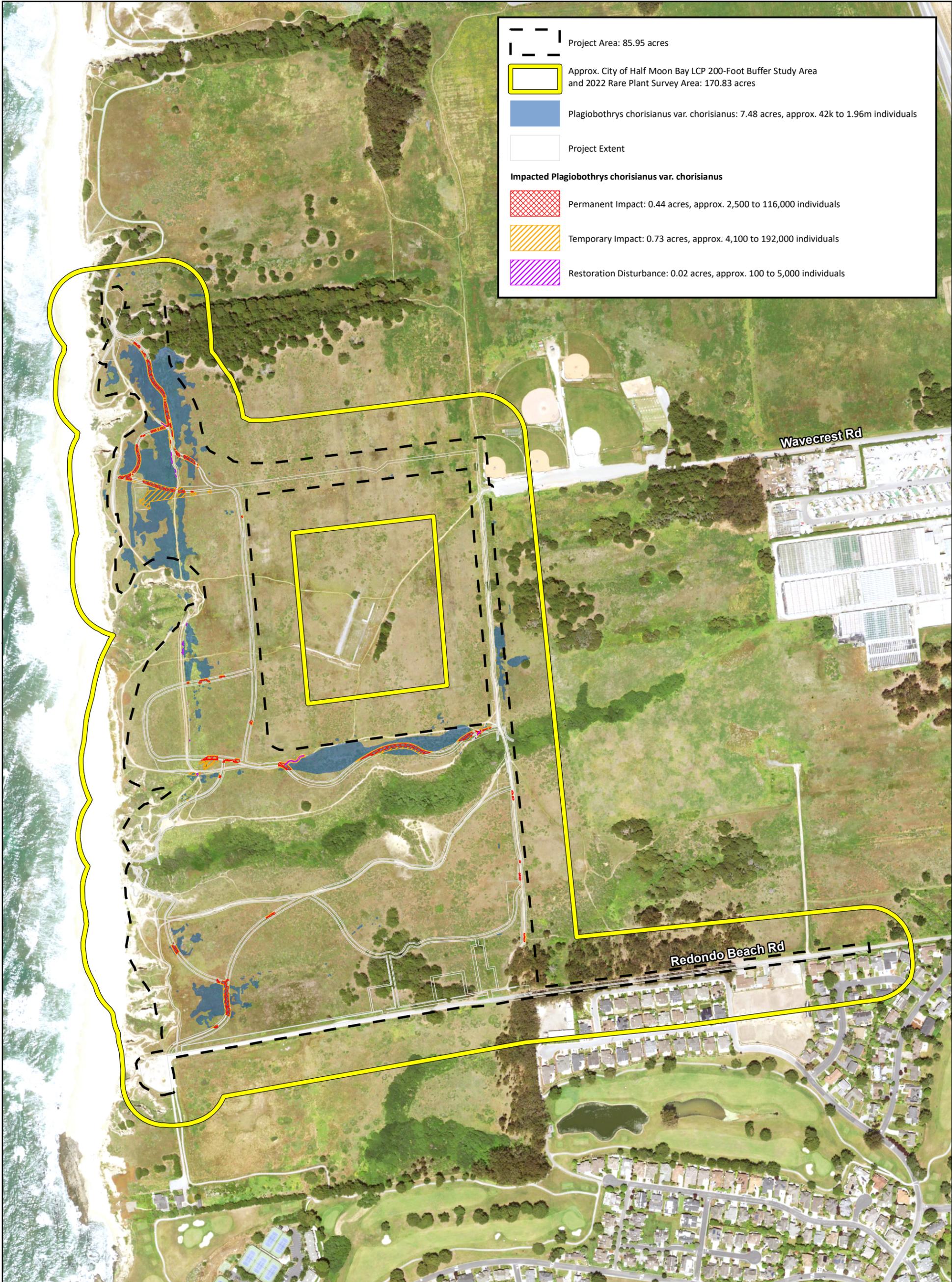
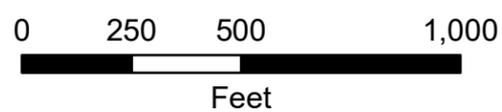


Figure 6. Project Area Impacts to Rare Plants

No project impacts will be occurring on private parcels. Biological resource findings depicted on adjacent private parcels are for context only and are preliminary.

Wavecrest Coastal Trail: Southern Alignment
Half Moon Bay, California



Map Prepared Date: 5/9/2022
Map Prepared By: SGillespie
Base Source: Esri Streaming - World Imagery
Data Source(s): WRA

Attachment 2. BRE (June 2020)

Wavecrest Coastal Trail: Southern Alignment Project Biological Resources Evaluation

HALF MOON BAY, SAN MATEO COUNTY, CALIFORNIA

Prepared For:

Coastside Land Trust
788 Main Street
Half Moon Bay, California 94019

WRA Contact:

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Date:

June 2020

WRA Project No. 24346



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LIST OF ACRONYMS AND ABBREVIATIONS

BRE	Biological Resources Evaluation
Cal-IPC	California Invasive Plant Council
CCC	California Coastal Commission
CCR	California Code of Regulations
CCT	California Coastal Trail
CDFW	California Department of Fish and Wildlife (formerly California Department of Fish and Game [CDFG])
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CLT	Coastal Land Trust
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
Corps	U.S. Army Corps of Engineers
CRLF	California red-legged frog
ESHA	Environmentally Sensitive Habitat Area
FAC	Facultative species (equal in wetland or non-wetlands)
FACW	Facultative wetland species (usually found in wetlands)
FESA	Federal Endangered Species Act
HTL	High Tide Line
LCP	Local Coastal Program
NMFS	National Marine Fisheries Service
NRCS	Natural Resources Conservation Service
OBL	Obligate wetland species (almost always found in wetlands)
OHWM	Ordinary High Water Mark
RPW	Relatively permanent water
RWQCB	Regional Water Quality Control Board
SFGS	San Francisco garter snake
SP	Sample Point
SW	Seasonal wetland
TNW	Traditionally navigable waters
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WRA	WRA, Inc.

1.0 INTRODUCTION

On January 26 and 27 and February 9 and 16, 2016, WRA, Inc. (WRA) conducted a biological resource evaluation (BRE) of the proposed trail alignment (Project) for the Wavecrest Coastal Trail: Southern Alignment Project (Project Area) and an approximately 200-foot buffer around the Project Area. In November 2019, the Project design added stairs for beach access and the Project Area was expanded to include an approximately 0.25-mile-long portion of the right-of-way (ROW) of Redondo Beach Road for the proposed installation of a sewer lateral, utility line (water line extension) and new restroom. An approximately 200-foot buffer around this portion of the ROW (Utility Area) was preliminarily assessed. A BRE of the Utility Area was conducted by WRA on January 14, 2020. Together, the Project Area and associated 200-foot buffer (collectively referred to as the Study Area) encompass approximately 171 acres, located in Half Moon Bay, San Mateo County (Figure 1). The term “Study Area” is used to describe both the Project Area as well as the buffer area adjacent to the proposed Project Area. Privately-owned parcels, or parcels not owned by CLT, are considered “off-site” for the purposes of this BRE. The purpose of the site visit and BRE is to identify, describe, and map any sensitive habitats, including riparian and wetland areas or other Environmental Sensitive Habitat Areas (ESHAs), and determine the potential for or presence of habitat for “rare, threatened, or endangered” species that may occur in the Project Area or associated approximately 200-foot buffer. WRA performed the BRE in accordance with the City of Half Moon Bay (City) Local Coastal Program (LCP), including Section 18.38.035 of the Zoning Code LCP Implementation Plan, and Chapter 3 of the Land Use Plan. This assessment is based on site conditions observed on the dates of the site visits, related information available at the time of the study, and from reviewing past reports completed on the portions of or areas proximate to the Study Area. Additionally, a protocol-level special-status plant species survey was conducted on April 15 and June 22, 2016, within the Study Area, not including the 2019-added Utility Area, during the blooming period of all special-status plants determined to have a high or moderate potential to occur in the Study Area. This report also contains an evaluation of potential impacts to special-status species or ESHAs that may occur as a result of the proposed project and potential mitigation measures to compensate for those impacts.

1.1 Project Description

The Project will formalize a segment of the California Coastal Trail (CCT), develop spur trails to access coastal overlooks, install two separate stairs for beach access, create three staging area for vehicular and trailer parking, provide split-rail fencing and trail signage, install a flush restroom with sewage and potable water connection, restore informal trails¹ and heavily eroded areas, and improve an existing dirt service road that runs along a “paper street” identified as Park Avenue by the City. The Project includes trail and staging improvements and revegetation. In accordance with Section 18.38.070.E (Coastal Access Ways – Bluff Edge Trails) of the City’s Municipal Zoning Code, the Project would improve public access while reducing erosion of the bluff edge by (1)

¹ “Informal” trails, also called social trails or desire paths, are footpaths created unintentionally by visitors repeatedly using the exact same path for crossing terrain. Informal trails form when visitors cross through an area lacking an official path, and can be problematic depending on their alignment.

creating a sufficient setback from the bluff edge and (2) revegetating/restoring the existing informal trails that are located close to the bluff edge. In addition, the proposed Project would be consistent with the intent of Municipal Code Section 18.38.070 in that:

- It would create two new stairways as a vertical beach access point between Seymour Street and Redondo Beach Road and provide connectivity to the existing beach access point located at Poplar Beach/Blufftop Park.
- It is consistent with the Access Improvements Map (1993 Local Coastal Program/ Land Use Plan). Public access, including equestrian access, within the Project Area would be limited to the formalized trail and spur trails described that constitute the Project. Horses would be allowed on the compacted shoulders located on either side of the gravel trail. Horses would not be allowed on the stairs to the beach. Signs would provide information indicating allowable uses.
- It is consistent with the City's recently adopted Bicycle and Pedestrian Master Plan.

The Project is also consistent with conceptual alignments identified by the Access Improvements Map (1993 Local Coastal Program/ Land Use Plan) and the Wavecrest Restoration Plan, and would be responsive to Wavecrest Restoration Plan's guidelines for protecting bluff edges and riparian corridors and minimizing runoff. The Project's three key components (i.e., trail development, restoration, and construction) are described in detail below.

1.1.1 Trail

The Project includes 10,527 linear feet of trail, with a 6,165-linear-foot segment of the CCT, 1,941 linear feet of spur trails to an overlook or beach access, 2,143 linear feet of Park Avenue improvements, and two sets of stairs providing beach access. Trail amenities include two trailhead signs, four hazards signs, one interpretive sign, and one bench. The Project would provide formal public access through the Project Area and would respect coastal resources by directing foot and bicycle traffic to a safe route away from wetlands and other sensitive areas or utilizing short boardwalks, or puncheons, to cross wetland areas to maintain hydrological connectivity. The Project would also focus future trail users along a formal trail network, which would reduce multiple informal footpaths currently on the site and reduce erosion caused by informal recreation. The Project features, including the trail alignment, bluff overlooks, and staging areas, are described below.

1.1.2 Trail and Stair Design

The primary trail would be a compacted rock 8-foot trail with 2-foot soft shoulders². Spurs, which are shorter, narrower trail segments that branch from the main trail and lead to overlook, or loop out along the bluff or stairs would be compacted rock and 6-foot with 2-foot shoulders on either

² During trail construction, the contractor will be directed to excavate to a depth to reach suitable base material. This is assumed to be between 4 and 6 inches for the full width of the trail and shoulders, although onsite field observations will be required during construction. All excavated material will be spread on-site to repair ruts and subsidence at existing disturbed areas. The contractor will be advised that all soil placement or storage should occur within 100 feet minimum distance from existing wetlands.

side. Compacted rock would be used to ensure durability and provide a firm surface for the trail, while a 2-foot-wide soft shoulder will provide for equestrian use. No impervious materials would be used for trail construction. Trail features would include 42-inch tall split-rail fencing in hazardous areas, two 48- by 36-inch signs to provide directions at each trail end, mounted at eye level on redwood posts, as well as hazard signs at various locations along the trail warning of dangerous eroding cliffs. The proposed trail connection to the CCT would require minor thinning of a stand of cypress trees, but would otherwise leave the cypress stand intact. The proposed staging areas would require removing approximately 21 trees, nine of which are Heritage Trees according to the City's definition. Nine replacement trees would be planted within the Project Area.

The project includes wooden trail stairs to the beach on both the northern and southern side of Ravine 9. Informal pathways have eroded the mouth of Ravine 9 and formal stairs will direct trail users along a designated route. Trail stairs will be constructed in an interlocking crib style with wooden timbers cribbed together to form risers and backfilled with compacted native earth. The stairs will have a handrail along one side. Stair construction will require recontouring existing eroded areas and filling existing gullies with engineered fill to stabilize the bluff edge.³ New pipes will be installed to prevent water from flowing down the trail stairs and will discharge at the bottom on Ravine 9 or along the beach. A short crib wall will be constructed along the south side of Ravine 9 to support the bottom of the stairs on this side.

1.1.3 Vista Point

The Project includes one formal vista point. The vista point would include one sign warning of dangerous eroding cliff edge mounted at a height of 4 feet, 2 inches on redwood posts that would be installed at eye level to educate trail users. The overlook will also include one interpretive sign and a bench.

1.1.4 Trail Staging

The Project will include a main staging area and two secondary staging areas. The main staging area would include one flush toilet, and a pervious surface for parking totaling 12,600 square feet. Utilities for the flush restroom will include the extension of a potable water line along Redondo Beach Road and a connection to the existing sewer along Park Avenue Paper Street. Two additional staging areas will have pervious surface for parking totaling 14,600 square feet and 11,200 square feet, respectively. The new parking areas will be gravel and have no designated parking lines, however together it is estimated that they can accommodate approximately 72 personal vehicles and two trucks with horse trailers. No formal bike parking is included at any lot. There will be a trailhead sign at the main parking lot.

1.1.5 Trail Alignment

³ Preliminary stair designs have been completed but cut and fill estimates will be completed at a later stage. Any excess cut material will be used to repair ruts and subsidence at existing disturbed areas as described for trail excavation.

The Project would adhere to a 60-foot setback from the edges of the sea cliff and ravines, with the exception of spur trails to the bluff overlooks, restoration of heavily eroded areas, and stairs to the beach. The Project would connect to the existing trail located to the north. Where the proposed trail alignment interfaces with Ravine 9, it would cross over an existing culvert at the most eastern point along Park Avenue Paper Street. Stairs will be constructed in Ravine 9 for beach access at the most western point. Otherwise, the proposed trail would largely avoid the riparian areas adjacent to this ravine. The primary alignment would avoid seasonal wetlands to the extent possible. However, in areas where the alignment would disturb wetlands, the trail will be elevated using 12-foot-long puncheon segments (raised wooden trail), that are 6-feet wide with 7-foot total footing. The footings are 3-inches above ground and extend a minimum of 2 feet. The proposed trail would connect to staging areas along Redondo Beach Road and to an existing segment of the CCT that begins at Redondo Beach Road and Thone Avenue. All trails are located on property owned by the Coastside Land Trust or within public right-of-way owned by the City of Half Moon Bay. The trail alignment avoids private parcels.

1.1.6 Restoration

The Project Area has multiple existing informal trails that have resulted in significant erosion from lack of vegetation. In an effort to reduce erosion and correct the damaged areas, the Project would decommission and restore informal trail areas near the proposed main trail that are located on Coastside Land Trust (CLT) property or owned by the City of Half Moon Bay. The Project would also include the restoration of a bare area that is currently used for parking at the western terminus of Redondo Beach Road. Restoration of informal trails and parking areas will involve site preparation measures including topsoil treatment, soil de-compaction, erosion control, and/or other measures as appropriate. These damaged areas would be ripped and hand seeded with a native coastal seed mix to provide at least 50 percent vegetative cover within one year. The native coastal seed mix will include native plants such as blue-eyed grass (*Sisyrinchium bellum*), California sagebrush (*Artemisia californica*), California oatgrass (*Danthonia californica*), meadow barley (*Hordeum brachyantherum*), and maritime brome (*Bromus maritimus*)⁴. Seed mix shall also include seeds harvested from the Choris' popcorn flower (*Plagiobothrys chorisianus* var. *chorisianus*, CNPS Rank 1B.2) harvested by biologists and provided to the Contractor. Seeded areas will be covered by straw layer sufficient to allow germination, prevent erosion and minimize weed growth. Removal of non-native plants will be conducted by mowing, hand weeding, and raking, with minimal usage of herbicide application or burning.

1.1.7 Temporary Construction Requirements

Construction of the Project would require the establishment of temporary construction access and staging areas and the use of wildlife exclusion fencing, as discussed in Section 5.3.4 below.

⁴ On April 17, 2020, Toni Corelli of California Native Plant Society, Santa Clara Valley Chapter responded by email in support of the removal of two species (*Eriophyllum confertiflorum* and *Hordeum jubatum*) from the proposed seed mix and replacement with three species that are known to co-occur with Choris' popcornflower (*Bromus maritimus*, *Danthonia californica*, and *Hordeum brachyantherum* ssp. *brachyantherum*).

Detailed mitigation measures are described in the Initial Study and will be included in the Mitigation Monitoring and Reporting Program Report for the Project.

1.1.8 Construction Access and Staging

Construction would occur in the dry season from approximately April 15 to October and may occur over the course of multiple years. Construction-related trips would come from Highway 1 and access the site from various access points depending on the phase of the Project. Construction vehicles could access the site from Wavecrest Road or Redondo Beach Road and temporary access routes that would traverse the Project Area to a designated construction staging area. At the end of the construction phase, the access route would be ripped and reseeded with a locally-sourced native coastal seed mix composed of species observed at Wavecrest (Appendix D and/or California Native Plant Society, Santa Clara Valley Chapter comment letter dated December 2016) except in areas where the trail is utilized for construction access. All staging areas are larger than 5,000 square feet and provide adequate space for two 20-foot long storage containers and up to ten parking spaces. Space will be provided for vehicles to turn around.

1.2 Description of the Study Area

The Study Area contains a portion of the CCT. The proposed trail alignment is situated on undeveloped land owned by CLT and the City of Half Moon Bay (Figure 1). The focus of this report is the approximately 87-acre Project Area. In addition, an approximately 200-foot buffer area around the Project Area was assessed. Collectively, the 87-acre Project Area and the 200-foot buffer are referred to as the Study Area (approximately 171 acres). The Study Area is situated on a terrace above scenic coastal bluffs and includes non-native grassland, disturbed and developed areas, Monterey cypress stands, eucalyptus groves, ice plant mats, beaches (active sand dunes), sea cliffs, northern coastal scrub, coyote brush/rush scrub, central coast riparian scrub, seasonal wetlands, non-wetland waters, and coastal wetlands, with elevations up to 83 feet. Northern coastal scrub, Monterey cypress stands, non-native grassland, developed/disturbed, and seasonal wetland form the northern boundary; sea cliffs, beaches, and the Pacific Ocean form the western boundary of the Study Area; northern coastal scrub, developed/disturbed areas, central coast riparian scrub, and seasonal wetlands form the eastern boundary; and coastal seasonal wetland, northern coastal scrub, eucalyptus groves, non-native grassland, and developed/disturbed areas, including Redondo Beach Road, form the southern boundary.

The Study Area is locally known as one of the most important habitat sites for wintering raptors in San Mateo County, supporting high population density and diversity of raptors (Sequoia Chapter Audubon Society 2008). The Study Area is also a popular hiking trail with easily accessible coastal bluffs and several informal overlooks. While an informal dirt 'social' trail makes its way along the coastal bluffs, the Project aims to re-route public access away from the eroding bluffs and improve the existing conditions to safely accommodate a formal trail, particularly during wet conditions.

The Study Area consists of CLT-owned and privately-owned parcels (Figure 2).⁵ However, the proposed trail development, would occur on CLT-owned parcels and areas designated as public right-of-ways.

Off-site parcels were visually assessed for their potential to contain sensitive resources and findings are considered preliminary given the following: the parcels are not part of the larger Study Area and are included to comply with the Coastal Act, LCP, and the City's Municipal Code for ESHA and riparian buffer zones with the purpose of avoiding impacts and determining the need for ESHA buffers due to offsite, potentially sensitive resources. For instance, the areas adjoining Redondo Beach Road are within the 200-foot Project Area and Utility Area buffers; yet these areas were not traversed and examined on-foot during this evaluation. All findings within the prescribed buffer along Redondo Beach Road and outside the Project Area represent our best professional judgments based on off-site observations and are considered to be preliminary.

⁵ The privately-owned parcels tie to a residential lot subdivision of the land that took place in the early-1900s.

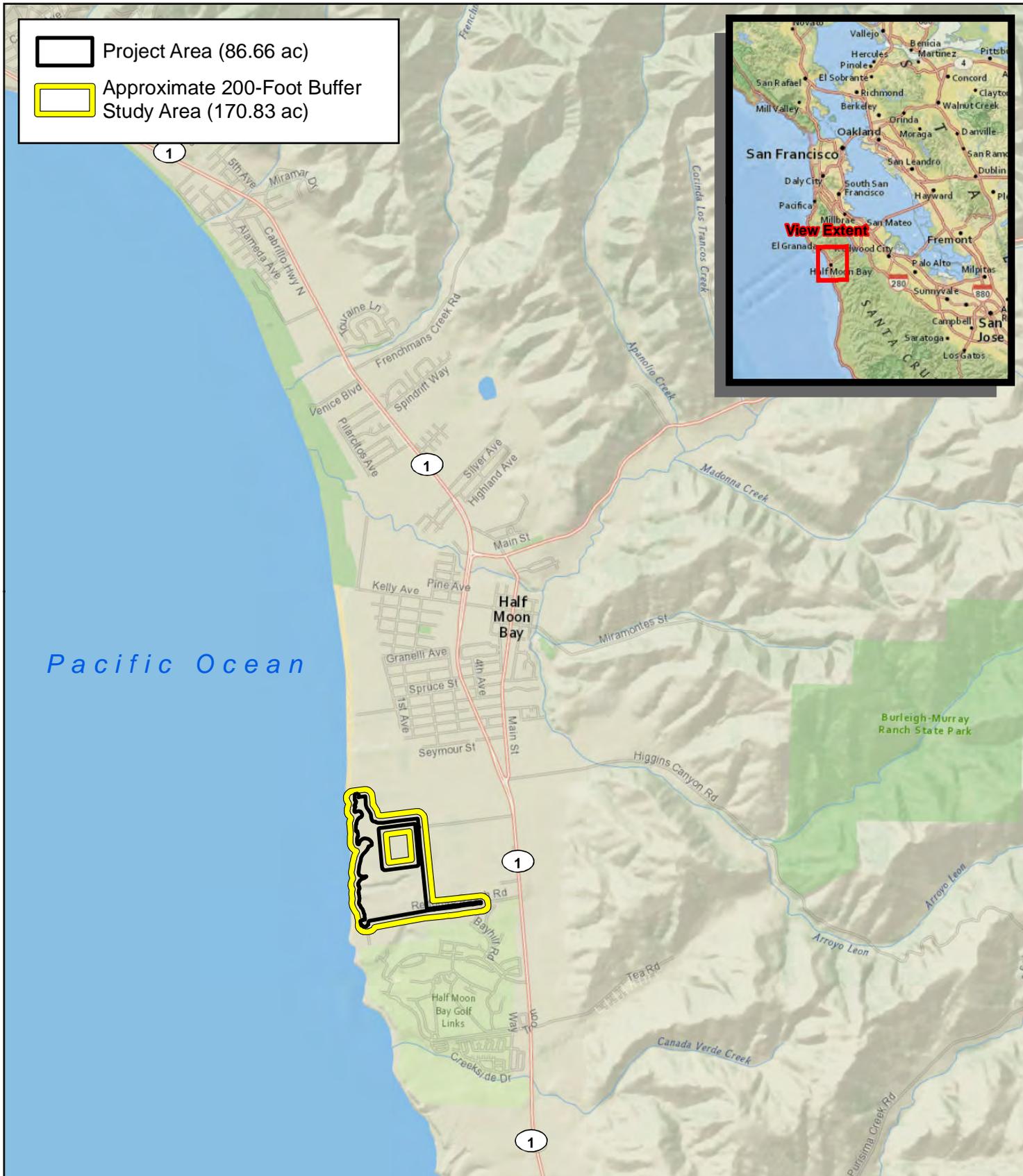
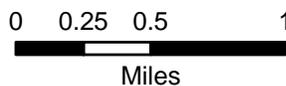


Figure 1. Location Map of Study Area

Wavecrest Coastal Trail: Southern Alignment
Half Moon Bay, California



Map Prepared Date: 1/28/2020
Map Prepared By: mweidenbach
Base Source: Esri Streaming - National Geographic
Data Source(s): WRA

2.0 REGULATORY BACKGROUND

The following sections explain the regulatory context of the BRE, including applicable laws and regulations that were applied to the field investigations and analysis of potential project impacts.

2.1 Special-Status Species

Special-status species include those plants and wildlife species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing under the federal Endangered Species Act (FESA) or California Endangered Species Act (CESA). The ESA affords protection to federally listed species. The CESA affords protection to both state-listed species and those that are formal candidates for state listing. In addition, California Department of Fish and Wildlife (CDFW) Species of Special Concern and the National Marine Fisheries Service (NMFS) Species of Concern, which are species that face extirpation if current population and habitat trends continue, U.S. Fish and Wildlife Service (USFWS) Birds of Conservation Concern, sensitive species included in USFWS Recovery Plans, and CDFW special-status invertebrates are all considered special-status species. Although CDFW Species of Special Concern generally have no special legal status, they are given special consideration under the California Environmental Quality Act (CEQA). In addition to regulations for special-status species, most birds in the United States, including non-status species, are protected by the Migratory Bird Treaty Act of 1918. Under this legislation, destroying active nests, eggs, and young is illegal. Bat species designated as “High Priority” by the Western Bat Working Group (WBWG) qualify for legal protection under Section 15380(d) of the CEQA Guidelines. Species designated “High Priority” are defined as “imperiled or are at high risk of imperilment based on available information on distribution, status, ecology and known threats” (CDFG 2006). Plant species on the California Native Plant Society (CNPS) Rare and Endangered Plant Inventory (CNPS 2020a) with California Rare Plant Ranks of 1, 2, and some species with a Rank of 3, are also considered special-status plant species and must be considered under CEQA. Rank 4 species and some Rank 3 species are typically only afforded protection under CEQA when such species are particularly unique to the locale (e.g., range limit, low abundance/low frequency, limited habitat) or are otherwise considered locally rare.

City of Half Moon Bay Local Coastal Program and Land Use Plan

The Half Moon Bay Land Use Policies and Map constitute the Land Use Plan of the LCP. The Zoning Code (Title 18 of the Municipal Code, including Chapter 18.20, which regulates Coastal Development Permits) together with the Zoning District Map constitutes the Implementation Plan of the LCP. The primary goal of the LCP is to ensure that the local government’s land use plans, zoning ordinances, zoning maps, and implemented actions meet the requirements of the provisions and policies of the Coastal Act at the local level. Coastal Resource Conservation Standards are described in Chapter 18.38 of the LCP and define sensitive habitat and coastal resource areas for conservation to include: sand dunes; marine habitats; sea cliffs; riparian areas; wetlands, coastal tidelands and marshes, lakes, ponds, and adjacent shore habitats; coastal or off-shore migratory bird nesting sites; areas used for scientific study, refuges, and reserves; habitats containing unique or rare and endangered species; rocky intertidal zones; coastal scrub communities; wild strawberry habitat; and archaeological resources. Marine and water resources (including riparian habitats) are further defined in Chapter 3 of the Land Use Plan.



	Project Area (86.66 ac)
	Approximate 200-Foot Buffer Study Area (170.83 ac)
	Protected Land Parcels
	Privately-Owned Parcels

Figure 2. Protected Land and Privately-Owned Parcels within the Study Area



Wavecrest Coastal Trail: Southern Alignment
Half Moon Bay, California



Map Prepared Date: 1/28/2020
Map Prepared By: mweidenbach
Base Source: Esri World Imagery January 2020
Data Source(s): WRA, San Mateo County Parcels

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Critical Habitat

Critical habitat is a term defined and used in the FESA as a specific geographic area that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. The FESA requires federal agencies to consult with the USFWS and/or NMFS to conserve listed species on their lands and to ensure that any activities or projects they fund, authorize, or carry out will not jeopardize the survival of a threatened or endangered species. In consultation for those species with critical habitat, federal agencies must also ensure that their activities or projects do not adversely modify critical habitat to the point that it will no longer aid in the species' recovery. In many cases, this level of protection is similar to that already provided to species by the FESA "jeopardy standard." However, areas that are currently unoccupied by the species but which are needed for the species' recovery, are protected by the prohibition against adverse modification of critical habitat.

2.2 Sensitive Biological Communities

Sensitive biological communities include habitats that fulfill special functions or have special values, such as wetlands, streams, and riparian habitat. These habitats are regulated under federal regulations (such as the Clean Water Act), state regulations (such as the Porter-Cologne Act, the CDFW Streambed Alteration Program, and CEQA), or local ordinances or policies (such as City Tree Ordinances, Special Habitat Management Areas, applicable LCPs, and General Plan Elements). Mitigation measures for impacts to these communities are discussed in Section 5 of this report.

2.2.1 Federal Jurisdiction over Wetlands and "Other Waters"

Section 404 of the Clean Water Act

Section 404 of the Clean Water Act gives the U.S. Environmental Protection Agency ("EPA") and the U.S. Army Corps of Engineers (Corps) regulatory and permitting authority regarding discharge of dredged or fill material into "navigable waters of the United States". Section 502(7) of the Clean Water Act defines waters as "waters of the United States, including territorial seas." Section 328 of Chapter 33 in the Code of Federal Regulations (CFR) defines the term "waters of the United States" as it applies to the jurisdictional limits of the authority of the Corps under the Clean Water Act. A summary of the definition of "waters of the U.S." in 33 CFR 328.3 as published in 1986 includes:

- (1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- (2) All interstate waters including interstate wetlands;
- (3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters: (i) which are or could be used by interstate or foreign travelers for recreational or other purposes; or (ii) from which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or (iii) which are used or could be used for industrial purpose by industries in interstate commerce;

- (4) All impoundments of waters otherwise defined as waters of the United States under the definition;
- (5) Tributaries of waters identified in paragraphs (a) (1)—(4) of this section;
- (6) The territorial seas;
- (7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) (1)—(6) of this section.

Areas not considered to be “waters of the United States” are exempted under the Preamble to the 1986 Rule and subject to a case by case analysis, including:

- (a) Non-tidal drainage and irrigation ditches excavated on dry land.
- (b) Artificially irrigated areas which would revert to upland if the irrigation ceased.
- (c) Artificial lakes or ponds created by excavating and/or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing,
- (d) Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating and/or diking dry land to retain water for primarily aesthetic reasons.
- (e) Waterfilled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States (see 33 CFR 328.3(a)).

In the Corps Rivers and Harbors regulations (33 CFR Part 329.4), the term “navigable waters of the U.S.” is defined to include all those waters that are subject to the ebb and flow of the tide, and/or presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.

The limits of Corps jurisdiction under Section 404 as given in 33 CFR Section 328.4 are as follows: (a) *Territorial seas*: three nautical miles in a seaward direction from the baseline; (b) *Tidal waters of the U.S.*: high tide line (HTL) or to the limit of adjacent non-tidal waters; (c) *Non-tidal waters of the U.S.*: ordinary high water mark or to the limit of adjacent wetlands; (d) *Wetlands*: to the limit of the wetland.

The Corps has developed standard methods and data reporting forms contained in the *U.S. Army Corps of Engineers Wetlands Delineation Manual* (Corps Manual; Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Arid West Supplement; Corps 2008) to determine the presence or absence of Waters of the U.S. The procedures described in the Corps Manual were used to identify wetlands and non-wetland waters in the Study Area that are potentially subject to regulation under Section 404 of the Clean Water Act.

Rapanos Guidance

The Corps and EPA issued joint guidance on implementing the June 19, 2006, U.S. Supreme Court opinions resulting from *Rapanos v. United States* and *Carabell v. United States* (“Rapanos”) cases. Under this guidance, the Corps will maintain jurisdiction over traditionally navigable waters

("TNW"), relatively permanent water ("RPW"), and non-relatively permanent waters that have a significant nexus to the biological, chemical, and physical characteristics of a RPW or TNW.

The first standard of the guidance evaluates jurisdiction over a water body that is a RPW (i.e., it flows year-round, or at least "seasonally") and over wetlands adjacent to such water bodies if the wetlands directly "abut" the water body (i.e., if the wetlands are not separated from the water body by an upland feature such as a berm, dike, or road). In order for the Corps to make a jurisdictional determination of Section 404 wetlands and waters, field staff must determine whether there is a significant hydrologic connection between a non-perennial RPW and a TNW. The second standard, for tributaries that are not RPWs, requires a case-by-case "significant nexus" evaluation to determine the extent of Section 404 jurisdiction.

2.2.2 Waters of the State

The Dickey Water Pollution Act of 1949 and Porter Cologne Act of 1969 established the State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Board (RWQCB) districts in the State of California. The SWRCB and each RWQCB district regulates activities in Waters of the State, which include Waters of the U.S. Waters of the State are defined by the Porter-Cologne Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." In addition, the SWRCB has adopted a wetland definition that is similar to, but slightly different from, that used by the Corps of Engineers. The state definition as adopted in April 2019 and currently in effect, states that:

An area is wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation.

The RWQCB regulates discharges of fill and dredged material under Section 401 of the Clean Water Act and the Porter-Cologne Water Quality Control Act through the State Water Quality Certification Program. State Water Quality Certification is necessary for all projects that require a Corps permit, or fall under other federal jurisdiction, and have the potential to impact waters of the State. In order for a Section 404 permit to be valid, Section 401 of the Clean Water Act requires a Water Quality Certification or waiver to be obtained. The Water Quality Certification (or waiver) determines that the permitted activities will not violate water quality standards individually or cumulatively over the term of the action. Water quality certification must be consistent with the requirements of the Federal Clean Water Act, the California Environmental Quality Act, the California Endangered Species Act, and Porter-Cologne Act.

If a proposed project or portion of a proposed project does not require a federal permit, but does involve dredge or fill activities that may result in a discharge to Waters of the State, the RWQCB has the option to regulate the dredge and fill activity under its state authority in the form of Waste Discharge Requirements or Certification of Waste Discharge Requirements. In these cases, a Water Quality Certification is not necessary under Section 401 of the Clean Water Act because federal jurisdiction does not apply.

2.2.3 Streams, Lakes, and Riparian Habitat

Streams and lakes, as habitat for fish and wildlife species, are subject to jurisdiction by CDFW under Sections 1600-1616 of the State Fish and Game Code. Alterations to or work within or adjacent to streambeds or lakes generally require a 1602 Lake and Streambed Alteration Agreement. The term stream, which includes creeks and rivers, is defined in the California Code of Regulations (CCR) as follows: "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation" (14 CCR 1.72). In addition, the term stream can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream dependent terrestrial wildlife (CDFG 1994). Riparian is defined as, "on, or pertaining to, the banks of a stream;" therefore, riparian vegetation is defined as, "vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself" (CDFG ESD 1994). Removal of riparian vegetation also requires a Section 1602 Lake and Streambed Alteration Agreement from CDFW.

2.2.4 California Coastal Commission and Half Moon Bay Local Coastal Program (LCP)

The California Coastal Commission (CCC)/LCP regulates the diking, filling, or dredging of wetlands within the coastal zone. Section 30121 of the Coastal Act defines "wetlands" as land "which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens." In addition, the Half Moon Bay LCP defines "wetlands" as an area where the water table is at, near, or above the land surface long enough to bring about the formation of hydric soils or to support the growth of plants, which normally are found to grow in water or wet ground. Wetlands do not include vernal wet areas where the soils are not hydric. The 1981 CCC Statewide Interpretive Guidelines state that hydric soils and hydrophytic vegetation "are useful indicators of wetland conditions," but the presence or absence of hydric soils and/or hydrophytes alone are not necessarily determinative when the CCC identifies wetlands under the Coastal Act.

The boundaries of areas regulated by the Corps and CCC/LCP are often not the same due to the differing goals of the respective regulatory programs and because these agencies use different definitions for determining the extent of wetland areas. For example, the Corps requires that positive indicators for the presence of wetland hydrology, hydric soils, and a predominance of hydrophytic vegetation be present for an area to meet the Corps' wetland definition. The CCC does not necessarily require that all three wetland indicators (wetland hydrology, hydric soils, and a predominance of hydrophytic vegetation) be present for an area to be determined to be a "wetland"; rather, the presence of hydric soils in the absence of a predominance of hydrophytes (or vice versa) could be sufficient for a positive wetland determination.

The California Coastal Commission ESHA Definition

The CCC defines an ESHA as follows:

"Environmentally sensitive habitat area" means any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an

ecosystem and which could be easily disturbed or degraded by human activities and developments.”

The CCC Guidelines contain definitions for specific types of ESHAs, including: wetlands, estuaries, streams and rivers, lakes, open coastal waters and coastal waters, riparian habitats, other resource areas, and special-status species and their habitats. For the purposes of this report, WRA has taken into consideration any areas that may meet the definition of any ESHA defined by the CCC guidelines or the Half Moon Bay LCP.

2.2.5 Other Sensitive Biological Communities

Other sensitive biological communities not discussed above include habitats that fulfill special functions or have special values. Natural communities considered sensitive are those identified in local or regional plans, policies, regulations, or by the CDFW. The CDFW ranks sensitive communities as “threatened” or “very threatened” (CDFW 2019) and keeps records of their occurrences in its Natural Diversity Database (CNDDDB; CDFW 2020). Impacts to sensitive natural communities identified in local or regional plans, policies, regulations or by the CDFW or USFWS must be considered and evaluated under CEQA (CCR: Title 14, Div. 6, Chap. 3, Appendix G). Specific habitats may also be identified as sensitive in City or County General Plans or ordinances.

2.3 Other Local Policies

2.3.1 Heritage Trees

The City of Half Moon Bay Municipal Code, Section 7.40 has regulations protecting heritage trees. A heritage tree is defined as the following:

- A tree located on public or private property, exclusive of eucalyptus (*Eucalyptus* spp.), with a trunk diameter of 12 inches or circumference of approximately 38 inches measured at 48 inches above ground level.
- A tree or stand of trees so designated by resolution of the City Council based on its finding of special historical, environmental or aesthetic value, including a resolution adopted under former Chapter 12.16.
- Any street tree located in the public right of way along the entire length of Main Street or along Kelly Avenue between San Benito Street and Highway 1.

Any person who conducts any grading, excavation, demolition or construction activity on property shall do so in such a manner as to not threaten the health or viability or cause the removal of any heritage tree. Any such grading, excavation, demolition or construction activity performed within the drip line of a heritage tree, defined as the diameter of the tree’s canopy formed by branches and/or leaves extending outward from the trunk of the tree, will require submittal of a tree protection plan prepared by a certified arborist for review and approval by the city manager prior to issuance of any permit for grading or construction.

It is unlawful for any person to remove, or cause to be removed any heritage tree from any parcel of property in the city, or prune more than one-third of the branches or roots within a twelve-month period, without obtaining a permit.

3.0 METHODS

On January 26 and 27 and February 9 and 16, 2016, the Study Area, not including the Utility Area, was traversed on foot to determine (1) plant communities present within the Study Area, (2) if existing conditions provide suitable habitat for any special-status plant or wildlife species, and (3) if sensitive habitats including ESHA are present. A delineation of potentially jurisdictional aquatic resources was conducted simultaneously on these dates. On January 14, 2020, the Utility Area was assessed in the same manner, including a delineation of jurisdictional aquatic resources. Additionally, protocol-level special-status plant surveys were conducted on April 15 and June 22, 2016, during the appropriate blooming period for all special-status plant species with a high or moderate potential to occur in the Study Area, excluding the Utility Area. All plant and wildlife species encountered were recorded and are summarized in Appendix D. Prior to the site visit, aerial photographs, local soil maps, and *A Manual of California Vegetation, Online Edition* (CNPS 2020b) were reviewed to assess the potential for sensitive biological communities to occur in the Project Area. Plant nomenclature follows Baldwin et al. (2012) and subsequent revisions by the Jepson Flora Project (2020), except where noted. Because of recent changes in classification for many of the taxa treated by Baldwin et al. and the Jepson Flora Project, relevant synonyms are provided in brackets. For cases in which regulatory agencies, CNPS, or other entities base rarity on older taxonomic treatments, precedence was given to the treatment used by those entities.

Privately owned parcels within the Study Area were only visually assessed for their potential to contain sensitive resources. During the jurisdictional delineation, soils were not examined within private parcels and only vegetation and visible signs of hydrology were assessed to make preliminary determinations discussed below.

3.1 Biological Communities

Prior to the site visit, the Soil Survey of San Mateo County, California (NRCS 2020) was examined to determine if any unique soil types that could support sensitive plant communities and/or aquatic features were present in the Study Area. Biological communities were primarily classified based on existing descriptions found in the *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986) and *A Manual of California Vegetation, Online Edition* (CNPS 2020b). However, in some cases it is necessary to identify variants of community types or to describe non-vegetated areas that are not described in the literature. Biological communities were classified as sensitive or non-sensitive as defined by CEQA and other applicable laws and regulations.

3.1.1 Non-sensitive Biological Communities

Non-sensitive biological communities are those communities that are not afforded special protection under CEQA, and other state, federal, and local laws, regulations and ordinances. These communities may, however, provide suitable habitat for some special-status plant or wildlife species and are identified or described in Section 4.1.1 below.

3.1.2 Sensitive Biological Communities

Sensitive biological communities are defined as those communities that are given special protection under CEQA and other applicable federal, state, and local laws, regulations and

ordinances. Applicable laws and ordinances are discussed above in Section 2.0. Special methods used to identify sensitive biological communities are discussed below.

3.2 Corps Jurisdiction

The methods used in this study to delineate federal jurisdictional wetlands and non-wetland waters are based on the Corps Manual and Arid West Supplement. A general description of the Study Area, including plant communities present, topography, and land use was also generated during the delineation visits. The methods for evaluating the presence of wetlands and “other waters” of the U.S. employed during the site visit are described in detail below.

Prior to conducting field studies, available reference materials were reviewed, including the Soil Survey of San Mateo Area (USDA 1961), the U.S. Geological Survey (USGS) 7.5 minute Half Moon Bay quadrangle (USGS 2018), National Wetland Inventory (NWI) data (USFWS 2020a), rainfall data (NOAA 2016), WETS precipitation data (USDA 2016, 2020), aerial photos of the site (Google Earth 2020), and previous studies conducted within the Study Area.

The delineation of federal jurisdictional wetlands and non-wetland waters was performed in the Study Area, not including the Utility Area, on January 26 and 27 and February 9 and 16, 2016. The delineation of the Utility Area was conducted on January 14, 2020. The methods for evaluating the presence of wetlands and “other waters” employed during the site visit are described in detail below.

3.2.1 Potential Section 404 Jurisdictional Wetlands

The Corps has defined the term “wetlands” as follows:

Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

(33 CFR 328.3)

The three parameters listed in the Corps Manual that are used to determine the presence of wetlands are: (1) hydrophytic vegetation, (2) wetland hydrology, and (3) hydric soils. According to the Corps Manual:

"...[E]vidence of a minimum of one positive wetland indicator from each parameter (hydrology, soil, and vegetation) must be found in order to make a positive wetland delineation."

Data on vegetation, hydrology, and soils collected at sample points during the delineation site visits are reported on standard Corps data forms included in Appendix B. Once an area was determined to be a potential jurisdictional wetland, its boundaries were delineated using GPS equipment with sub-meter accuracy and mapped on a geo-referenced aerial photograph. The total acreage of potential jurisdictional wetlands was measured digitally using ArcGIS software. Indicators described in the Corps Manual that were used to make wetland determinations at each sample point in the Study Area and are summarized below.

Vegetation

Plant species observed in the Study Area were identified using the Jepson Manual, Second Edition (Baldwin et al. 2012) and the Jepson eFlora (Jepson Flora Project 2020). Plants were assigned a wetland indicator status according to the National Wetland Plant List (NWPL; Lichvar et al. 2016). Where differences in nomenclature occur between the Jepson Manual or the Jepson eFlora and the NWPL, the species name as it occurred in the NWPL is listed in brackets.

Wetland indicator statuses listed in the NWPL are based on the expected frequency of occurrence in wetlands as follows:

Classification (Abbreviation)	Definition*	Hydrophytic Species? (Y/N)
Obligate (OBL)	Almost always is a hydrophyte, rarely in uplands	Y
Facultative Wetland (FACW)	Usually is a hydrophyte but occasionally found in uplands	Y
Facultative (FAC)	Commonly occurs as either a hydrophyte or non-hydrophyte	Y
Facultative Upland (FACU)	Occasionally is a hydrophyte but usually occurs in uplands	N
Upland/Not Listed (UPL/NL)	Rarely is a hydrophyte, almost always in uplands	N

*See Lichvar et al. (2016)

The Arid West Supplement requires that a three-step process be conducted to determine if hydrophytic vegetation is present. The procedure first requires the delineator to apply the “50/20 rule” (Indicator 1) described in the manual. To apply the “50/20 rule”, dominant species are chosen independently from each stratum of the community. In general, dominant species are determined for each vegetation stratum from a sampling plot of an appropriate size surrounding the sample point. In general, dominants are the most abundant species that individually or collectively account for more than 50 percent of the total vegetative cover in the stratum, plus any other species that, by itself, accounts for at least 20 percent of the total cover. If greater than 50 percent of the dominant species has an OBL, FACW, or FAC status, ignoring + and - qualifiers, the sample point meets the hydrophytic vegetation criterion.

If the sample point fails Indicator 1 and both hydric soils and wetland hydrology are not present, then the sample point does not meet the hydrophytic vegetation criterion, unless the site is a problematic wetland situation. However, if the sample point fails Indicator 1 but hydric soils and wetland hydrology are both present, the delineator must apply Indicator 2.

Indicator 2 is known as the Prevalence Index. The prevalence index is a weighted average of the wetland indicator status for all plant species within the sampling plot. Each indicator status is given a numeric code (OBL = 1, FACW = 2, FAC = 3, FACU = 4, and UPL = 5). Indicator 2 requires the delineator to estimate the percent cover of each species in every stratum of the community and sum the cover estimates for any species that is present in more than one stratum. The delineator must then organize all species into groups according to their wetland indicator status and calculate

the Prevalence Index using the following formula, where A equals total percent cover:

$$PI = \frac{A_{OBL} + 2A_{FACW} + 3A_{FAC} + 4A_{FACU} + 5A_{UPL}}{A_{OBL} + A_{FACW} + A_{FAC} + A_{FACU} + A_{UPL}}$$

The Prevalence Index will yield a number between 1 and 5. If the Prevalence Index is equal to or less than 3, the sample point meets the hydrophytic vegetation criterion. However, if the community fails Indicator 2, the delineator must proceed to Indicator 3.

Indicator 3 is known as Morphological Adaptations. If more than 50 percent of the individuals of a FACU species have morphological adaptations for life in wetlands, that species is considered to be a hydrophyte and its indicator status should be reassigned to FAC. If such observations are made, the delineator must recalculate Indicators 1 and 2 using a FAC indicator status for this species. The sample point meets the hydrophytic vegetation criterion if either test is satisfied.

Soils

The Natural Resource Conservation Service (NRCS) defines a hydric soil as follows:

“A hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part.”

Federal Register July 13, 1994,
U.S. Department of Agriculture, NRCS

Soils formed over long periods of time under wetland (anaerobic) conditions often possess characteristics that indicate they meet the definition of hydric soils. Hydric soils can have a hydrogen sulfide (rotten egg) odor, low chroma matrix color, generally designated 0, 1, or 2, used to identify them as hydric, presence of redox concentrations, gleyed or depleted matrix, or high organic matter content.

Specific indicators that can be used to determine whether a soil is hydric for the purposes of wetland delineation are provided in the NRCS *Field Indicators of Hydric Soils in the U.S.* (USDA 2018). The Arid West Supplement provides a list of 23 of these hydric soil indicators, which are known to occur in the Arid West region. Soil samples were collected and described according to the methodology provided in the Arid West Supplement. Soil chroma and values were determined by utilizing a standard Munsell soil color chart (Munsell Color 2009).

Hydric soils were determined to be present if any of the soil samples met one or more of the 23 hydric soil indicators described in the Arid West Supplement.

Hydrology

The Corps jurisdictional wetland hydrology criterion is satisfied if an area is inundated or saturated for a period sufficient to create anoxic soil conditions during the growing season (a minimum of 14 consecutive days in the Arid West region). Evidence of wetland hydrology can include primary indicators, such as visible inundation or saturation, drift deposits, oxidized root channels, and salt crusts, or secondary indicators such as the FAC-neutral test, presence of a shallow aquitard, or crayfish burrows. The Arid West Supplement contains 16 primary hydrology indicators and 10 secondary hydrology indicators. Only one primary indicator is required to meet the wetland hydrology criterion; however, if secondary indicators are used, at least two secondary indicators must be present to conclude that an area has wetland hydrology.

The presence or absence of the primary or secondary indicators described in the Arid West Supplement was utilized to determine if sample points within the Study Area met the wetland hydrology criterion.

3.2.2 Potential Section 404 Jurisdictional “Other Waters”

The Study Area was also evaluated for the presence of “other waters”. Other waters subject to Corps jurisdiction include lakes, rivers, and perennial or intermittent streams. Corps jurisdiction of other waters in non-tidal areas extends to the ordinary high water mark (OHWM), defined as:

The term “ordinary high water mark” means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impresses on the bank, shelving, changes in the characteristics of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

Federal Register Vol. 51, No. 219,
Part 328.3 (d). November 13, 1986.

Other waters are identified in the field by the presence of a defined river or streambed, a bank, and evidence of the flow of water, or by the absence of emergent vegetation in ponds or lakes. Other waters that were found within the Study Area were mapped using a GPS device with mapping grade accuracy and are described in Section 4.0 of this report. Identification of the OHWM followed a *Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the United States* (Lichvar et al. 2008).

3.3 RWQCB Jurisdiction

The RWQCB generally adheres to the same delineation protocol set forth by the Corps (Environmental Laboratory 1987) for determining Waters of the State, with the exception that state wetlands include features that naturally lack vegetation but meet hydric soil and wetland hydrology indicators. Therefore, with the above exception, the methods used to determine potential Waters of the State were the same as those described above for potential Section 404 jurisdiction.

3.4 CCC/LCP Jurisdiction

The Study Area is within the City LCP boundaries; potential wetlands within the Study Area will be

analyzed in accordance with the LCP definitions.

3.4.1 Wetlands

The Coastal Act defines wetlands as:

Wetland means lands within the Coastal Zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens.

(Public Resources Code Section 30121)

The Half Moon Bay LCP defines wetlands as:

...areas where the water table is at, near, or above the land surface long enough to bring about the formation of hydric soils or to support the growth of plants which normally are found to grow in water or wet ground.

(City of Half Moon Bay Zoning Code Chapter 18.20)

CCC Administrative Regulations (Section 13577 (b)) provides a more explicit definition:

Wetlands are lands where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include those types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent or drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentrations of salt or other substance in the substrate. Such wetlands can be recognized by the presence of surface water or saturated substrate at some time during each year and their location within, or adjacent to, vegetated wetlands or deepwater habitats.

The Coastal Commission has considered this definition as requiring the observation of one diagnostic feature of a wetland such as wetland hydrology, dominance by wetland vegetation (hydrophytes), or presence of hydric soils as a basis for asserting jurisdiction under the Coastal Act.

In addition to the above definition, the *Statewide Interpretive Guidelines for Identifying and Mapping Wetlands and Other Wet Environmentally Sensitive Habitat Areas* (CCC 1981) provides technical criteria for use in identifying and delineating wetlands and other ESHAs within the Coastal Zone. The technical criteria presented in the guidelines are based on the Coastal Act definition and indicate that wetland hydrology is the most important parameter for determining a wetland, recognizing that:

. . . the single feature that most wetlands share is soil or substrata that is at least periodically saturated with or covered by water, and this is the feature used to describe wetlands in the Coastal Act. The water creates severe physiological problems for all plants and animals except those that are adapted for life in water or in saturated soil, and therefore only plants adapted to these wet conditions (hydrophytes) could thrive

in these wet (hydic) soils. Thus, the presence or absence of hydrophytes and hydric soils make excellent physical parameters upon which to judge the existence of wetland habitat areas for the purposes of the Coastal Act, but they are not the sole criteria.

The technical criteria require that saturation of soil in a wetland must be at or near the surface continuously for a period of time. The meaning of "at or near the surface" generally is considered to be approximately one-foot from the surface or less (the root zone), and the saturation must be continuously present for a period of time (generally more than two weeks) in order to create the necessary soil reduction (anaerobic) processes that create wetland conditions. For example, water from rain during a storm that causes saturation near the surface but then evaporates or infiltrates to 18 inches or deeper below the surface shortly after the storm does not meet the generally accepted criteria for wetland hydrology.

The presence of wetland classified plants or the presence of hydric soils (generally referred to as the "one parameter approach") can be used to identify an area as being a wetland in the Coastal Zone. There is correlation between the presence of wetland plants, wetland hydrology, and/or hydric soils occurring together, especially in natural undisturbed areas, and in many cases where one of these parameters is found (e.g., wetland plants) the other parameters will also occur. But there are situations which can result in the presence of wetland classified plants without there being wetland conditions, and these areas are not wetlands. Where these situations occur, the delineation study must carefully scrutinize whether the wetland classified plants that are present are growing there as hydrophytes in reducing (anaerobic) conditions caused by the presence of wetland hydrology or are there for some other (non-wetland) reason. Examples may include wetland-classified plants which are also salt-tolerant (e.g., alkali heath) and may be responding to either wetland conditions or saline soil conditions, but not necessarily both, and deep-rooted trees (e.g., willows) which are able to tap into deep groundwater sources and can grow in dry surface soils, but are also found in wetland conditions where surface water is present.

Hydic soils can also occur in upland areas especially in areas where historic disturbances may have exposed substratum or in densely vegetated grasslands (mollisols). Similarly, the delineation must determine if the hydric soil indicators are a result of frequent anaerobic conditions or if they are the result of non-wetland conditions.

The Coastal Act uses a broad wetland definition in which the presence of any one of the wetland parameters may indicate presence of a wetland. CCC presumes that the area is a wetland if one of the wetland parameters is present. However, there may be exceptions to this presumption if there is strong positive evidence of upland conditions, as opposed to negative evidence of wetland conditions. Positive evidence of upland hydrology might be the observation that a given area saturates only ephemerally following significant rainfall, that the soil is very permeable with no confining layer, or that the land is steep and drains rapidly. Positive evidence of upland conditions should be obtained during the wet season. Based on these facts, this BRE identified areas within the Study Area that had wetland plants, hydric soils, or wetland hydrology indicators (See Section 3.2 for definitions). Soils, hydrology, and vegetation were examined on January 26 and 27 and February 9 and 16, 2016 as well as January 14, 2020 at locations within the Study Area that had the potential to meet the LCP's wetland definition. Sample points were taken in representative areas throughout the Study Area. Once an area was determined to be a potential jurisdictional wetland, its boundaries were delineated using sub-meter accuracy GPS equipment and overlain on a topographic map. Jurisdictional wetland acreage was measured digitally using ArcGIS

software.

Areas determined to potentially support coastal seasonal wetland habitat that met at least one parameter are depicted on the jurisdictional delineation map as coastal seasonal wetlands. The vegetation, hydrology, and soil criteria used during this delineation are summarized below.

3.4.2 Streams

A stream is a natural watercourse as designated by a solid line or dash and three dots symbol shown on the USGS map most recently published, or any well-defined channel with distinguishable bed and bank that shows evidence of having contained flowing water as indicated by scour or deposit of rock, sand, gravel, soil, or debris (CCC 1981). Prior to visiting the site, WRA reviewed the most recent USGS map for the Study Area (USGS 2018).

3.4.3 Open Coastal Waters

Open coastal waters refer to the open ocean overlying the continental shelf and its associated coastline. Salinities exceed 30 parts per thousand with little or no dilution except opposite mouths of estuaries.

Other Sensitive Biological Communities

The Study Area was evaluated for the presence of other sensitive biological communities, including riparian areas, sensitive plant communities recognized by CDFW, significant areas of native plants, and other ESHAs. These sensitive biological communities were mapped and are described in Section 4.1.2 below.

3.5 Special-Status Species

3.5.1 Literature Review

Potential occurrence of special-status species in the Study Area was evaluated by first determining which special-status species occur in the vicinity of the Study Area through a literature and database search. Database searches for known occurrences of special-status species focused on the Half Moon Bay 7.5 minute USGS quadrangle and the two adjacent USGS quadrangles (Montara Mountain and San Gregorio) with similar coastal habitats. The following sources were reviewed to determine which special-status plant and wildlife species have been documented to occur in the vicinity of the Study Area:

- California Natural Diversity Database records (CDFW 2020)
- USFWS Information for Planning and Conservation Report (USFWS 2020b)
- CNPS Electronic Inventory records (CNPS 2020a)
- CDFG publication “California’s Wildlife, Volumes I-III” (Zeiner et al. 1990)
- CDFG publication “Amphibians and Reptile Species of Special Concern in California” (Jennings 1994)
- A Field Guide to Western Reptiles and Amphibians (Stebbins, R.C. 2003)

3.5.2 Site Assessment

The BRE was conducted to determine if existing conditions provide suitable habitat for any special-status plant or wildlife species. The potential for each special-status species to occur in the Study Area was evaluated according to the following criteria:

- No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
- Unlikely. Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.
- Moderate Potential. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.
- High Potential. All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.
- Present. Species is observed on the site or has been recorded (i.e. CNDDDB, other reports) on the site recently.

The site assessment was intended to identify the presence or absence of suitable habitat for each special-status species known to occur in the vicinity in order to determine its potential to occur in the Study Area. The BRE does not constitute a protocol-level survey and was not intended to determine the actual presence or absence of a species; however, if a special-status species was observed during the site visit, its presence was recorded and discussed. In addition, protocol-level special-status plant species surveys were conducted for all species with a moderate or high potential to occur within the Study Area. The protocol-level special-status plant survey took place on April 15 and June 22, 2016, during the blooming period for special-status plants with moderate or high potential to occur in the Study Area, not including the Utility Area. Appendix E presents the evaluation of potential for occurrence of each special-status plant and wildlife species known to occur in the vicinity of the Study Area with their habitat requirements, potential for occurrence, and rationale for the classification based on criteria listed above.

4.0 RESULTS

The following sections present the results and discussion of the BRE and protocol-level special-status plant surveys within the Study Area. A delineation and BRE were conducted on January 26 and 27 and February 9 and 16, 2016 within the Study Area, not including the Utility Area. On January 14, 2020, the proposed location of the stairways area was observed and compared to prior conditions as documented in the 2016 BRE. In addition on January 14, 2020, a BRE was conducted within the Utility Area. Protocol-level special-status plant surveys were conducted on

April 15 and June 22, 2016 within the Project Area and did not include the Utility Area. A list of observed plant and wildlife species is included as Appendix D. A list of special-status plant and wildlife species known to occur in the vicinity and an assessment of their potential to occur within the Study Area is included as Appendix E. Photographs of the Study Area are included as Appendix F.

4.1 Biological Communities

Biological communities identified in the Study Area are depicted in Figure 3. Descriptions for each biological community are contained in the following sections. Acreage summations for biological communities are detailed in Table 1.

In order of prevalence, non-sensitive biological communities in the Study Area include northern coastal scrub, non-native grasslands, disturbed/developed areas, Monterey cypress stands, eucalyptus groves, coyote brush/western rush scrub, and ice plant mats. Six ESHAs are found in the Study Area: non-wetland waters, sea cliffs, central coast riparian scrub, seasonal wetland, beaches, and coastal seasonal wetlands.

Table 1. Biological Community Acreages

Biological Community	Sensitive	Area (acres)
<i>Non-sensitive Biological Communities</i>		
Northern coastal scrub	No	98.44
Non-native grassland	No	15.29
Developed/Disturbed	No	17.55
Monterey cypress stands	No ¹	5.22
Eucalyptus groves	No	5.55
Coyote brush/western rush scrub	No	0.88
Ice plant mats	No	0.17
<i>Sensitive Biological Communities</i>		
Non-wetland waters (ESHA)	Yes	8.67
Sea cliffs (ESHA)	Yes	7.65
Central coast riparian scrub (ESHA)	Yes	4.80
Seasonal wetland (ESHA)	Yes	3.46
Beaches (ESHA)	Yes	2.45
Coastal seasonal wetland (ESHA)	Yes	0.70
STUDY AREA TOTAL		170.83

¹ While listed as G1 S1 (CDFW 2019), this rarity ranking only pertains to native stands, which are limited to Monterey County.

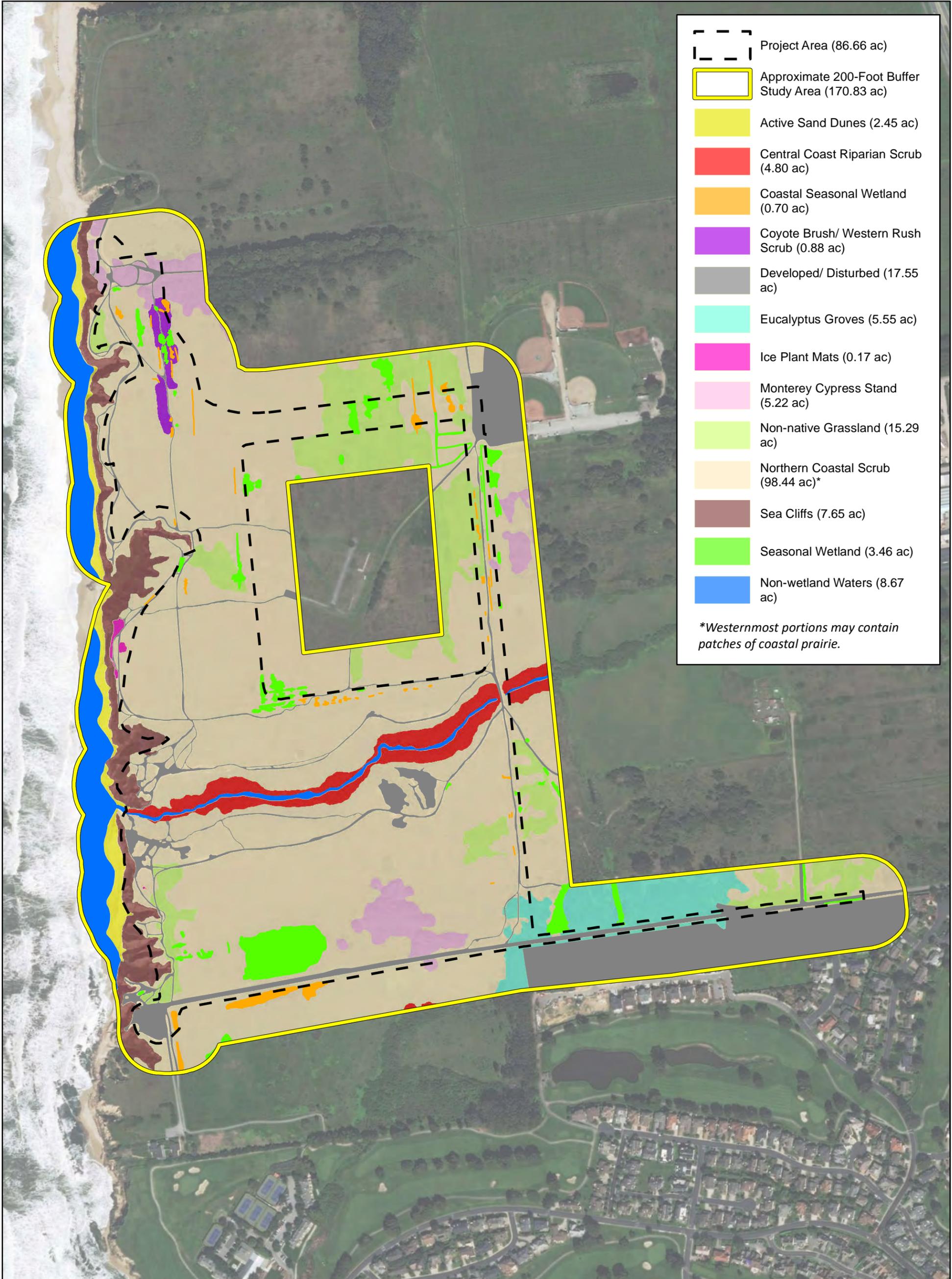
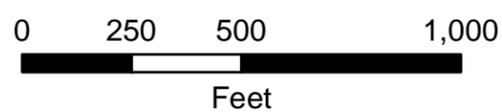


Figure 3. Biological Communities within the Study Area



Wavecrest Coastal Trail: Southern Alignment
Half Moon Bay, California



Map Prepared Date: 5/29/2020
Map Prepared By: mweidenbach
Base Source: Esri Streaming - 2010 CCC Imagery
Data Source(s): WRA

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4.1.1 Non-sensitive Biological Communities

Northern Coastal Scrub

Holland describes northern coyote brush scrub as a cover type of northern (Franciscan) coastal scrub that has low, dense shrubs with scattered grassy openings, usually on windy, exposed sites with shallow, rocky soils. CNPS (2020b) describes coyote brush scrub (*Baccharis pilularis* Shrubland Alliance, Rarity Ranking G5 S5) as containing shrub cover less than 3 meters tall with variable canopy and herbaceous cover. This habitat occurs state-wide in various habitat types within coastal California. Overall, most growth and flowering occur in this community in late spring and early summer (Holland 1986).

The Study Area contains northern coastal scrub habitat. In the northern and western portions of the Study Area, northern coastal scrub is characterized by dense mats of dwarf coyote bush (*Baccharis pilularis* ssp. *pilularis*, UPL) interspersed with California horkelia (*Horkelia californica*, UPL), and soap plant (*Chlorogalum pomeridianum*, UPL). In southern and eastern portions of the Study Area, northern coyote brush scrub is characterized by more open shrub cover and is dominated by coyote brush (*B. pilularis* ssp. *consanguinea*, UPL), California blackberry (*Rubus ursinus*, FAC), beach strawberry (*Fragaria chiloensis*, FACU), and western rush (*Juncus patens*, FACW), with more non-native species interspersed throughout including Bermuda buttercup (*Oxalis pes-caprae*, UPL) and species discussed below for non-native grassland habitat. Choris' popcorn flower (OBL) was confirmed to occur within northern coastal scrub during a protocol-level special-status plant survey on April 15, 2016. Details for the special-status plant survey are provided in Section 4.3.1 below. Additionally, intermixed in the westernmost portion of the northern coastal scrub habitat are pockets of coastal prairie habitat. Species associated with coastal prairie habitat, such as California oatgrass (FAC), meadow barley (FACW), and maritime brome (NL) occur intermixed in northeastern portions of northern coastal scrub habitat within the Study Area. Given that northern coastal scrub is ranked as G5 S5, it is considered secure both globally and state-wide and is therefore not considered sensitive under CEQA.

Non-Native Grassland

The Study Area contains non-native grassland. Holland (1986) describes non-native grassland as a dense to sparse cover of non-native annual grasses with flowering culms 0.2 to 1 meter high and often associated with numerous species of showy-flowered annual forbs. This community often occurs on fine-textured, usually clay soils that are moist or saturated during the winter rainy season and very dry during the summer and fall. Within the Study Area, this community occurs in patches, the largest of which is in the northern portion of the Study Area. Non-native grassland is dominated by non-native grasses, such as rattail fescue (*Festuca myuros* [*Vulpia myuros*], FACU), velvetgrass (*Holcus lanatus*, FAC), and Italian ryegrass (*Festuca perennis* [*Lolium multiflorum*], FAC), and non-native forbs, including bristly ox-tongue (*Helminthotheca echioides* [*Picris echioides*], FACU), wild radish (*Raphanus sativus*, UPL), sheep sorrel (*Rumex acetosella*, FACU), and Bermuda buttercup (UPL).

Developed/Disturbed Areas

The Study Area contains developed and disturbed areas that are primarily composed of an informal trail network, Smith Field Little League Park in the east, and Redondo Beach Road and parking in the south. The informal trail network contains dirt footpaths that are stripped of vegetation due to use and are rutted in some locations. The parking area at the terminus of Redondo Beach Road also provides beach access.

Monterey Cypress Stands

The Study Area contains Monterey cypress stands along the north, south, and eastern perimeter. While Holland (1986) does not describe a habitat for Monterey cypress (*Hesperocyparis macrocarpa*, UPL), CNPS (2020b) describes Monterey cypress stands (*Hesperocyparis macrocarpa* Woodland Special Stands, Rarity Ranking G1 S1) as naturally forming in headlands and sheltered areas along the coast on soils derived from granite. However, these species are noted for their invasive tendencies along the California coast and are planted ornamentally throughout the coast for their ability to provide windbreaks (CNPS 2020b). The understory of the Monterey cypress stands within the Study Area was comprised of bare ground and contained a thick layer of leaf litter with occasional patches of non-native species such as Bermuda buttercup. The rarity ranking of G1 S1 (globally and state-wide critically imperiled) for Monterey cypress stands only pertains to the two natural stands known to occur in Monterey County, California, and this species is otherwise recognized by the California Invasive Plant Council (Cal-IPC 2020) for its ability to invade wildlands outside of its native range. Therefore, given the location of the Study Area, Monterey cypress stands are not considered sensitive under CEQA.

Eucalyptus Groves

The Study Area contains eucalyptus groves. Tree cover dominated by blue gum (*Eucalyptus globulus*, UPL) is not described by Holland (1986). However, CNPS (2020b) describes Eucalyptus groves – tree of heaven – black locust groves (*Eucalyptus* spp. – *Ailanthus altissima* – *Robinia pseudoacacia* Woodland Semi-Natural Alliance) as planted groves used for windbreaks and naturalized along stream courses and in uplands. Eucalyptus groves occurred in the southeast portion of the Study Area, along Redondo Beach Road, and contained an understory primarily composed of leaf litter. Blue gum is rated by Cal-IPC as “Moderate” for its ability to invade wildlands and this biological community therefore has no rarity ranking and is not considered sensitive under CEQA.

Coyote Brush/Western Rush Scrub

The Study Area contains coyote brush/western rush scrub, which occurs within the northern portion of Study Area. This community was dominated by coyote brush and western rush. Popcorn flower was observed scattered throughout this community and was associated with shaded micro-depressions under coyote brush and senesced western rush.

While this biological community is not discussed by Holland (1986), western rush marshes (*Juncus patens* Provisional Herbaceous Alliance, Rarity Ranking G4 S4) are described by CNPS (2020b) as appearing on drier sites than those of other forb alliances including soft rush (*Juncus effusus*, FACW), small-fruited bulrush (*Scirpus microcarpus*, OBL), and slough sedge (*Carex obnupta*, OBL). Additionally, some stands appear seral to those dominated by coyote brush (CNPS 2020b).

This biological community is rated as apparently secure, both globally and state-wide. Western rush is a facultative wetland plant that receives sufficient moisture from persistent coastal fog conditions. The species' codominance within this community is not indicative of wetland conditions and it is therefore not considered sensitive under CEQA.

Ice Plant Mats

Ice plant mats (*Mesembryanthemum* spp. – *Carpobrotus* spp. Herbaceous Semi-Natural Alliance) are described by CNPS (2020b) as occurring on bluffs, disturbed land, sand dunes along the coastline, and on coastal and alkaline terraces. Holland does not describe this community type. In the Study Area, ice plant (*Carpobrotus edulis*, UPL) mats were scattered along the western portion of the coastal field and occurred on the sea cliffs. Ice plant mats have no rarity ranking and ice plant is rated by Cal-IPC as "High" for its ability to invade wildlands. Therefore, this semi-natural herbaceous stand is not considered sensitive under CEQA.

4.1.2 *Environmentally Sensitive Habitat Areas (ESHAs)*

Non-Wetland Waters (ESHA)

Within the Study Area, non-wetland waters occur as an unnamed intermittent to perennial drainage (Ravine 9) located centrally, draining from east to west; and as tidal waters associated with the Pacific Ocean. Both types of non-wetland waters are regulated by the Corps, RWQCB, and the CCC. Additionally, streams are regulated by the CDFW. Therefore, non-wetland waters associated with the intermittent to perennial drainage in Ravine 9 and the Pacific Ocean are considered sensitive under CEQA. These habitats are discussed in more detail in Section 4.2 below.

Sea Cliffs (ESHA)

Within the Study Area, sea cliff occurs along the western boundary. As defined by the CCC, a sea cliff is a cliff whose toe is or may be subject to marine erosion. In addition, a sea cliff is a scarp or steep face of rock, weathered rock, sediment, or soil resulting from erosion, faulting, folding, or excavation of the land mass. The cliff or bluff may be simple planar or curved surface or it may be step-like in section. Sea cliffs occur within the Study Area along the entirety of the western boundary.

Central Coast Riparian Scrub (ESHA)

Holland (1986) describes central coast riparian scrub as a scrubby streamside thicket varying from open to impenetrable and dominated by willow (*Salix* sp.) with characteristic species including coyote brush. CNPS (2020b) treats this alliance as arroyo willow thickets (*Salix lasiolepis* Shrubland Alliance, Rarity Ranking G4 S4). This community occurs on sand and gravel bars close to groundwater.

In the Study Area, central coast riparian scrub occurs within an intermittent to perennial drainage in Ravine 9 that drains to the Pacific Ocean. Central coast riparian scrub was dominated by arroyo willow (*S. lasiolepis*, FACW) with coyote brush encroaching along the edges and filling in gaps of arroyo willow. A sample point (SP 7) was taken within the edge of riparian habitat along the western side of the Study Area to document the conditions of the riparian floodplain. Central coast

riparian scrub, as the arroyo willow thickets alliance, is rated as apparently secure globally and state-wide; however, because this habitat occurs as a riparian community, it is regulated by the CDFW and RWQCB and is therefore considered sensitive under CEQA. Additionally, riparian communities are regulated under the City LCP and are therefore considered an ESHA.

Seasonal Wetland (ESHA)

Seasonal wetland is not described by CNPS (2020b) as a distinct series because it is not characterized by a single dominant plant species or a typical group of plant species. Seasonal wetlands in the Study Area included seasonally wetted depressions and swales formed from past human disturbance. Some seasonal wetland swales appear to be remnant irrigation ditches from historic agricultural practices within the Study Area from the 1940s (NETR 2020). Additionally, several areas of seasonal wetland marshes did not contain obvious concave topographical relief but were comprised of plant hummocks and undulating microtopography.

Within the Study Area, seasonal wetlands occur in association with northern coastal scrub and non-native grassland communities (CNPS 2020b). Seasonal wetlands are a type of wetland that exhibit seasonal saturation and/or inundation sufficient to meet the three-parameter definition of a wetland discussed in Section 3.2.1. Seasonal wetlands within the Study Area contained wetland hydrology including the presence of surface water in many cases. While hydric soils were not observed within many seasonal wetland features, seasonally ponded soils in depressions with shallow restrictive layers and saline conditions are known to be naturally problematic. Seasonal wetland areas are typically dominated by pennyroyal (*Mentha pulegium*, OBL), spike rush (*Eleocharis macrostachya*, OBL), popcorn flower (OBL), curly dock (*Rumex crispus*, FAC), brown headed rush (*Juncus phaeocephalus*, FACW), and rabbitsfoot grass (*Polypogon monspeliensis*, FACW), with sparse amounts of tall cyperus (*Cyperus eragrostis*, FACW). Seasonal wetlands are discussed in more detail in Section 4.2 below.

Beaches (ESHA)

The Study Area includes beaches. Beaches consist of barren, mobile sand accumulations whose size and shape are determined by abiotic factors such as wind, rather than by stabilizing vegetation. CNPS (2020b) does not describe this community. The closest Holland association to beaches is active coastal dunes, which occur along the Pacific Coast where sandy beaches are present and coastal headlands are absent. The CCC and LCP regulate beaches and this community is therefore considered sensitive under CEQA.

Coastal Seasonal Wetland (ESHA)

Coastal seasonal wetlands include seasonal wetland depressions, swales, and meadows, which met one or two of the criteria outlined in the Corps Delineation manual but not all three; these areas are considered coastal wetlands as they meet the definition of a wetland pursuant to the CCC/LCP. Within the Study Area, coastal seasonal wetlands were observed. Coastal seasonal wetlands are discussed in more detail in Section 4.2 below.

4.2 Aquatic Resource Delineation

A delineation of potentially jurisdictional aquatic resources within the Study Area, not including the Utility Area, was conducted on January 26 and 27 and February 9 and 16, 2016. A delineation of

the Utility Area was conducted on January 14, 2020. Potentially jurisdictional aquatic resources observed within the Study Area are shown in Appendix A, and acreages are summarized in Table 2 below. Corps delineation data sheets are included as Appendix B. CCC/LCP delineation data sheets are included as Appendix C.

4.2.1 Upland Areas

Upland areas were typically dominated by non-native ruderal vegetation including sheep sorrel (FACU), Italian ryegrass (FAC), velvetgrass (FAC), bristly ox-tongue (FACU), and wild geranium (*Geranium dissectum*, UPL). In areas of northern coastal scrub habitat, upland areas were typically dominated by a mix of the aforementioned non-native species and native species characteristic of this habitat type including coyote brush (UPL), soap plant (UPL), California horkelia (UPL), and western rush (FACW).

Soils within upland areas were comprised of dark (10YR 2-3/2, 7.5YR 3/2) silt or clay loams. Some sample points contained a clay layer at 9 inches (SP 17), 10 inches (SP 15, SP 27), or 11 inches (SP 6, SP 11). No upland sample point locations met any hydric soil indicators.

Some upland areas examined during January 26 and 27, 2016 (SP 2, SP4, SP 13, SP 17) exhibited wetland hydrology indicators including high water table of depths ranging from 4-10 inches below ground surface. However, this was reflective of approximately 2.73 inches of rain within the eight days preceding the site visit and is not indicative of wetland hydrology conditions.

4.2.2 Wetlands

All of the areas mapped as potential Section 404 jurisdictional wetlands are also considered potentially jurisdictional by the RWQCB and CCC (Appendix A). However, some mapped wetlands did not meet all three of the criteria outlined in the Corps Manual but were considered CCC/LCP wetlands if they met one or two of the Corps criteria.

4.2.2.1 Seasonal Wetlands

Seasonal Wetland Depressions

Seasonal wetland depressions occurred throughout the Study Area, typically adjacent to developed trails. Seasonal wetland depressions were observed with standing water January 26 and 27 of 2016 and in some instances on January 14, 2020. Though at the beginning of the growing season, these features met the vegetative percent cover and hydrophytic vegetation wetland indicator requirements to be considered potentially jurisdictional wetland features.

Seasonal Wetland Depressions 1, 2, 6, 8, 12, 17, 30, 48, 53, and 58

Seasonal wetland depressions characterized by sample point 1 (SP 1) included seasonal wetland 1 (SW 1), SW 2, SW 6, SW 8, SW 12, SW 17, SW 30, SW 48, SW 53, and SW 58. At the time of the January 26, 2016 site visit, seasonal wetland depressions characterized by SP 1 were dominated by tall cyperus (FACW), and Italian rye grass (FAC), with curly dock (FAC), with new growth of pennyroyal (OBL) represented in lesser amounts. All seasonal wetland depressions

were dominated by facultative wetland plant species and met the dominance test indicator for hydrophytic vegetation.

Soils within SP 1 were a dark (7.5YR 2.5/1) silty loam to clay loam to approximately 8 inches and were underlain by a restrictive clay layer that contained redoximorphic features including concentrations and depletions in the matrix. During the January site visits, soil profiles were typically saturated for seasonal wetland depressions due to presence of surface water. While the sample point did not meet any primary or secondary hydric soil indicators at the time of the site visit, the sample points were taken from naturally problematic seasonally ponded soils in a ponded depression with a restrictive clay layer and lack said indicators due to limited saturation depth and saline conditions. All seasonal wetland depressions were observed with standing surface water up to depths of 16 inches during January 2016 site visits.

Table 2. Potentially Jurisdictional Features within the Study Area

POTENTIALLY JURISDICTIONAL AREA			HABITAT SIZE (acres/linear feet)
Corps (Section 404)	Seasonal Wetlands	On-site	1.73
		Off-site	1.73
	Non-wetland Waters (to OHWM ⁶)	On-site	0.35/1,362
		Off-site	0.34/871
Corps (Section 404/10)	Tidal Waters (to HTL ⁷)	On-site	7.98
CORPS TOTAL			12.13/2,233
RWQCB (Section 401)	Seasonal Wetlands	On-site	1.73
		Off-site	1.73
RWQCB (Section 401)	Non-wetland Waters (to TOB ⁸)	On-site	1.89/1,362
		Off-site	2.80/871
RWQCB (Section 401)	Riparian	On-site/Off-site	4.80
RWQCB (Section 401)	Tidal Waters (to HTL ⁹)	On-site	7.98
RWQCB TOTAL			20.90/2,233
CDFW (Section 1600)	Streams (to TOB ¹⁰)	On-site	1.89/1,362
		Off-site	2.80/871
CDFW (Section 1600)	Riparian	On-site/Off-site	4.80
CDFW TOTAL			9.37/2,233
CCC/LCP-Only ¹¹	Coastal Seasonal Wetlands	On-site	0.24
		Off-site	0.45
CCC/LCP-ONLY TOTAL			0.69

Seasonal Wetland Depressions 38, 97, 98, 99, 100, and 101

Seasonal wetland depressions that were representative of SP 5 included SW 38, SW 97, SW 98, SW 99, SW 100, and SW 101. Seasonal wetland depressions characterized by SP 5 were dominated by spike rush (OBL), brown headed rush (FACW), with apparent curly dock (FAC), tall cyperus (FACW), and new growth of pennyroyal (OBL). All seasonal wetland depressions were dominated by facultative wetland plant species and met the dominance test indicator for hydrophytic vegetation.

Soils within SP 5 were a dark (7.5YR 2.5/1) silty loam to clay loam to approximately 8 inches and were underlain by a restrictive clay layer that contained redoximorphic features including concentrations and depletions in the matrix. During the January site visits, soil profiles were typically saturated for seasonal wetland depressions due to presence of surface water. While the sample point did not meet any primary or secondary hydric soil indicators at the time of the site visit, the sample points were taken from naturally problematic seasonally ponded soils in a ponded depression with a restrictive clay layer and lack said indicators due to limited saturation depth and saline conditions. As previously stated, all seasonal wetland depressions were observed with standing surface water up to depths of 16 inches during January 2016 site visits. Additionally, seasonal wetland depressions associated with SP 5 contained biotic crust in the form of algal growth.

Seasonal Wetland Depressions 86, 87, 89, 90, 91, 92, 93, and 108

Seasonal wetland depressions characterized by SP 10 include SW 86, SW 87, SW 89, SW 90, SW 91, SW 92, SW 93, and SW 108. Seasonal wetland depressions represented by SP 10 were primarily dominated by pennyroyal (OBL) with other species present including brown headed rush (FACW), velvetgrass (FAC), and curly dock (FAC). All seasonal wetland depressions were dominated by facultative wetland plant species and met the dominance test indicator for hydrophytic vegetation.

Soils at SP 10 remained a dark (7.5YR 3/1) clay loam until 12 inches, underlain by a restrictive clay layer with redoximorphic features such as concentrations (5YR 6/8) in the matrix up to 15 percent. During the January site visits, soil profiles were typically saturated for seasonal wetland depressions due to presence of surface water. While the sample point did not meet any primary or secondary hydric soil indicators at the time of the site visit, the sample points were taken from naturally problematic seasonally ponded soils in a ponded depression with a restrictive clay layer

⁶ Ordinary High Water Mark

⁷ High Tide Line

⁸ Top of Bank

⁹ High Tide Line

¹⁰ Top of Bank

¹¹ CCC/LCP will also have jurisdiction over Corps/RWQCB and CDFW Jurisdictional Areas listed above.

and lack said indicators due to limited saturation depth and saline conditions. All seasonal wetland depressions were observed with standing surface water up to depths of 16 inches during January 2016 site visits. Additionally, seasonal wetland depressions associated with SP 10 contained biotic crust in the form of algal growth.

Seasonal Wetland Depressions 63, 65, 66, 67, 68, 69, and 80

Seasonal wetland depressions characterized by SP 14 included SW 63, SW 65, SW 66, SW 67, SW 68, SW 69, and SW 80. Seasonal wetland depressions were observed with standing water January 26 and 27 of 2016 and while at the beginning of the growing season, these features met the vegetative percent cover and hydrophytic indicator requirements to be potentially considered wetland features. Sample point 14 was dominated by brown headed rush (FACW) and curly dock (FAC) with apparent new growth of pennyroyal (OBL) and small amounts of velvetgrass (FAC), sheep sorrel (FACU), and bristly ox-tongue (FACU) within the feature perimeter. All seasonal wetland depressions were dominated by facultative wetland plant species and met the dominance test indicator for hydrophytic vegetation.

Sample point 14 contained a dark (10YR 2/1) silt loam that was difficult to accurately observe below 8 inches due to saturated soils and soil fall back. During the January site visits, soil profiles were typically saturated for seasonal wetland depressions due to presence of surface water. While the sample point did not meet any primary or secondary hydric soil indicators at the time of the site visit, the sample points were taken from naturally problematic seasonally ponded soils in a ponded depression with a restrictive clay layer and lack said indicators due to limited saturation depth and saline conditions. As previously stated, all seasonal wetland depressions were observed with standing surface water up to depths of 16 inches during January 2016 site visits.

Seasonal Wetland Depressions 4, 9, and 102

Sample point 24 was representative of seasonal wetland features in low-lying broadly depressional settings for SW 4, SW 9, and SP 102. Shallower seasonal wetland features associated with SP 24 did not have standing water during February 2016 site visits. Seasonal wetlands characterized by SP 24 were dominated by Monterey sedge (*Carex harfordii*, OBL), pennyroyal (OBL), and western rush (FACW) and also had characteristic species including popcorn flower (OBL), velvetgrass (FAC), and rabbitsfoot grass (FACW). All seasonal wetland depressions were dominated by facultative wetland plant species and met the dominance test indicator for hydrophytic vegetation.

Sample point 24 contained brown (7.5YR 4/2) clay loam that was underlain by brown clay at 10 inches. Sample point 24, which was taken February 16, 2016, was moist. While the sample point did not meet any primary or secondary hydric soil indicators at the time of the site visit, the sample points were taken from naturally problematic seasonally ponded soils in a ponded depression with a restrictive clay layer and lack said indicators due to limited saturation depth and saline conditions. Seasonal wetland depressions associated with SP 24 contained biotic crust in the form of algal growth.

Seasonal Wetland Depressions 114 and 115

Sample point 30 was representative of seasonal wetland features located within shallow, linear, man-made ditches adjacent to roads within the Utility Area. SW 114 was adjacent to the east side

of Occidental Avenue, and SW 115 was adjacent to the south side of Redondo Beach Road, east of Occidental Avenue. Standing water was observed by in SW 114 and SW 115 during the January 2020 site visit. Seasonal wetlands characterized by SP 30 were dominated by pennyroyal (OBL), tall cyperus (FACW), rabbitsfoot grass (FACW), and California blackberry (FAC).

A representative soil pit could not be excavated at sample point 24 due to unstable, saturated soils and surface water. Hydric soils were assumed based on the dominance of perennial hydrophytes and ponded water up to approximately 10 inches deep within a closed depression. Sample point 24 met the surface water and saturation primary wetland hydrology indicators and the FAC-neutral test secondary hydrology indicator.

Seasonal Wetland Marsh

Seasonal wetland marshes characterized by a predominance of rush (*Juncus* spp.) hummocks occur within northern, eastern, and southern portions of the Study Area.

Seasonal Wetland Marshes 103 and 104

Sample point 12 characterizes seasonal wetland marshes for SW 103 and SW 104. Seasonal wetland marshes characterized by SP 12 were dominated by brown headed rush (FACW), western rush (FACW), and velvetgrass (FAC), with areas of greater inundation containing pennyroyal (OBL) and spike rush (OBL). Soils for SP 12 exhibited a histic epipedon and were a dark (7.5YR 2.5/1) silty clay loam that was saturated and mucky. Wetland hydrology for SP 12 included surface water up to 4 inches deep, inundation and saturation visible on aerial imagery (Google Earth 2016: May 2011, March 2015), biotic crust from algal matting, and this location met the secondary indicator for the FAC-Neutral test.

Seasonal Wetland Marshes 34, 35, 36, 41, 111, 112, and 113

Sample Point 16 is representative of SW 34, SW 35, SW 36, and SW 41. Seasonal wetland marshes characterized by SP 16 were dominated by brown headed rush (FACW), western rush (FACW), and velvetgrass (FAC), with areas of greater inundation containing pennyroyal (OBL) and spike rush (OBL). Additionally, curly dock (FAC) was more prevalent in seasonal wetland marshes characterized by SP 16.

Soils for SP 16 were very dark grayish brown (10YR 3/2) silt to 4 inches, underlain by a dark brown (7.5YR 3/2) clay loam to 8 inches. This soil was underlain to 14 inches by a restrictive clay layer that contained 6 percent redox within the matrix. While SP 16 does not meet any hydric soil indicators, the feature occurs in a low-lying area that is seasonally ponded and contains a restrictive clay layer. Seasonal wetlands associated with SP 16 therefore contain naturally problematic seasonally ponded soils that lack hydric soil indicators due to limited saturation depth and saline conditions. Sample point 16 was observed with surface water up to 6 inches deep and also met the secondary indicator for the FAC-Neutral test.

Seasonal Wetland Marshes 19, 20, 21, 22, 46, 47, 61, 62, and 64

Sample Point 22 is representative of SW 19, SW 20, SW 21, SW 22, SW 46, SW 47, SW 61, SW 62, and SW 64. Similarly, seasonal wetlands characterized by SP 22 were dominated by brown headed rush (FACW), patches of Monterey sedge (OBL), and velvetgrass (FAC), with curly dock (FAC), and bristly ox-tongue (FACU) around the wetland fringe.

Soils displaying a depleted matrix were observed at SP 22 and were a brown (7.5YR 4/2) clay with concentrations observed along pore linings and in the matrix at 15 percent underlain at 6 inches with dark gray (7.5YR 4/1) clay soils with 5 percent concentrations along pore linings and within the matrix.

Indicators of wetland hydrology at SP 22 included a high water table at 6 inches below ground surface, biotic crust in the form of algal matting, oxidized rhizospheres along living roots, and met the secondary indicator for the FAC-Neutral test.

Seasonal Wetland Swales

Seasonal Wetland Swales 25, 43, 44, and 45

Seasonal wetland swales were observed along the eastern portion of the Study Area. Seasonal wetland swales, SW 25, SW 43, SW 44, and SW 45 were characterized by SP 8. Seasonal wetland swales typically appeared to have formed from historic tire tracks. During the January 27, 2016 site visit, SP 8 was inundated with 4 inches of water and vegetation was at the beginning of its growth cycle. The swale was observed to be dominated by brown headed rush (FACW), curly dock (FAC), and had new growth of pennyroyal at low percent cover.

Soils were a very dark brown (10YR 2/2) clay loam that was underlain at 12 inches by a dark grayish brown (2.5Y 4/2) clay loam with 15 percent redoximorphic concentrations in the matrix. This soil profile was saturated due to presence of surface water. While this sample point did not meet any primary or secondary hydric soil indicators at the time of the site visit, the sample point was taken from naturally problematic seasonally ponded soils in a ponded depression with a restrictive clay layer and lacks said indicators due to limited saturation depth and saline conditions.

All seasonal wetland swales characterized by SP 8 were observed with standing water during the January and February site visits. Hydrology observed at SP 8 included surface water present up to 4 inches deep, biotic crust in the form of algal matting, and the secondary indicator was met for the FAC-Neutral test.

4.2.2.2 Coastal Seasonal Wetlands

Coastal Seasonal Wetland Depressions

Coastal Seasonal Wetland Depressions 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 81, 82, 83, 84, and 85

Shallow coastal seasonal wetland depressions were identified adjacent to the informal trail network throughout the Study Area. Sample point 28 represents coastal seasonal wetland depressions including SW 70, SW 71, SW 72, SW 73, SW 74, SW 75, SW 76, SW 77, SW 78, SW 79, SW 81,

SW 82, SW 83, SW 84, and SW 85.

Sample point 28 was dominated by Italian ryegrass (FAC), popcorn flower (OBL), and rabbitsfoot grass (FACW). Other plants typically observed in coastal seasonal wetland depressions included curly dock (FAC), tall cyperus (FACW), and velvetgrass (FAC). This coastal seasonal wetland depression was dominated by facultative wetland plants and meets the dominance test for hydrophytic vegetation. Soils within the coastal seasonal wetland depression for SP 28 and were a dark (7.5YR 2.5/1) clay loam to 14 inches, with trace fine sand and did not meet any indicators for hydric soils. Wetland hydrology observed within SP 28 included biotic crust in the form of algal matting and the secondary indicator was met for the FAC-Neutral Test.

Features determined to be coastal seasonal wetland depressions were observed with surface water during the January 26, 2016 site visit and were observed to be dry 14 days later during the February 9, 2016 site visit. Given that 2.73 inches of rainfall occurred within the eight days prior to the January 26 and 27, 2016 site visits, the presence of surface water in January was likely due to recent precipitation and was not indicative of conditions of wetland hydrology. However, because these features meet one or two wetland parameters including the presence of hydrophytic vegetation and wetland hydrology such as biotic crust, they were determined to function as coastal seasonal wetlands.

Coastal Seasonal Wetland Swales

Coastal seasonal wetland swales occurred within portions of the Study Area that have prior human disturbance, typically from previous vehicular use. Coastal seasonal wetland swales met one or two wetland parameters and occurred in a topographic position within the Study Area to function as coastal wetlands.

Coastal Seasonal Wetland Swales 18, 23, and 33

Sample point 3 is representative of SW 18, SW 23, and SW 33. Vegetation present within SP 3 did not meet any indicators for hydrophytic vegetation and was dominated by rabbitsfoot grass (FACW), sheep sorrel (FACU), curly dock (FAC), and bristly ox-tongue (FACU) with sparing vegetative cover of velvetgrass (FAC), Italian ryegrass (FAC), Italian thistle (*Carduus pycnocephalus* ssp. *pycnocephalus*, UPL), wild geranium (UPL), pennyroyal (OBL), and spring vetch (*Vicia sativa*, UPL). Soils for SP 3 contained a depleted dark surface and met hydric soil conditions with a dark (7.5YR 2.5/1) silt clay layer to 4 inches, underlain by a dark (2.5Y 2.5/1) clay layer that contained 35 percent depletions and 5 percent concentrations in the matrix. Observed wetland hydrology included for SP 3 included surface water 2 inches in depth and biotic crust in the form of algal matting

Coastal Seasonal Wetland Swale 23

Sample point 18 is representative of SW 23. Vegetation present within SP 18 did not meet any indicators for hydrophytic vegetation and was dominated by rabbitsfoot grass (FACW), sheep sorrel (FACU), curly dock (FAC), and bristly ox-tongue (FACU) with sparing vegetative cover of velvetgrass (FAC), Italian ryegrass (FAC), Italian thistle (UPL), wild geranium (UPL), pennyroyal (OBL), and spring vetch (UPL). Hydric soil indicators were not met for SP 18, which contained a dark silty loam to 14 inches. Wetland hydrology observed SP 18 included a water table present at 3 inches below ground surface and biotic crust in the form of algal matting.

Coastal Seasonal Wetland Swales 49, 50, 51, 52, 54, 55, 56, 57, 60, 88, 94, 95, 96, 105, 106, 107, 108, 109, 110

Sample Point 26 characterizes conditions at SW 49, SW 50, SW 51, SW 52, SW 54, SW 55, SW 56, SW 57, SW 60, SW 88, SW 94, SW 95, SW 96, SW 105, SW 106, SW 107, SW 108, SW 109, and SW 110. Sample point 26 was dominated by hydrophytic vegetation including Italian ryegrass (FAC), Monterey sedge (OBL), and brown headed rush (FACW) with more sparse vegetative cover including bristly ox-tongue (FACU), wild geranium (UPL), sheep sorrel (FACU), curly dock (FAC), and scarlet pimpernel (*Lysimachia arvensis*, FAC). Hydric soil indicators were not met for SP 26, which contained a dark brown clay loam that was underlain by a dark brown clay starting at 10 inches. No indicators of wetland hydrology were observed for SP 26.

Coastal Seasonal Wetland Meadows

Coastal seasonal wetland meadows within the Study Area occurred in the northern coastal scrub, coyote brush/western rush scrub, and in non-native grassland habitats and met at least one wetland parameter.

Coastal Seasonal Wetland Meadows 26, 27, and 28

Sample point 21 represents characteristic conditions of SW 26, SW 27, and SW 28. Coastal seasonal wetland meadows characterized by SP 21 were dominated by Monterey sedge (OBL) and bristly ox-tongue (FACU), with vegetative cover by other species including wild geranium (UPL), velvetgrass (FAC), and curly dock (FAC). While SP 21 did not meet hydrophytic vegetation wetland indicators, Monterey sedge dominated central areas of the associated coastal seasonal wetland features.

No hydric soils indicators were observed for SP 21 and soils were a dark brown (7.5YR 3/2) clay loam and were underlain by dark brown clay at 10 inches. Wetland hydrology was observed for SP 21, including a high water table at 10 inches below ground surface, and the secondary indicator was met for FAC-Neutral test.

Coastal Seasonal Wetland Meadows 3, 5, 7, 10, 13, 14, 15, 16, 29, 31, 32, 37, 39, and 40

Sample point 25 represents SW 3, SW 5, SW 7, SW 10, SW 13, SW 14, SW 15, SW 16, SW 29, SW 31, SW 32, SW 37, SW 39, and SW 40. Vegetation at SP 25 was characterized by facultative wetland vegetation including popcorn flower (OBL), western rush (FACW), and rabbitsfoot grass (FACW), with sparse amounts of pennyroyal (OBL). Coastal seasonal wetlands characterized by SP 25 were typically dominated by popcorn flower (OBL) with other codominant species shifting between the other species noted.

No hydric soils indicators were observed for SP 25 and soils were a brown (7.5YR 4/2) clay loam transitioning to a brown clay at 10 inches. No indicators of wetland hydrology were observed for SP 25.

4.2.3 Non-Wetland Waters

Two potential Section 404 jurisdictional non-wetland waters occur within the Study Area: an intermittent to perennial stream feature in Ravine 9 and tidal waters associated with the Pacific Ocean.

Intermittent to Perennial Stream

The intermittent to perennial stream is associated with a ravine or gully area that runs from east to west and likely forms upstream from overland sheetflow. Approximately 2,233 linear feet (0.69 acre) of non-wetland waters potentially jurisdictional by the Corps was mapped during the January 26, 2016, site visit by mapping points for OHWM and correlating this to topographical survey data for the Study Area. Signs of OHWM observed included vegetation bent in the direction of flow, drift deposits, a break in grade, and water staining.

Approximately 2,233 linear feet (4.69 acres) of intermittent to perennial stream potentially jurisdictional by the RWQCB, CDFW, and CCC was mapped during the January 26, 2016, site visit based on the top of bank (TOB) of the ravine. TOB was determined using topographic survey data to differentiate a clear break in grade.

Non-wetland Tidal Waters

A total of 7.98 acres of non-wetland tidal waters associated with the Pacific Ocean were mapped during the January 27, 2016, site visit based on a visual determination of the high tide line (HTL) and correlating it to topographical survey data of the Study Area. Signs of HTL included a clear deposit of fine shell or debris, a slight break in grade, and apparent water staining from recent high tides. Non-wetland tidal waters are potentially jurisdictional by the Corps, RWQCB, and CCC.

4.2.4 Soils

Mapped soil mapping in the Study Area are depicted in Figure 4. The Study Area has relatively level macro-topography with an overall gentle slope to the west and northwest. The site exhibits human disturbance to soils through compaction where informal trails exist and tire ruts exist throughout the northern coastal scrub and non-native grassland habitat in the central and eastern portions of the Study Area.

Based on the Soil Survey of San Mateo County, Western Part (NRCS 2016), the Study Area is underlain primarily by seven soil mapping units: Colma sandy loam, moderately steep, Watsonville sandy loam, gently sloping; Watsonville sandy loam, gently sloping, eroded; Watsonville sandy loam, sloping; Watsonville loam, nearly level; terrace escarpments; gullied land, and beaches.

Watsonville Units.

The Watsonville map unit consists of deep, somewhat poorly drained soils derived from sedimentary alluvium. The Watsonville series is located on old coastal terraces and valleys with slopes ranging from 0 to 50 percent. A typical profile includes eight soil horizons: Ap, E, Bt1, Bt2, Bt3, C1, C2 and C3.

The Ap horizon is a very dark greyish brown (10YR 3/2), slightly acidic (pH 6.5) loam from 0-12 inches. Beneath this is an E horizon from 12-18 inches containing a slightly acidic (pH 6.5), light gray (10YR 7/2) sandy loam. This is underlain by three Bt horizons; the first Bt horizon (Bt1) is a slightly acidic (pH 6.4), pale brown (10YR6/3) and dark grayish brown (10YR 4/2) clay from 18-26 inches. The second Bt horizon, from 26-33 inches and contains a slightly acidic (pH 6.3), light gray (10YR 7/2) and very pale brown (10YR 7/3) clay. The third Bt horizon is from 33-39 inches and contains a slightly acidic (pH 6.3), light gray (10YR 7/2) and very pale brown (10YR 7/3) clay. The Bt horizons are underlain by three C horizons; the first is from 39-45 inches and contains a slightly acidic (pH 6.2), light gray (10YR 7/2) and very pale brown (10YR 7/3) sandy clay loam. This is underlain by the second C horizon from 45-57 inches, containing a moderately acidic (pH 6.0), variegated light gray (10YR 7/2), very pale brown (10YR 7/3) and yellow (10YR 7/6) sandy clay loam.

The third C horizon, from 57-63 inches, contains moderately acidic (pH 6.0), variegated light gray (10YR 7/2), very pale brown (10YR 7/3), and yellow (10YR 7/6) sandy clay loam.

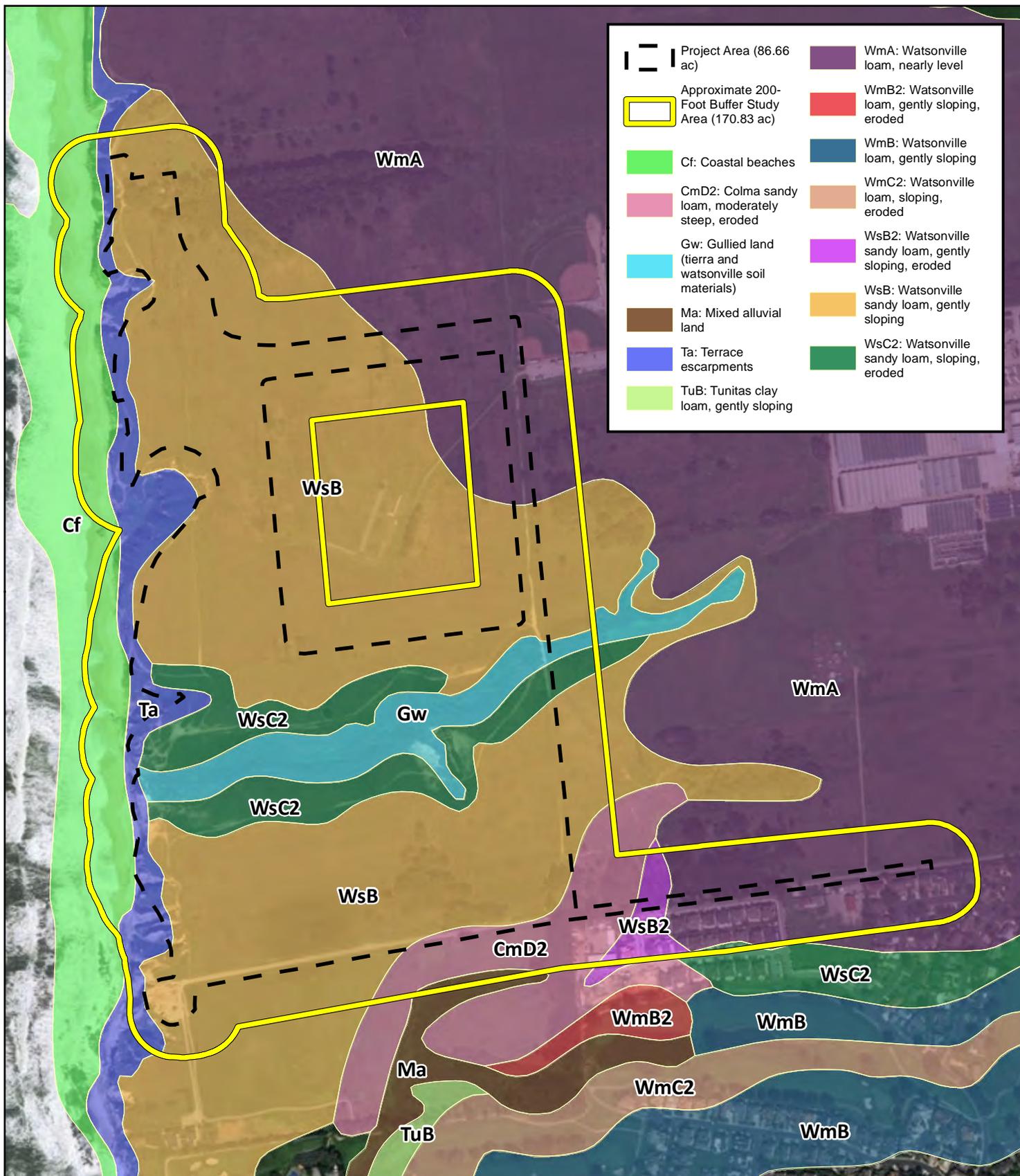


Figure 4. Soil Types in the Study Area



Wavecrest Coastal Trail: Southern Alignment
Half Moon Bay, California

0 250 500
Feet

Map Prepared Date: 1/28/2020
Map Prepared By: mweidenbach
Base Source: Esri World Imagery January 2020
Data Source(s): WRA, SSURGO Soils

Watsonville sandy loam, gently sloping

The gently sloping Watsonville sandy loam map unit is a hydric consociation of the Watsonville soil series described above. The Watsonville soil series is the major component comprising 85 percent of the map unit while Elkhorn (10 percent), Tierra (4 percent), and an unnamed series (1 percent) make up the rest. The unnamed soil series is located within depressions within this map unit.

Watsonville sandy loam, gently sloping, eroded

The gently sloping, eroded Watsonville sandy loam map unit is a hydric consociation of the Watsonville soil series described above. The Watsonville soil series is the major component comprising 85 percent of the map unit while Elkhorn (5 percent), Tierra (5 percent), and Baywood (5 percent) make up the rest.

Watsonville sandy loam, sloping

The sloping Watsonville sandy loam map unit is a hydric consociation of the Watsonville soil series described above. The Watsonville soil series is the majority component comprising 85 percent of the map unit while Elkhorn (10 percent), Tierra (4 percent), and an unnamed series (1 percent) make up the rest. The unnamed soil series is located in swales within this map unit.

Watsonville loam, nearly level

The nearly level Watsonville sandy loam map unit is a hydric consociation of the Watsonville soil series described above. The Watsonville soil series is the majority component comprising 85 percent of the map unit with Elkhorn (5 percent), Tierra (5 percent), and an unnamed series (5 percent) make up the rest. The unnamed soil series is located in depressions within this map unit.

Colma Sandy Loam

The Colma map unit consists of deep, well drained soils that formed in material weathering from softly consolidated or weakly consolidated marine sediments. Colma series soils are located on foothills and have slopes ranging from 9 percent to 75 percent. A typical profile includes 6 soil horizons: A11, A12, A3, B21t, B22t and C. The first A horizon is from 0-4 inches, containing a slightly acidic (pH 6.5), very dark gray (10YR 3/1) loam. The second A horizon is from 4-10 inches and contains a slightly acidic (pH 6.2), very dark gray (10YR 3/1) loam. Beneath this is the third A horizon from 10-17 inches containing slightly acidic (pH 6.2), very dark gray (10YR 3/1) loam. This is underlain by 2 Bt horizons, the first being from 17-28 inches and containing a moderately acidic (pH 6.0), light yellowish brown (10YR 6/4) loam. The second Bt horizon is from 28-39 inches and contains a moderately acidic (pH 5.8), brown (10YR 5/3), heavy loam. The final horizon in the soil profile is a C horizon from 39-60 inches and contains a moderately acidic (pH 5.9), light yellowish brown (10YR 6/4), fine sandy loam.

Gullied Land

The gullied land map unit is non hydric consociation of three soil components. Gullied land is the majority component comprising 85 percent of the map unit with unnamed (5 percent), Watsonville (5 percent) and Tierra (5 percent) making up the rest.

Beaches

The beach series is an entirely hydric soil that occurs along the coastal boundary of the Study Area. Typically, this soil type does not support woody vegetation and is not suitable for agriculture uses.

Terrace escarpments

Terrace escarpments consist of long, narrow, rocky areas that rise abruptly from the mean tide line to the coastal plain terraces or plateaus. This land type consists of steep faces that separate the terraces from the lower lying land. The faces are composed of soft coastal sandstone, hard shale, or hard, weather-resistant, fine-grained sandstone. Vegetation is sparse and is made up of dwarfed shrubs, a few patches of grass, lichens, and moss. In seepage areas water grasses, a few cypress, and various weathered conifers can also grow. Areas of terrace escarpments are used mainly for watershed and as wildlife habitat.

4.2.5 Hydrology

Hydrology in the Study Area is provided through precipitation and overland runoff from adjacent areas. An unnamed intermittent to perennial drainage extends from east to west within the gully of the Study Area. Additionally, tidal waters occur along the western portion of the Study Area. Precipitation for Half Moon Bay was normal for the 3-month periods preceding the January and February 2016 (NOAA 2016, USDA 2020) and January 2020 site visits (USDA 2020).

4.3 Special-Status Species

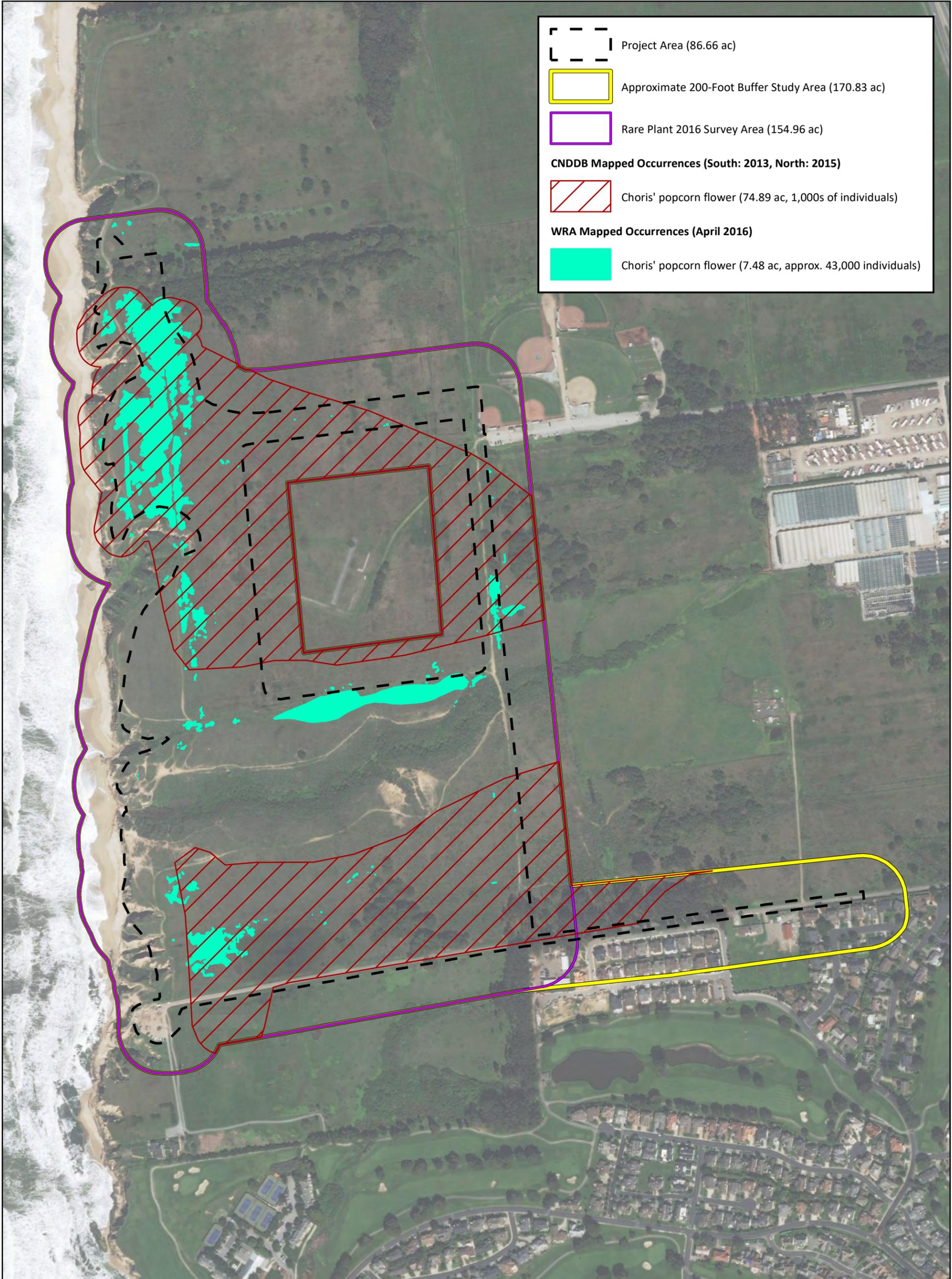
4.3.1 Plants

Based upon a review of the resources and databases given in Section 3.5.1, 48 special-status plant species had been documented in the vicinity of the Study Area (CDFW 2020, CNPS 2020a).

In 2016, not including the Utility Area, one special-status plant species, Choris' popcorn flower, was observed within the Study Area. Sixteen special-status plant species were determined to have moderate potential to occur in the Study Area but were not observed during appropriately-timed, protocol-level surveys and therefore are presumed absent from the Study Area.

Within the Utility Area specifically, no special-status plant species were observed on January 14, 2020, and one species was determined to have high potential to occur: Choris' popcornflower.

Appendix E summarizes the potential for occurrence for each special-status plant species occurring in the Half Moon Bay, Montara Mountain, and San Gregorio USGS 7.5 minute quadrangles. Figure 5 depicts Choris' popcorn flower locations within the Study Area known in 2016 but is not representative of presence or absence within the Utility Area that was added in 2019.

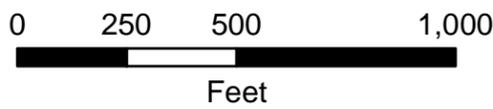


[---] Project Area (86.66 ac)
 [Yellow Outline] Approximate 200-Foot Buffer Study Area (170.83 ac)
 [Purple Outline] Rare Plant 2016 Survey Area (154.96 ac)
CNDDB Mapped Occurrences (South: 2013, North: 2015)
 [Red Hatched] Choris' popcorn flower (74.89 ac, 1,000s of individuals)
WRA Mapped Occurrences (April 2016)
 [Cyan] Choris' popcorn flower (7.48 ac, approx. 43,000 individuals)

Figure 5. Special-Status Plants Observed within Study Area



Wavecrest Coastal Trail: Southern Alignment
Half Moon Bay, California



Map Prepared Date: 1/31/2020
 Map Prepared By: mweidenbach
 Base Source: Esri World Imagery January 2020
 Data Source(s): WRA, CDFW CNDDB January 2020

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The remaining species documented to occur in the general vicinity of the Study Area are unlikely or have no potential to occur due to lack of suitable habitat within the Study Area. Additionally, some species were determined to have unlikely potential to occur within the Study Area due to lack of proximate occurrence information.

The protocol-level special-status plant surveys occurred during the blooming period of all special-status plant species with potential to occur in the Study Area. Aside from Choris' popcorn flower, no other special-status plants were observed. Plants observed during the site visits are listed in Appendix D.

Present/High Potential

Choris' popcorn flower (*Plagiobothrys chorisianus* var. *chorisianus*), CNPS Rank 1B.2.

Choris' popcorn flower is an annual herbaceous species in the family Boraginaceae. This species blooms between March and June. Typical habitat for this species includes chaparral, coastal prairie, and coastal scrub. Choris' popcorn flower has been recorded in Alameda, San Francisco, San Mateo, and Santa Cruz counties at elevations ranging from 15 to 160 meters and blooms from March through June. Choris' popcornflower was documented within the Study Area in 1995, 2004, 2013, and 2015, with reported population size estimates in the hundreds in 1995, 85 in 2013, and 3,000 in 2015 (CNPS 2020a, CDFW 2020, Corelli 2015).

Choris' popcornflower was observed during a protocol-level special-status plant survey within the Study Area, not including the Utility Area, on April 15, 2016. It was observed in northern coastal scrub, coyote brush/western rush scrub, seasonal wetland, and coastal wetland habitats. Based on 2016 survey estimates, the Study Area, not including the Utility Area, contains approximately 43,000 individuals of Choris' popcorn flower within 7.5 acres. The Choris' popcorn flower extent from this survey as well as the 1995 mapped extent is depicted in Figure 5.

Choris' popcornflower has high potential to occur in seasonal wetland habitat within the Utility Area. The January 2020 surveys in the Utility Area were not conducted during the appropriate bloom period to determine this species' presence or absence.

Moderate Potential (Not Observed)

Blasdale's bent grass (*Agrostis blasdalei*) CNPS Rank 1B.2. Blasdale's bentgrass is a perennial graminoid in the grass family (Poaceae) that typically occurs in bare or sparsely vegetated areas in coastal dune, coastal bluff scrub, and coastal prairie habitat at elevations ranging from 0 to 150 meters. This species blooms from May to July and is known from Mendocino, Monterey, Marin, San Mateo, Santa Cruz, and Sonoma counties (CDFW 2020, CNPS 2020a). Soil survey data at known locations suggest that this species is typically located on moderately strongly acid (pH 5.0) to slightly acid sandy (pH 6.5) loams and sands derived from sedimentary rock (CDFW 2020, CSRL 2020). The nearest documented occurrence is located approximately 7 miles northwest of the Study Area in Moss Beach, from May 2015. Blasdale's bent grass has moderate potential to occur in the Project Area due to the presence of potentially suitable bluff edge habitat. This species was not observed in the Study Area during the April and June 2016 protocol-level special-status plant surveys. No additional surveys for this species are recommended.

Ocean bluff milk-vetch (*Astragalus nuttallii* var. *nuttallii*), CNPS Rank 4.2. Ocean bluff milk-vetch is a perennial herb in the Fabaceae family that occurs in coastal bluff scrub and coastal dunes at elevations ranging from 3 to 120 meters. This species blooms from January to November and is known in Alameda, Monterey, Marin, Santa Barbara, San Francisco, San Luis Obispo, and San Mateo counties. The nearest documented occurrence is located approximately 6.5 miles from the Study Area in San Gregorio in 2007 and is presumed extant at that location. Given that the Study Area contains coastal scrub and sea cliff, this species was determined to have a moderate potential to be present. Ocean bluff milk-vetch was not observed in the Study Area during the April and June 2016 protocol-level special-status plant surveys. No additional surveys for this species are recommended.

Coastal marsh milk-vetch (*Astragalus pycnostachyus* var. *pycnostachyus*), CNPS Rank 1B.2. Coastal marsh milk-vetch is a perennial herb in Fabaceae family that occurs in the coastal dunes (mesic), coastal scrub, coastal salt and streamside marshes and swamps. This species typically occurs at elevations ranging from 0 to 30 meters in Humboldt, Marin, and San Mateo counties. Coastal marsh milk-vetch blooms between April and October. The nearest documented occurrence is located 4.97 miles from the Study Area at Pillar Point and was recorded in 1902, but is presumed extant at that location. This species has a moderate potential to occur in the Study Area due to the presence of suitable coastal habitat. Coastal marsh milk-vetch was not observed in the Study Area during the April and June 2016 protocol-level special-status plant surveys. No additional surveys for this species are recommended.

Johnny-nip (*Castilleja ambigua* var. *ambigua*), CNPS Rank 4.2. Johnny-nip is an annual (hemiparasitic) herb in the Orobanchaceae family that occurs in coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, valley and foothill grassland, and along vernal pools margins. It can be found at elevation ranges typically from (0 to 435 meters during its bloom period between March and August. The Study Area was determined to have moderate potential to support this species due to the presence of suitable coastal scrub habitat. Johnny-nip was not observed in the Study Area during the April and June 2016 protocol-level special-status plant surveys. No additional surveys for this species are recommended.

San Francisco Bay spineflower (*Chorizanthe cuspidata* var. *cuspidata*), CNPS Rank 1B.2. San Francisco Bay spineflower is an annual herbaceous species in the family Polygonaceae. It

occurs in coastal bluff scrub, coastal dunes, coastal prairie, coastal scrub, often on sandy soils. It is recorded from 3 to 215 meters in elevation in Alameda, Marin, San Francisco, San Mateo, and possibly Sonoma counties, and blooms between April and August. The nearest documented occurrence of this species is greater than 5 miles from the Study Area and is presumed extant at that location. This species has moderate potential to occur within the Study Area since suitable coastal scrub habitat for this species is present. San Francisco Bay spineflower was not observed in the Study Area during the April and June 2016 protocol-level special-status plant surveys. No additional surveys for this species are recommended.

San Francisco gumplant (*Grindelia hirsutula* var. *maritima*), CNPS Rank 3.2. San Francisco gumplant is a perennial herb in the family Asteraceae. It occurs on bluffs or in sandy or serpentine soils in coastal scrub, coastal bluff scrub, and valley and foothill grassland communities. It is recorded from 15 to 400 meters in elevation in Marin, San Francisco, San Luis Obispo, and San Mateo counties, with possible additional occurrences in Monterey and Santa Cruz counties. It blooms between June and September. The nearest documented occurrence is over 7 miles north of the Study Area from 1985 and is presumed extant. Within the Study Area, this species could occur within coastal scrub or grassland communities and therefore has moderate potential to occur. San Francisco gumplant was not observed in the Study Area during the April and June 2016 protocol-level special-status plant surveys. No additional surveys for this species are recommended.

Short-leaved evax (*Hesperevax sparsiflora* var. *brevifolia*), CNPS Rank 1B.2. Short-leaved evax is a small annual herb in the family Asteraceae. It occurs in sandy or rocky bluffs and flats in coastal bluff scrub and coastal dunes. Short-leaved evax is recorded from 0 to 200 meters in elevation in all coastal counties from Del Norte to Santa Cruz County, but is presumed extirpated from San Francisco County. It blooms between March and June. The nearest documented occurrence is from 1970 and is located over 7 miles northeast from the Study Area, and has never been verified at this location. The Study Area contains sandy coastal scrub habitat that has moderate potential to support this species. Short-leaved evax was not observed in the Study Area during the April and June 2016 protocol-level special-status plant surveys. No additional surveys for this species are recommended.

Kellogg's horkelia (*Horkelia cuneata* var. *sericea*), CNPS Rank 1B.1. Kellogg's horkelia is a perennial herb in the family Rosaceae. It occurs on gravelly or sandy soils in closed-cone coniferous forest, maritime chaparral, and openings in coastal scrub habitat. It is recorded from 10 to 200 meters in elevation in Alameda, Monterey, Santa Barbara, Santa Cruz, San Mateo, and San Luis Obispo counties, and is presumed extirpated from Marin and San Francisco counties. Kellogg's horkelia blooms between April and September. The nearest documented occurrence is from 2000 and was mapped 3 miles northeast of the Study Area on a ridgetop in Half Moon Bay and is presumed extant at that location. The Study Area has moderate potential to provide suitable habitat for this species within coastal scrub habitat. Kellogg's horkelia was not observed in the Study Area during the April and June 2016 protocol-level special-status plant surveys. No additional surveys for this species are recommended.

Point Reyes horkelia (*Horkelia marinensis*), CNPS Rank 1B.2. Point Reyes horkelia is a perennial herb in the family Rosaceae. It occurs in sandy flats, coastal prairie, and coastal scrub. It is recorded from 5 to 30 meters in elevation in Mendocino, Marin, Santa Cruz, San Mateo, and Sonoma counties. It blooms between May and September. The nearest documented occurrence

is from 1962 and is located approximately 11.5 miles from the Study Area in Junipero Serra Park and is presumed extant at that location. Within the Study Area, this species has moderate potential to occur within the coastal scrub community. Point Reyes horkelia was not observed in the Study Area during the April and June 2016 protocol-level special-status plant surveys. No additional surveys for this species are recommended.

Perennial goldfields (*Lasthenia californica* ssp. *macrantha*), CNPS Rank 1B.2. Perennial goldfields is a perennial herb in the Asteraceae family. This species typically occurs in coastal bluff scrub, coastal dunes, and coastal scrub communities at elevations ranging between five and 520 meters. It blooms between January and November. Perennial goldfields has been recorded in Mendocino, Marin, San Luis Obispo, San Mateo, and Sonoma counties. The nearest documented occurrence from 1921 is located 12.5 miles from the Study Area at Pescadero State Beach is presumed extant. Within the Study Area, this species could occur within coastal scrub habitat. Perennial goldfields were not observed in the Study Area during the April and June 2016 protocol-level special-status plant surveys. No additional surveys for this species are recommended.

Coast yellow leptosiphon (*Leptosiphon croceus*), State Endangered Candidate, CNPS Rank 1B.1. Coast yellow leptosiphon is an annual herb in the Polemoniaceae family that grows in coastal bluff scrub and coastal prairie habitats at elevations ranging from 10 to 150 meters. This species blooms between April and June. The nearest documented occurrence is from 2015 and is located 10.8 miles from the Study Area in Moss Beach. This species was determined to have moderate potential to occur within the Study Area due to known nearby populations and given that suitable coastal scrub habitat is present. Coast yellow leptosiphon was not observed in the Study Area during the April and June 2016 protocol-level special-status plant surveys. No additional surveys for this species are recommended.

San Mateo tree lupine (*Lupinus arboreus* var. *eximius*), CNPS Rank 3.2. San Mateo tree lupine is a perennial evergreen shrub that occurs in the Fabaceae family. This species typically occurs in chaparral and coastal scrub habitats at elevations ranging from 90 to 550 meters. It blooms between April and July and has been recorded in San Mateo and Sonoma counties. There limited occurrence information for this species. San Mateo tree lupine was determined to have moderate potential to occur within the Study Area due to the presence of coastal scrub habitat and sandy soils that may be suitable for this species. San Mateo tree lupine was not observed in the Study Area during the April and June 2016 protocol-level special-status plant surveys. No additional surveys for this species are recommended.

Davidson's bushmallow (*Malacothamnus davidsonii*), CNPS Rank 1B.2. Davidson's bushmallow is a perennial deciduous shrub from the Malvaceae family. This species typically occurs in chaparral, cismontane woodland, coastal scrub, and riparian woodland communities at elevations ranging from 185 to 855 meters. Davidson's bushmallow blooms between June and January and has been recorded in Los Angeles, Monterey, Santa Clara, San Luis Obispo, and San Mateo counties. The nearest documented occurrence is from Crystal Spring Reservoir from 1912. Within the Study Area, this species could occur within the coastal scrub community. Davidson's bushmallow was not observed in the Study Area during the April and June 2016 protocol-level special-status plant surveys. No additional surveys for this species are recommended.

Marsh microseris (*Microseris paludosa*), CNPS Rank 1B.2. Marsh microseris is a perennial herb in the family Asteraceae. It occurs in closed-cone coniferous forest, cismontane woodland, coastal scrub, and valley and foothill grassland, often where grasses are low-growing. It is recorded from 5 to 300 meters in elevation in Mendocino, Monterey, Marin, San Benito, Santa Cruz, San Luis Obispo, and Sonoma counties, and is presumed extirpated from San Francisco and San Mateo counties. It blooms between April and June. The nearest documented occurrence is from 2004 and is located 14 miles from the Study Area in Pescadero State Beach. Within the Study Area, this species could occur within coastal scrub or grassland communities. Marsh microseris was not observed in the Study Area during the April and June 2016 protocol-level special-status plant surveys. No additional surveys for this species are recommended.

Oregon polemonium (*Polemonium carneum*), CNPS Rank 2B.2. Oregon polemonium is a perennial herb in the family Polemoniaceae. It occurs in coastal prairie, coastal scrub, and lower montane coniferous forest. Oregon polemonium is recorded from 0 to 1830 meters in elevation in Del Norte, Siskiyou, Humboldt, Sonoma, Marin, Alameda, San Francisco, and San Mateo counties. It blooms between April and September. The nearest documented occurrence is from 1916 and is located 7.23 miles from the Study Area in Pilarcitos Dam and is presumed extant at that location. Within the Study Area, this species could occur within the coastal scrub community. Oregon polemonium was not observed in the Study Area during the April and June 2016 protocol-level special-status plant surveys. No additional surveys for this species are recommended.

Hickman's cinquefoil (*Potentilla hickmanii*), FE, SE, CNPS Rank 1B.2. Hickman's cinquefoil is a perennial herb in the family Rosaceae. It occurs in coastal bluff scrub, closed-cone coniferous forest, vernal mesic meadows and seeps, and freshwater marshes and swamps. It is recorded from 10 to 149 meters in elevation in Monterey, San Mateo, and Sonoma counties. It blooms between April and August. The nearest documented occurrence of this species is from 2008 over 7.8 miles north from the Study Area at Moss Beach. Within the Study Area, this species could occur in the coastal scrub community. Hickman's cinquefoil was not observed in the Study Area during the April and June 2016 protocol-level special-status plant surveys. No additional surveys for this species are recommended.

San Francisco campion (*Silene verecunda* ssp. *verecunda*), CNPS Rank 1B.2. San Francisco campion is a perennial herb in the family Caryophyllaceae. It occurs in sandy soils in coastal bluff scrub, chaparral, coastal prairie, coastal scrub, and valley and foothill grassland. It is recorded from 30 to 645 meters in elevation in San Francisco, San Mateo, Santa Cruz, and Sutter counties. San Francisco campion blooms between March and August. The nearest documented occurrence is from 1994 and is located 6.6 miles from the Study Area on Montara Mountain and is presumed extant at that location. Within the Study Area, this species could occur within coastal scrub or grassland communities. San Francisco campion was not observed in the Study Area during the April and June 2016 protocol-level special-status plant surveys. No additional surveys for this species are recommended.

4.3.2 Wildlife

Based upon a review of the resources and databases given in Section 3.4.1, 64 special-status wildlife species have been documented in the vicinity of the Study Area. Appendix E summarizes the potential for each of these species to occur in the Study Area. Of the 64 special-status wildlife species, nine special-status wildlife species have a moderate or high potential to occur within the

Study Area. The majority of species have no potential or are unlikely to occur because of a lack of suitable habitat such as serpentine, tidal marsh, stream, or pond habitats. Species may have been omitted due to lack of available habitat or the distance of the Study Area from documented occurrences. The special-status wildlife species with a moderate or high potential to occur in the Study Area are discussed further below. The remaining species documented to occur in the vicinity are unlikely or have no potential to occur due to lack of suitable habitat within the Study Area.

Following the discussion of the species that have a high or moderate potential to occur is a discussion of Federal-listed species that are unlikely to occur, but may require additional avoidance and minimization measures to avoid take.

San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*), CDFW Species of Special Concern. San Francisco dusky-footed woodrat occurs in the Coast Ranges between San Francisco Bay and the Salinas River (Matocq 2003). Occupied habitats are variable and include forest, woodland, riparian areas, and chaparral. Woodrats feed on woody plants, but will also consume fungi, grasses, flowers, and acorns. Foraging occurs on the ground and in bushes and trees. This species constructs robust stick houses/structures in areas with moderate cover and a well-developed understory containing woody debris. Breeding takes place from December to September. Individuals are active year-round, and generally nocturnal. The Monterey cypress stands within the Study Area do not have understory vegetation and are unlikely to be used by woodrats based upon lack of suitable vegetation and high disturbance by humans and off-leash pets. No woodrat houses were observed in the Monterey cypress stands during the BRE site visits. The dense central coast riparian scrub habitat is suitable for woodrat and a house was observed within the 200-foot buffer during the BRE site visit in central coast riparian scrub along the western portion of the existing informal trail crossing. No woodrat houses were observed within the Project Area. Therefore this species has moderate potential to establish in the riparian scrub habitats within the Project Area.

Western red bat (*Lasiurus blossevillii*), CDFW Species of Special Concern, WBWG High Priority. Western red bat is highly migratory and broadly distributed, ranging from southern Canada through much of the western United States. Western red bats are believed to make seasonal shifts in their distribution, although there is no evidence of mass migrations (WBWG 2016). They are typically solitary, roosting primarily in the foliage of trees or shrubs. Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas possibly and association with riparian habitat (particularly willows, cottonwoods, and sycamores; WBWG 2016). It is believed that males and females maintain different distributions during pupping, where females take advantage of warmer inland areas and males occur in cooler areas along the coast. The Monterey cypress present within the Study Area may provide suitable roost habitat for this species; however, the density of the willow branches reduces the potential for the riparian scrub habitat to be used for roost sites because of obstruction to initiation of flight (WBWG 2016). The Study Area does not provide suitable conditions for hibernating bats because of location at the coastline and lack of hibernacula. The Study Area has a moderate potential to support western red bat roosting in the Monterey cypress during the active season.

Hoary bat (*Lasiurus cinereus*), WBWG Medium Priority. Hoary bats are highly associated with forested habitats in the western United States, particularly in the Pacific Northwest. They are a solitary species and roost primarily in foliage of both coniferous and deciduous trees, near the ends of branches, usually at the edge of a clearing. Roosts are typically 10 to 30 feet above the ground.

They have also been documented roosting in caves, beneath rock ledges, in woodpecker holes, in grey squirrel nests, under driftwood, and clinging to the side of buildings, though this behavior is not typical. Hoary bats are thought to be highly migratory, however, wintering sites and migratory routes have not been well documented. This species tolerates a wide range of temperatures and has been captured at air temperatures between 0 and 22 degrees Celsius. Hoary bats probably mate in the fall, with delayed implantation leading to birth in May through July. They usually emerge late in the evening to forage, typically from just over one hour after sunset to after midnight. This species reportedly has a strong preference for moths, but is also known to eat beetles, flies, grasshoppers, termites, dragonflies, and wasps (WBWG 2016). The Monterey cypress and willows in the riparian habitat within the Study Area may provide suitable roost habitat for this species. The Study Area does not provide suitable conditions for hibernating bats because of location at the coastline and lack of hibernacula. The Study Area has a moderate potential to support hoary bat roosting in the Monterey cypress and willow trees during the active season.

White-tailed kite (*Elanus leucurus*), CDFW Fully Protected Species, LCP Unique Species.

Kites occur in low elevation grassland, agricultural, wetland, oak woodland, and savannah habitats. Riparian zones adjacent to open areas are also used. Vegetative structure and prey availability seem to be more important than specific associations with plant species or vegetative communities. Lightly grazed or ungrazed fields generally support large prey populations and are often preferred to other habitats. Kite primarily feed on small mammals, although, birds, reptiles, amphibians, and insects are also taken. Nest trees range from single isolated trees to trees within large contiguous forests. Preferred nest trees are extremely variable, ranging from small shrubs (less than 10 ft. tall), to large trees (greater than 150 ft. tall) (Dunk 1995). Suitable foraging habitat is present and trees in the Study Area provide potential nesting habitat. White-tailed kite was observed within the Study Area during the January 27, 2016 and the January 14, 2020 site visit and Monterey cypress stands provide suitable sites where this species has a moderate potential to nest.

Olive-sided flycatcher (*Contopus cooperi*), CDFW Species of Special Concern. Olive-sided flycatcher is found within the coniferous forest biome, most often associated with forest openings, forest edges near natural openings (e.g. meadows, canyons, rivers) or human-made openings (e.g., harvest units), or open to semi-open forest stands (Altman 2000). Although this species typically nests at higher elevations and more protected areas from the coastline, the Monterey cypress in Study Area provide suitable nesting habitat. There is a moderate potential for this species to nest in the Monterey cypress stands within the Study Area.

Loggerhead shrike (*Lanius ludovicianus*), CDFW Species of Special Concern. Loggerhead shrike is a common resident and winter visitor in lowlands and foothills throughout California. It prefers open habitats with scattered trees, shrubs, posts, fences, utility lines or other perches. Nests are usually built on a stable branch in a densely-foliaged shrub or small tree and are usually well-concealed. The highest densities occur in open-canopied valley foothill hardwood, valley foothill hardwood-conifer, valley foothill, riparian, pinyon-juniper, juniper, and desert riparian habitats. While this species eats mostly arthropods, they also take amphibians, small to medium-sized reptiles, small mammals, and birds. They are also known to scavenge on carrion. Suitable foraging habitat is present and suitable nesting habitat may be present in the trees and shrubs within the Study Area. Therefore, this species has a moderate potential to occur within the Study Area.

San Francisco (saltmarsh) common yellowthroat (*Geothlypis trichas sinuosa*), CDFW Species of Special Concern. San Francisco (saltmarsh) common yellowthroat is found in freshwater marshes, coastal swales, riparian thickets, brackish marshes, and saltwater marshes. Their breeding range extends from Tomales Bay in the north, Carquinez Strait to the east, and Santa Cruz County to the south. This species requires thick, continuous cover such as tall grasses, tule patches, or riparian vegetation down to the water surface for foraging and prefers willows for nesting (Shuford and Gardali 2008). Although this species is more typically associated with nesting near open water, the willow riparian habitat is suitable for nesting by this species. There is a moderate potential for this species to nest within the riparian habitat in the Study Area.

(Brewster's) Yellow warbler (*Setophaga petechia brewsteri*), CDFW Species of Special Concern. Yellow warbler is a neotropical migrant bird that is widespread in North America, but has declined throughout much of its California breeding range. The Brewster's (*brewsteri*) subspecies is a summer resident and represents the vast majority of yellow warblers that breed in California. West of the Central Valley, typical yellow warbler breeding habitat consists of dense riparian vegetation along watercourses, including wet meadows, with willow growth especially being favored (Shuford and Gardali 2008). Insects comprise the majority of the diet. The riparian scrub habitat within the Study Area is suitable for nesting by this species, and this species is known to nest in the vicinity of the Study Area. There is a high potential for this species to nest within the riparian habitat within the Study Area.

Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*), CDFW Species of Special Concern. Bryant's is a savannah sparrow subspecies and California endemic whose range extends along the fog belt from Monterey County north to Del Norte County. It is most often associated with salt marsh habitat, but will also use moist grasslands. Suitable foraging habitat is present and suitable nesting habitat may be present in the grassland habitat within the Study Area. This species was observed on the January 27, 2016 site visit, and based upon location and habitat, it is assumed to be the protected subspecies *P. s. alaudinus*. The moist grassland habitat with scattered shrubs within the Study Area provide suitable nesting habitat for this species. This subspecies is present and has a high potential to nest within the Study Area.

The following species are known in the vicinity but unlikely to occur within the Study Area, and are discussed here further.

San Francisco Garter Snake (*Thamnophis sirtalis tetrataenia*), Federal Endangered, State Endangered, CDFW Fully Protected, LCP Rare Species. Historically, San Francisco garter snake (SFGS) occurred in scattered wetland areas on the San Francisco Peninsula from approximately the San Francisco County line south along the eastern and western bases of the Santa Cruz Mountains, at least to the Upper Crystal Springs Reservoir, and along the coast south to Año Nuevo Point, San Mateo County, and Waddell Creek, Santa Cruz County. The preferred habitat of the SFGS is a densely vegetated pond near an open hillside where they can sun themselves, feed, and find cover in rodent burrows; however, considerably less ideal habitats can be successfully occupied (USFWS 2006). Temporary ponds and other seasonal freshwater bodies are also used. Emergent and bankside vegetation such as cattails (*Typha* spp.), bulrushes (*Scirpus* spp.) and spike rushes (*Juncus* spp. and *Eleocharis* spp.) apparently are preferred and used for cover. The area between stream and pond habitats and grasslands or bank sides is used for basking; while nearby dense vegetation or water often provide escape cover. Snakes also use floating algal or rush mats, if available.

There are two significant components to SFGS habitat: 1) ponds that support California red-legged frog (*Rana draytonii*, CRLF), American bullfrog (*Lithobates catesbeiana*), or the Pacific treefrog (*Pseudacris regilla*) and 2) surrounding upland that supports Botta's pocket gopher (*Thomomys bottae*) and the California meadow vole (*Microtus californicus*) (USFWS 2006). Ranid frogs are an obligate component of the SFGS's diet (USFWS 2006).

Specific information on the home range of SFGS documents this species to travel much shorter distances than other gartersnake species, many of which travel over several kilometers between winter and summer sites. Studies at Año Nuevo State Reserve found the mean distance of female hibernacula to the Visitor Center Pond was 459 feet, with a maximum distance of 637 feet. Distances of greater than 637 feet have been reported, including an unconfirmed distance of approximately 1000 feet (McGinnis et al. 1987, Larson 1994). However, more recent studies at Año Nuevo State Reserve continue to confirm SFGS are regularly within 300 and 650 feet of foraging (pond) habitats and upland sites. Dispersal is rarely greater than this distance although not impossible if dispersal occurs in pursuit of prey (USFWS 2006), and during periods of heavy rain or shortly after, SFGS may make long-distance movements of up to 1.25 miles along drainages within the dense riparian cover; however, SFGS have not been documented to travel over open terrain (McGinnis 2001).

The seasonal wetland depressions and swales within the Study Area are only inundated for brief periods immediately after storm events and do not support a population of ranid frog species. Two seasonal wetlands and ditches do support Pacific tree frogs; however, these ditches do not support prey items beyond winter and early spring and distance to potentially occupied habitats by SFGS are of sufficient distance to greatly reduce the potential for SFGS to use the habitats within the Study Area even on a seasonal basis. In the late spring through fall months, the Study Area is unlikely to support any prey items of SFGS, especially CRLF which are more heavily depended upon as a food source of SFGS during the late spring and summer months (USFWS 2006). The nearest potential year-round suitable habitat for SFGS is 0.75 mile east and Highway 1 is present between the Study Area and this potential habitat. A potential early season pond is present northeast of the Study Area; however, this pond is over 1,000 feet from the Study Area and unlikely to be inhabited by SFGS. Currently, there is no suitable aquatic habitat for SFGS within or in proximity to the Study Area. Longer travel distances by SFGS have potential only when SFGS are most probably following prey items, and there is no riparian linkage to provide a likely dispersal pathway in this situation. This species is unlikely to occur within the Study Area.

California red-legged frog (*Rana draytonii*), Federal Threatened, CDFW Species of Special Concern, LCP Unique Species. The historic range of California red-legged frog (CRLF) extended along the coast from the vicinity of Point Reyes National Seashore, Marin County, California and inland from Redding, Shasta County southward to northwestern Baja California, Mexico (Jennings and Hayes 1994, Hayes and Krempels 1986). The current distribution of this species includes only isolated localities in the Sierra Nevada, northern Coast and Northern Traverse Ranges. It is still common in the San Francisco Bay Area and along the Central Coast and it is now believed extirpated from the southern Transverse and Peninsular Ranges (USFWS 2002).

There are four physical and biological features that are considered to be essential for the conservation or survival of this species. The features for CRLF include: aquatic breeding habitat; non-breeding aquatic habitat; upland habitat; and dispersal habitat (USFWS 2010). Aquatic breeding habitat consists of low-gradient fresh water bodies including natural and manmade (e.g.,

stock) ponds and pools in perennial streams (Jennings and Hayes 1994), marshes, lagoons, and dune ponds. Aquatic breeding habitat must hold water for a minimum of 20 weeks in most years. This is the average amount of time needed for egg, larvae, and tadpole development and metamorphosis so that juveniles can become capable of surviving in upland habitats (USFWS 2010). Optimal habitat is characterized by dense, shrubby riparian vegetation associated with deep (less than 2.3 feet), still, or slow-moving water (Hayes and Jennings 1986). Arroyo willow (*Salix lasiolepis*) seems to provide the most suitable riparian habitat structurally, although cattails and bulrushes also can provide suitable habitat. Although CRLF are found in ephemeral streams and ponds, populations cannot be maintained where all surface water disappears (Jennings and Hayes 1994).

Aquatic non-breeding habitat may or may not hold water long enough for this species to hatch and complete its aquatic life cycle, but it provides shelter, foraging, predator avoidance, and aquatic dispersal for juvenile and adult CRLF. These waterbodies include plunge pools within intermittent creeks; seeps; quiet water refugia during high water flows; and springs of sufficient flow to withstand the summer dry period. CRLF can use large cracks in the bottom of dried ponds as refugia to maintain moisture and avoid heat and solar exposure (Alvarez 2004). Non-breeding aquatic features enable CRLF to survive drought periods, and disperse to other aquatic breeding habitat (USFWS 2010).

Upland habitats include areas within 200 to 300 feet of aquatic and riparian habitat and are comprised of grasslands, woodlands, and/or vegetation that provide shelter, forage, and predator avoidance. These upland features provide breeding, non-breeding, feeding, and sheltering habitat for juvenile and adult frogs (e.g., shelter, shade, moisture, cooler temperatures, a prey base, foraging opportunities, and areas for predator avoidance). Upland habitat can include structural features such as boulders, rocks and organic debris (e.g. downed trees, logs), as well as small mammal burrows and moist leaf litter (USFWS 2010). Dispersal habitat includes accessible upland or riparian habitats between occupied locations within 0.7 miles of each other that allow for movement between these sites (USFWS 2002).

Dispersal habitat includes various natural and altered habitats such as agricultural fields, which do not contain barriers to dispersal. Moderate to high-density urban or industrial developments, large reservoirs and heavily traveled roads without bridges or culverts are considered barriers to dispersal (USFWS 2010). Short-distance dispersal movements are generally straight-line movements (Bulger et al. 2003). Overland dispersal movements through upland habitats typically occur at night during wet weather (USFWS 2002, Bulger et al. 2003, Fellers and Kleeman 2007). During dry weather, CRLF tend to remain very close to a water source; however, overland dispersal may occur in response to receding water (USFWS 2002). California red-legged frog has been documented to disperse up to 1.8 miles (Fellers and Kleeman 2007), although more typical distances are within 0.7 mile (USFWS 2002).

The nearest documented occurrences of CRLF are an agricultural ditch over 1,000 feet north and 0.9 mile south of the Study Area. Based on the description of the habitat for the nearest occurrence to the northeast, it is likely that the observed frog was a dispersing individual. Only one individual was observed at this location and no subsequent observations at this location have been made since 2004. There is also a pond on a golf course 630 feet south of the Study Area with potential to support CRLF.

The seasonal wetland depressions and swales within the Study Area are only inundated for brief periods immediately after storm events and do not support a population of ranid frog species. Two seasonal wetlands and ditches do support Pacific tree frog breeding; however, these wetlands and ditches are not of sufficient depth or maintain a sufficient inundation period to support CRLF breeding. The maximum potential depth of these features is 18 inches, and the average depth was 12 inches or less at the time of the January 27, 2016 site visit. This is at the lower limit of potential depths for CRLF to breed within (Alvarez et al. 2013), and these are small wetlands and ditches which do not remain inundated for a suitable length to support larval development. The Study Area is greater than 600 feet from all potential breeding habitat; therefore, the Study Area is unlikely to be used as upland refugia by CRLF and almost no burrows of suitable sized were observed within the Study Area. In addition, the riparian scrub habitat is not connected to habitats to the east nor does it appear to contain potential breeding habitat based upon a review of the areas in the vicinity of the existing trail and at the beach. There was only a minimal amount of flow despite recent heavy rains in the area in previous weeks. Although the Study Area is unlikely to be used by CRLF for breeding or upland refugia, the Study Area is within 0.6 mile of breeding habitats. CRLF dispersing from nearby breeding habitats to the north and south of the Study Area may occasionally use the riparian habitat, ditches, and seasonal wetlands; however, CRLF are only likely to use the Study Area when these habitats are inundated or during rain events because CRLF are unlikely to travel over dry land (USFWS 2002, Bulger et al. 2003, Fellers and Kleeman 2007). Therefore, CRLF is not likely to occur within the Study Area except on rare occasion during fall or winter rain events.

Monarch butterfly (*Danaus plexippus*). CDFW Roost Protected. Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts are located in wind protected tree groves, with nectar and water sources nearby, and are often on south, southwest, or west facing slopes which may provide more favorable temperature regimes and wind protection (Leong et al. 2004). Monarch butterflies typically arrive in mid-October to overwintering sites along the California coast and remain until late February or March (Jepsen et al. 2015). No documented roosts are known within the Study Area, which contains ample public open space with a high number of daily visitors. Potentially suitable winter roost sites exist for this species in the Monterey cypress stands within the Study Area; however, roost sites are typically in more sheltered locations from the coastline. Monarch butterflies were not observed within the Study Area or adjacent eucalyptus groves during the January 26 and 27, 2016 site visit; however, monarch butterflies were observed in small numbers foraging within the Study Area during February 9 and 16, 2016 site visits. No roosting by monarchs was observed in the Monterey cypress stands within the Study Area, and areas of eucalyptus adjacent to and within the Study Area are not sufficiently sheltered from coastal weather systems to provide a wind block. Foraging habitat is present. However, because the Monterey cypress stands and eucalyptus groves are exposed and no monarchs were observed roosting during the BRE site visits, monarch butterflies are considered unlikely to establish winter roost sites on the Study Area.

5.0 PROJECT IMPACTS, AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES

The following sections present Project impacts and measures that have been incorporated into the Project Design that will avoid or reduce impacts to special-status species and sensitive habitats. Additional details for Project avoidance, minimization, and mitigation measures are provided in the CEQA Initial Study completed for the Project. Figure 6 depicts the Project permanent impacts to seasonal wetland, coastal seasonal wetland, and non-wetland water habitats.

5.1 Biological Communities

The CCC and LCP generally prohibit land use or development, which would have significant adverse impact on ESHAs. The LCP defines specific criteria for allowable development areas in ESHAs, requires ESHA impacts to be minimized to the maximum extent feasible through siting and design, and requires that mitigation measures implemented where impacts to ESHAs may occur. However, permitted uses allowed within ESHAs include the following: education and research, trails and scenic overlooks on public lands, and fish and wildlife management. As stated previously, ESHAs within the Study Area include non-wetland waters in Ravine 9 and tidal waters associated with the Pacific Ocean; sea cliffs; central coast riparian scrub, seasonal wetlands, beaches, and coastal seasonal wetlands.

5.1.1 Wetlands and Non-Wetland Waters

The Project has been designed to the maximum extent feasible to avoid impacts to seasonal wetland, coastal seasonal wetland, and non-wetland waters habitats. In areas where the trail design was confined to locations containing seasonal wetland and coastal seasonal wetland habitats, the trail spans overtop of the habitat via decking supported by footings to reduce the area of sensitive habitat that will be permanently impacted.

Consequently, the Project will result in 503 square feet (sf; 0.01 acre) of permanent fill impacts to seasonal wetlands regulated by the Corps/RWQCB/CCC through trenching the utility line connection along Redondo Beach Road and construction of the trail shoulder and fence footings. Additionally, approximately 4,822 sf (0.11 acre) of temporary impacts will occur to seasonal wetlands regulated by the Corps/RWQCB/CCC through construction access. The Project will also permanently impact 49 sf (<0.01 acre) of coastal seasonal wetlands regulated by the CCC through the construction of the Park Avenue Paper Street improvements, the footings that will support the trail decking, and through shading from trail decking. Approximately 2,598 sf (0.06 acre) of temporary impacts to coastal seasonal wetlands regulated by the CCC would occur through construction access.

Additionally, Project work at the unnamed intermittent to perennial drainage in Ravine 9 will result in no permanent impacts to non-wetland waters below OHWM regulated by the Corps. Temporary impacts to 371 sf (0.01 acre; 41 linear feet) of non-wetlands waters below OHWM regulated by Corps may occur from construction access.

The following standards shall be implemented to minimize adverse effects of development or other activity near wetland and non-wetland waters areas:

1. The removal of vegetation shall be minimized;
2. To compensate for the permanent impacts to the aquatic features, habitat will be enhanced or replaced as defined by required agency permits;
3. Development conforms to natural topography and that erosion potential is minimized;
4. Provisions have been made to keep runoff and sedimentation from exceeding predevelopment levels;
5. Native and non-invasive exotic vegetation is used for replanting, where appropriate; and

6. Any discharge of toxic substances, such as fertilizers and pesticides, is prevented.

5.1.2 *Sea Cliffs*

The Project has been designed to the maximum extent feasible to avoid impacts to sea cliffs. However, a portion of the trail and stairs overlaps with small portions of this habitat at Ravine 9. As a result, a portion of sea cliff will be permanently impacted but will focus and limit pedestrian access to a specific, well-defined location and is consistent with the LCP Land Use Plan Section 3-19 "limited foot paths" use. Consequently, the Project will result in 562 sf (0.01 acre) of permanent impacts to sea cliffs regulated by the CCC/LCP resulting from vegetation removal, trail grading, stair/railing/cribwall installation, rock-lining a swale, erosional gully restoration (which will entail grading and backfill), and ripping and restoring degraded areas. An additional 604 sf (0.01 acre) of temporary impacts to sea cliffs regulated by the CCC/LCP will occur from construction access.

The following standards shall be implemented to minimize adverse effects of development, public access, erosional forces or other activity near sea cliff areas:

1. All activities that require substantial ground disturbance should take place only during the summer months (generally April 15 through October 31) to minimize potential erosion and sedimentation;
2. Development standards in the LCP Land Use Plan require restricting pedestrian traffic to well-defined trails to avoid seabird nesting and roosting sites and providing signage to protect natural vegetation and roosting sites;
3. The removal of vegetation shall be minimized to maximum extent feasible;
4. Development conforms to natural topography so that erosion potential is minimized;
5. Provisions have been made to keep runoff and sedimentation from exceeding predevelopment levels;
6. Native and non-invasive exotic vegetation is used for replanting, where appropriate;
7. Any discharge of toxic substances, such as fertilizers and pesticides, is prevented; and
8. Solid materials, including wood, masonry/rock, glass, paper, or other materials should not be stored in sea cliff locations, solid waste materials should be properly disposed of offsite.

5.1.3 Central Coast Riparian Scrub

The Project has been designed to the maximum extent feasible to avoid impacts to central coast riparian scrub habitat and areas above OHWM but inside TOB at Ravine 9. However, on the eastern crossing at Ravine 9 contains a rock-lined ditch and the work at the western stairs overlap with portions of this habitat. As a result, portions of central coast riparian scrub and areas inside TOB will be impacted.

Up to 209 sf (<0.01 acre; 97 linear feet) of permanent impacts to this feature below TOB and additional 736 sf (0.02 acre) of riparian habitat outside TOB regulated by RWQCB/CCC/CDFW would occur from Park Avenue Paper Street improvements, southern beach stairs/handrail/cribwall construction, gully restoration, and construction and improvements to drainage features including a slope drain by the south stairs as well as rock lined swales and ditches. An additional 3,474 sf (0.07 acre; 146 linear feet) of temporary impacts to areas below TOB and 4,092 sf (0.09 acre) of riparian habitat outside TOB through construction access would occur. Consequently, the Project will result in 945 sf (0.02 acre) of permanent impacts and 7,566 sf (0.17 acre) of temporary impacts to central coast riparian scrub habitat regulated by the CDFW/RWQCB/CCC resulting from work at the eastern portion (crossing) and western portion (stairs) of Ravine 9 in the Project area.

The following standards shall be implemented to minimize adverse effects of development or other activity near central coast riparian scrub and areas below TOB:

1. The removal of vegetation shall be minimized;
2. To compensate for the permanent impacts to the habitat, habitat will be enhanced or replaced as defined by required agency permits;
3. Development conforms to natural topography and that erosion potential is minimized;
4. Provisions have been made to keep runoff and sedimentation from exceeding predevelopment levels;
5. Native and non-invasive exotic vegetation is used for replanting, where appropriate; and
6. Any discharge of toxic substances, such as fertilizers and pesticides, is prevented.

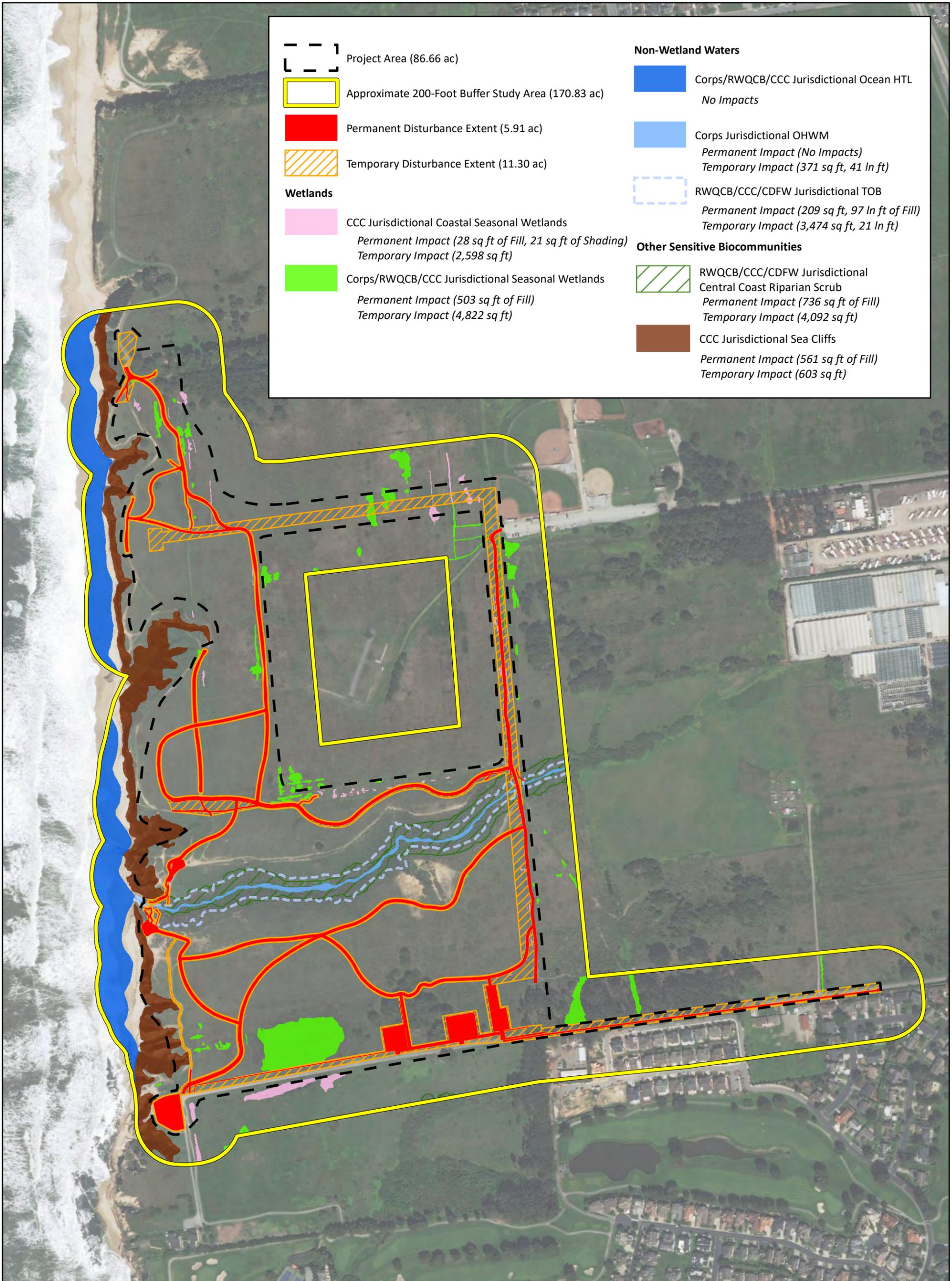
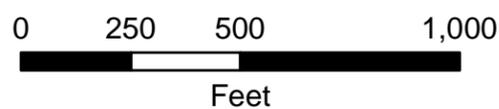


Figure 6. Project Impacts to Corps, RWQCB, CCC/LCP, and CDFW Jurisdictional Features

Wavecrest Coastal Trail: Southern Alignment
Half Moon Bay, California



Map Prepared Date: 1/31/2020
Map Prepared By: mweidenbach
Base Source: Esri World Imagery January 2020
Data Source(s): WRA

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General Avoidance Measures

Below, general avoidance measures that have been incorporated into the Project design to reduce potential impacts to sensitive habitats. Specific performance criteria for ESHAs are described:

- Any site grading activities shall be restricted between approximately April 15 and October 15. Site grading during these dryer months will reduce the possibility of soil erosion and sediments flowing into natural habitats.
- Soil disturbance around wetland areas shall be minimized as much as possible. This will reduce the impact to existing soils and vegetation that will remain as natural habitat and reduce the potential for soil erosion. Perimeter erosion and sediment control measures (i.e. straw wattles) shall be installed as an extra precaution to reduce the possibility of sediments entering adjacent ESHAs. Solid materials, including wood, masonry/rock, glass, paper, or other materials shall not be stored or placed near wetland areas to the extent practicable. Solid waste materials shall be properly disposed of off-site. Fluid materials, including concrete, wash water, fuels, lubricants, or other fluid materials used during construction shall not be disposed of on-site and should be stored or confined as necessary to prevent spillage into natural habitats. If a spill of such materials occurs, the area shall be cleaned and contaminated materials disposed of properly. The affected area shall be restored to its natural condition.

5.2 Special-Status Plant Species

Of the 48 special-status plant species known to occur in the vicinity of the Study Area, one has been documented within the Study Area and 16 were determined to have a moderate or high potential to occur in the Study Area. Protocol-level special-status plant surveys were conducted in April and June 2016, during the blooming periods for species with a moderate or high potential to occur in the Study Area. The Study Area, excluding the Utility Area, was found to contain approximately 43,000 Choris' popcorn flower individuals within 7.48 acres. Of these documented individuals, current site plans would result in permanent impacts to approximately 2,062 individual plants within 0.37 acre from trail construction and the ripping, grading, and restoration actions. This represents an impact of approximately 5 percent of the occupied habitat and 5 percent of the individuals known from the 2016 Study Area survey. There would be temporary impacts to approximately 5,105 individual plants within in 0.70 acre for construction access. Figure 7 depicts proposed impacts to Choris' popcorn flower within the Project Area (excluding the Utility Area).

In addition, Choris' popcornflower has high potential to occur within seasonal wetland habitat within the Utility Area, and thus the Project work could result in potential permanent impacts to this species and it's occupied habitat through trenching a utility connection or temporary impacts for worker access.

Prior to construction activity within the Project Area, not including the Utility Area, Choris' popcorn flower seeds shall be collected from areas that will be impacted from the trail alignment and added to the seed mix to be used to revegetate and decommission informal trails within other portions of the Project Area. Following the completion of the project, areas within the CLT lands that are outside of the public rights-of-way will be preserved.

Prior to construction activities in the Utility Area, appropriately timed surveys for Choris' popcorn flower shall be conducted within the Utility Area. If Choris' popcorn flower is observed there, its seeds shall be collected from areas that will be impacted from the utility installation and added to the seed mix to be used to revegetate the Utility Area. Following the completion of the project, areas within the CLT lands that are outside of the public rights-of-way will be preserved.

5.3 Special-Status Wildlife Species

Of the 73 special-status wildlife species known to occur within the vicinity of the Study Area, eleven species were determined to have a moderate or high potential to occur within the Study Area. Of these ten species, one is the San Francisco dusky-footed woodrat, two are bat species, and seven are special-status bird species. Two Federal-listed species were determined to be unlikely to inhabit the Study Area, but may occasionally disperse or migrate through the Study Area. Recommendations to avoid take of these species is included in Section 5.3.4 below.

5.3.1 San Francisco Dusky-Footed Woodrat

The riparian habitat in the Study Area has the potential to support the San Francisco dusky-footed woodrat. A pre-construction survey for woodrat houses shall be conducted by a qualified biologist within 30 days prior to the start of work. If houses are observed during surveys, they shall be avoided if possible. If avoidance is not feasible, the houses shall be dismantled by hand under the supervision of a biologist.

If young are encountered during the dismantling process, the material shall be placed back on the house and the house shall remain unmolested for two to three weeks in order to give the young enough time to mature and leave the house. After two to three weeks, the nest dismantling process may begin again. Nest material shall be moved to suitable adjacent areas (riparian, woodland, scrub) that will not be impacted.

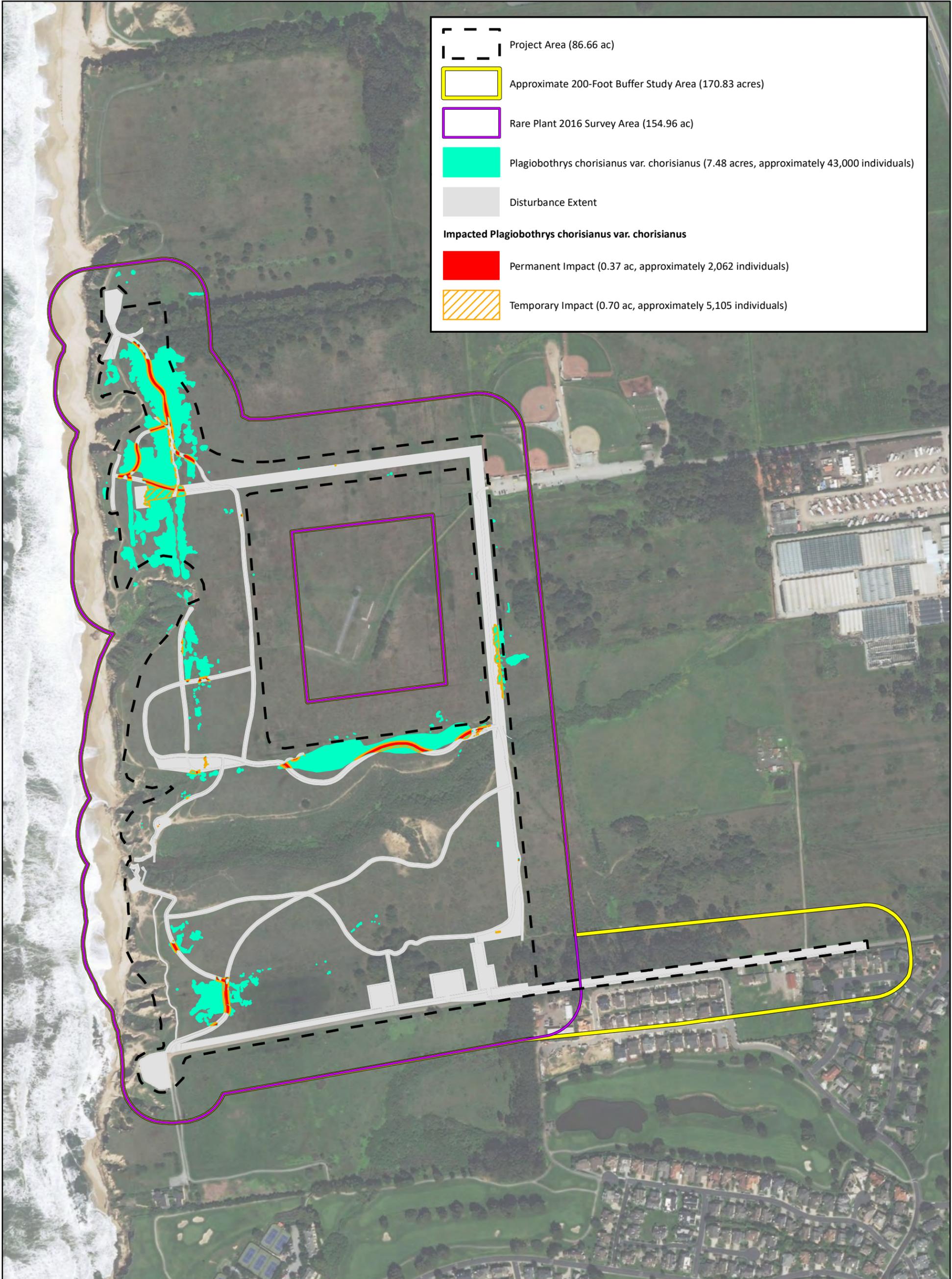
5.3.2 Special-Status and Non-Special-Status Nesting Birds

Nearly all the habitats within the Study Area have the potential to support nesting birds, and the LCP considers raptors unique species. In addition, the nests of most native birds are protected under the MBTA. Vegetation removal or other ground disturbance activities have the potential to directly or indirectly impact nesting birds. The following measures shall be implemented to avoid take of special-status birds and non-special-status nesting birds protected by the MBTA.

Non-breeding Season: September 1 through January 31

If Project work is scheduled to occur in between September and October, no pre-construction nesting bird surveys are required. However, if the Project schedule changes such that ground disturbance or removal of vegetation occurs outside of the non-breeding season work window, pre-construction surveys shall be required. If ground disturbance or removal of vegetation occurs between February 1 and June 30, pre-construction surveys should be performed by a qualified biologist no more than 14 days prior to commencement of such activities to determine the presence and location of nesting bird species. If ground disturbance or removal of vegetation occurs between July 1 and August 31, pre-construction surveys should be performed within 30 days prior to such activities. If active nests are present, establishment of temporary protective breeding season buffers will avoid direct mortality of these birds, nests, or young. The appropriate buffer

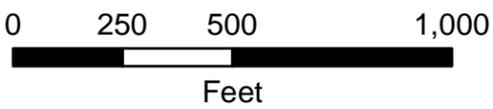
distance is dependent on the species, surrounding vegetation, and topography and should be determined by a qualified biologist as appropriate to prevent nest abandonment and direct mortality during construction.



Project Area (86.66 ac)
 Approximate 200-Foot Buffer Study Area (170.83 acres)
 Rare Plant 2016 Survey Area (154.96 ac)
 Plagiobothrys chorisianus var. *chorisianus* (7.48 acres, approximately 43,000 individuals)
 Disturbance Extent
Impacted *Plagiobothrys chorisianus* var. *chorisianus*
 Permanent Impact (0.37 ac, approximately 2,062 individuals)
 Temporary Impact (0.70 ac, approximately 5,105 individuals)

Figure 7. Rare Plant Impacts

Wavecrest Coastal Trail: Southern Alignment
Half Moon Bay, California



Map Prepared Date: 1/31/2020
 Map Prepared By: mweidenbach
 Base Source: Esri World Imagery January 2020
 Data Source(s): WRA

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5.3.3 *Bats*

Two special-status bat species, western red bat and hoary bat, may utilize trees within the Study Area for roosting during the non-hibernation season. If Project work is scheduled to occur in between September and October, no pre-construction maternity roosting surveys are required. However, if the Project schedule changes such that removal of vegetation occurs outside of this work window, the following measures shall be implemented to avoid take of special-status bat species.

- If project activities have the potential to disturb trees within the Project Area during the maternity roosting season (April 1 through August 31), then preconstruction surveys for bats shall take place. Surveys shall be conducted by a qualified biologist no less than 14 days prior to these activities, which have the potential to disturb bat roosting and foraging habitats within the Study Area. Ultrasonic acoustic surveys and/or other site appropriate survey method should be performed to determine the presence or absence of bats utilizing the Study Area as roosting or foraging habitat.
- If special-status bat species are detected during surveys, appropriate, species and roost specific mitigation measures will be developed. Such measures may include postponing removal of trees, snags, or structures until the end of the maternity roosting season or construction of species appropriate roosting habitat within the Study Area.
- Consultation with CDFW may be warranted to determine appropriate mitigation measures if roosts are disturbed or destroyed.
Trees may be removed outside of the maternity roosting season without performing preconstruction bat surveys.

5.3.4 *CRLF and SFGS*

California red-legged frog and SFGS are unlikely to inhabit the Study Area because of the absence of preferred habitat components and distance from suitable and/or occupied habitats. However, because of the suitability of nearby habitats, these species may on occasion disperse through the Study Area under certain conditions; therefore, they are discussed further. No suitable breeding habitat is found within the Study Area; however, CRLF may occasionally disperse through the Study Area. WRA recommends the following measures be implemented to avoid take of CRLF and SFGS.

- All ground disturbance activities shall be restricted to the dry season (April 15 through October 15) or when all habitats have dried and reduce potential for CRLF and SFGS to disperse through the Study Area.
- A qualified biologist shall survey the work site immediately before the onset of vegetation clearing or ground disturbance activities to verify if species are present and all habitats are dry. If CRLF are found and do not move out of the work area on their own, USFWS shall be contacted to determine if relocation is appropriate. In making this determination, the USFWS will consider if an appropriate relocation site exists. If the USFWS approves moving animals, a USFWS-approved biologist will be allowed sufficient time to move them from the work site before work activities begin. Any SFGS shall be allowed to leave the work area on their own, and shall be monitored as practical by the biologist to ensure they do not reenter the work area.

- Prior to the start of groundbreaking activities, all construction personnel will receive training on listed species and their habitats by a qualified biologist. The importance of these species and their habitat will be described to all employees as well as the minimization and avoidance measures that are to be implemented as part of the project. An educational brochure containing color photographs of all listed species in the work area will be distributed to all employees working within the Project Area. The original list of employees who attend the training sessions will be maintained by the contractor and be made available for review by the USFWS and the CDFW upon request.
- The contractor shall designate a person or employee to monitor on-site compliance with all minimization measures. The on-site monitor(s) will be on-site daily for the duration of the Project, including vegetation removal, grading and clean-up activities.
- All vehicles and equipment associated with work-activities will be parked or staged only within designated staging areas at the end of each workday or when not in use to minimize habitat disturbance and water quality degradation.
- Wildlife exclusion fencing would be erected and maintained around the project construction staging areas to prevent SFGS and CRLF from entering staging areas overnight.
- Installation of fencing will be performed under the supervision of a qualified biologist.
- No work shall occur within 48 hours following a rain event (over 0.25 inch in a 24-hour period). Following a rain event, a qualified biologist shall survey the work site immediately before reinitiation of ground disturbance activities to verify if species are present. If CRLF or SFGS are observed, then the steps previously described for the initial pre-construction survey shall be followed.
- Any erosion control materials used shall be made of tightly woven fiber netting or similar material to ensure that the CRLF and SFGS do not get trapped. This limitation will be communicated to the contractor. Plastic mono-filament netting (erosion control matting), rolled erosion control products or similar material shall not be used at the Project Area because CRLF, SFGS, and other species may become entangled or trapped in it.
- No trash shall be deposited on the site during construction activities. All trash shall be placed in trash receptacles with secure lids stored in vehicles and removed nightly from the Project Area.
- Any fueling and maintenance of equipment shall be conducted off-site and at least 50 feet from any wetland or designated ESHA.
- CRLF and SFGS may take refuge in cavity-like and den-like structures such as pipes and may enter stored pipes and become trapped. Therefore, all construction pipes, culverts, or similar structures that are stored at the site for one or more overnight periods will be either securely capped prior to storage or thoroughly inspected by the on-site monitor and/or the construction foreman/manager for these animals before the pipe is subsequently buried, capped, or otherwise used or moved in any way. It is also recommended these structures, if stored, are kept within the staging areas either in developed areas or within wildlife exclusion fencing. If CRLF are found and do not move out of the work area on their own, USFWS shall be contacted to determine if relocation is appropriate. In making this determination, the USFWS will consider if an appropriate relocation site exists. If the USFWS approves moving animals, a USFWS-approved biologist will be allowed sufficient time to move them from the work site before work activities begin. If SFGS is found, it shall be allowed to passively leave the work area on its own, as determined by the on-site monitor, unless in circumstances where the animal is determined to be trapped as discussed below.

- To prevent CRLF and SFGS from taking refuge and becoming trapped in cavity-like and den-like structures such as pipes and stored pipes, all construction pipes, culverts, or similar structures that are stored at the site for one or more overnight periods would be either securely capped prior to storage or thoroughly inspected by the on-site monitor and/or the construction foreman/manager for these animals before the pipe is subsequently buried, capped, or otherwise used or moved in any way.
- Furthermore, to prevent inadvertent entrapment of CRLF or SFGS during construction, the on-site monitor and/or construction foreman/manager shall ensure that all excavated, steep-walled holes or trenches more than one foot deep are completely covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks and inspected by the on-site biologist. Before such holes or trenches are filled, they will be thoroughly inspected for trapped animals by the on-site biologist and/or construction foreman/manager.
- If at any time a trapped CRLF or SFGS is discovered by the on-site biologist or anyone else, the animal shall be allowed to passively leave the work area on its own, as determined by the onsite biologist. If a CRLF or SFGS is trapped, only a USFWS-approved biologist shall move the individual under the direction of USFWS and CDFW. The biologist will also report these findings, as required, to appropriate the agencies.

5.4 Other Local Policies

5.4.1 Heritage Trees

In general, removal or pruning more than one third of the branch or root system of a heritage is a violation of the City's heritage tree ordinance and would be considered a significant impact under CEQA. Parking lot construction will result in removal of 21 trees. Nine of these trees to be removed are designated as potential heritage trees. To reduce this impact to a less than significant level, any removal or pruning beyond one third amount, will require a permit from the City Manager and/or the City Council. Permit conditions typically include 1:1 replacement of the heritage tree at a minimum 24-inch box size. The Project includes planting of 9 replacement trees to compensate for the heritage tree removal.

In addition, any grading, excavation, demolition, or other construction activity conducted inside the dripline of a heritage tree requires submittal of a tree protection plan for review and approval by the City Manager prior to issuance of any grading or construction permit.

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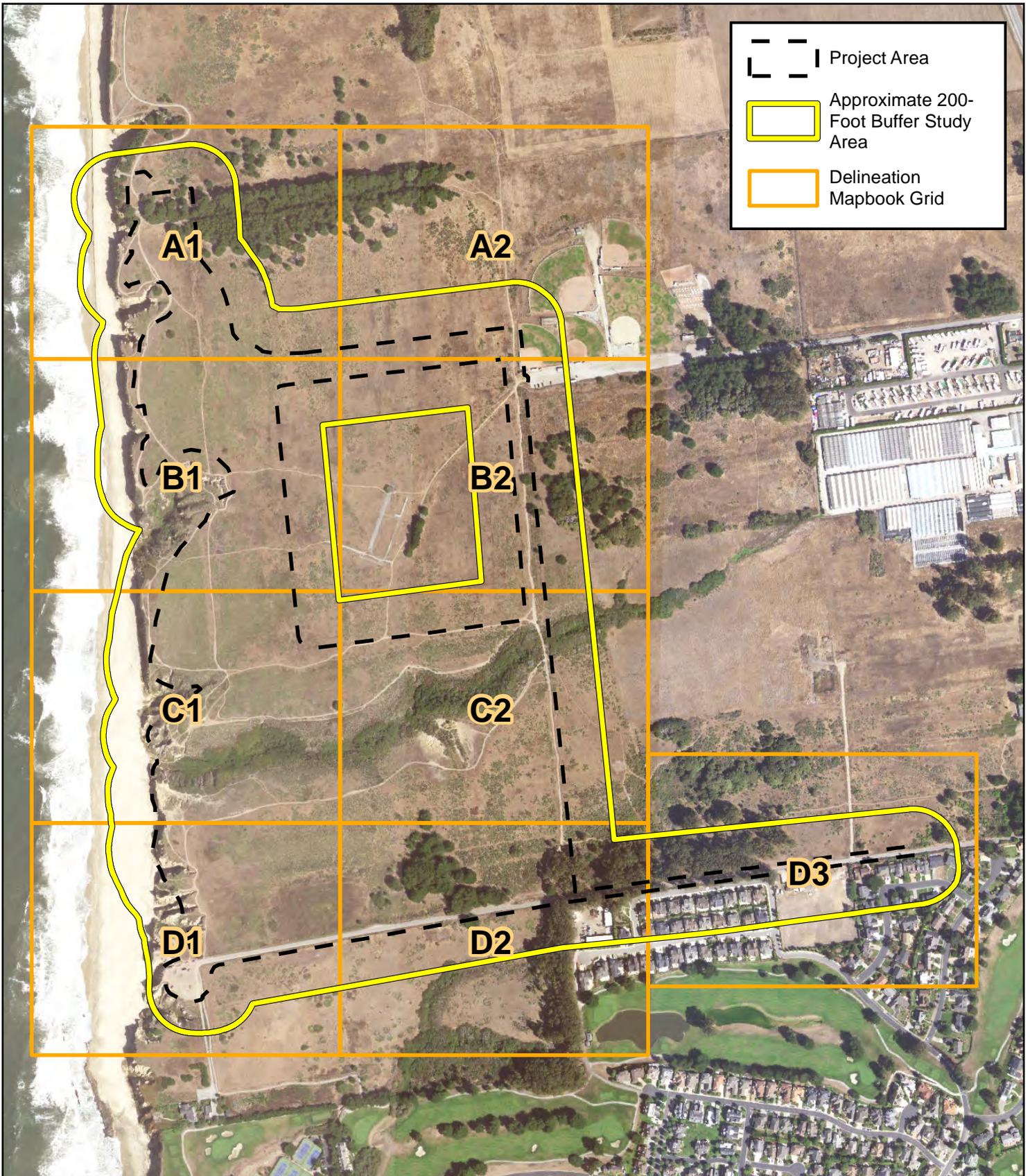
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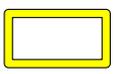
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APPENDIX A
PRELIMINARY JURISDICTIONAL DETERMINATION MAP

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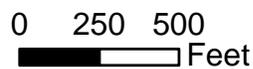


 Project Area
 Approximate 200-Foot Buffer Study Area
 Delineation Mapbook Grid

Appendix A. Delineation Mapbook Grid



1 inch = 600 feet



Wavecrest Coastal Trail: Southern Alignment
Half Moon Bay, California



Map Prepared Date: 2/4/2020
 Map Prepared By: mweidenbach
 Base Source: NAIP 2018
 Data Source(s): WRA

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Appendix A. Grid - A1



Preliminary Jurisdictional Determination

Wavecrest Coastal Trail:
Southern Alignment
Half Moon Bay, California

- Project Area (86.66 ac)
- Approximate 200-Foot Buffer Study Area (170.83 ac)
- Sample Points
- Contours - 1' Interval (NAVD88 Vertical Datum)
- Control Points

Wetlands

Corps/RWQCB/CCC Jurisdictional Features

- On-Site Seasonal Wetlands (1.73 ac)
- Off-Site Seasonal Wetlands (1.73 ac)

CCC Jurisdictional Features

- On-Site Coastal Seasonal Wetland (0.24 ac)
- Off-Site Coastal Seasonal Wetland (0.45 ac)

Non-Wetland Waters

Corps/RWQCB/CCC Jurisdictional Features

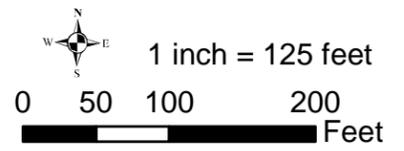
- Ocean - To HTL (observed in field) (7.98 ac)

Corps

- On-Site Stream - To OHWM (0.35 ac, 1,362 linear ft)
- Off-Site Stream - To OHWM (0.34 ac, 871 linear ft)

RWQCB/CCC/CDFW Jurisdictional Features

- On-Site Stream - To TOB (1.89 ac, 1,362 linear ft)
- Off-Site Stream - To TOB (2.80 ac, 871 linear ft)

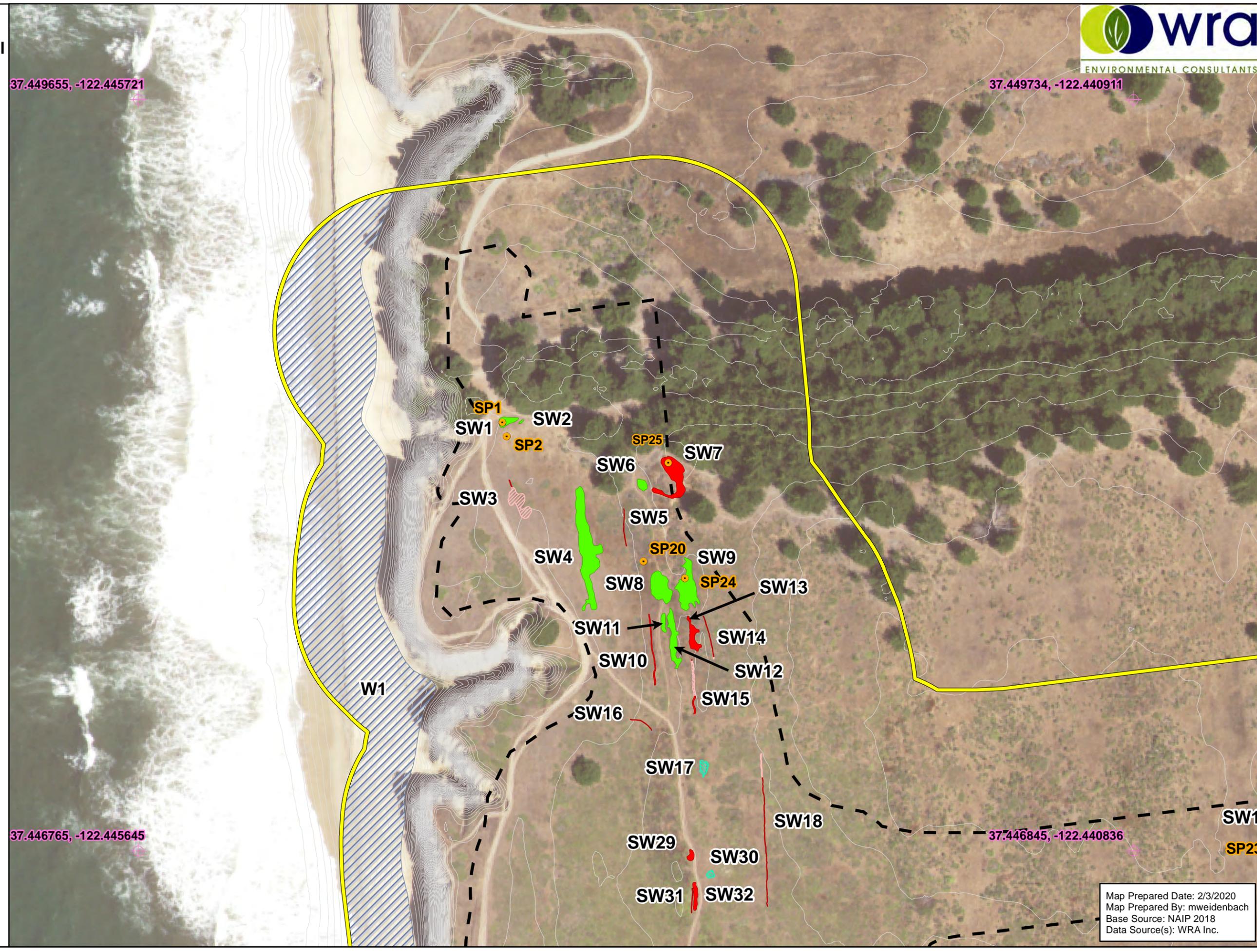


37.449655, -122.445721

37.449734, -122.440911

37.446765, -122.445645

37.446845, -122.440836



Map Prepared Date: 2/3/2020
Map Prepared By: mweidenbach
Base Source: NAIP 2018
Data Source(s): WRA Inc.

Appendix A. Grid - A2



ENVIRONMENTAL CONSULTANTS

Preliminary Jurisdictional Determination

Wavecrest Coastal Trail:
Southern Alignment
Half Moon Bay, California

- Project Area (86.66 ac)
- Approximate 200-Foot Buffer Study Area (170.83 ac)
- Sample Points
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- Control Points

Wetlands

Corps/RWQCB/CCC Jurisdictional Features

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CCC Jurisdictional Features

- On-Site Coastal Seasonal Wetland (0.24 ac)
- Off-Site Coastal Seasonal Wetland (0.45 ac)

Non-Wetland Waters

Corps/RWQCB/CCC Jurisdictional Features

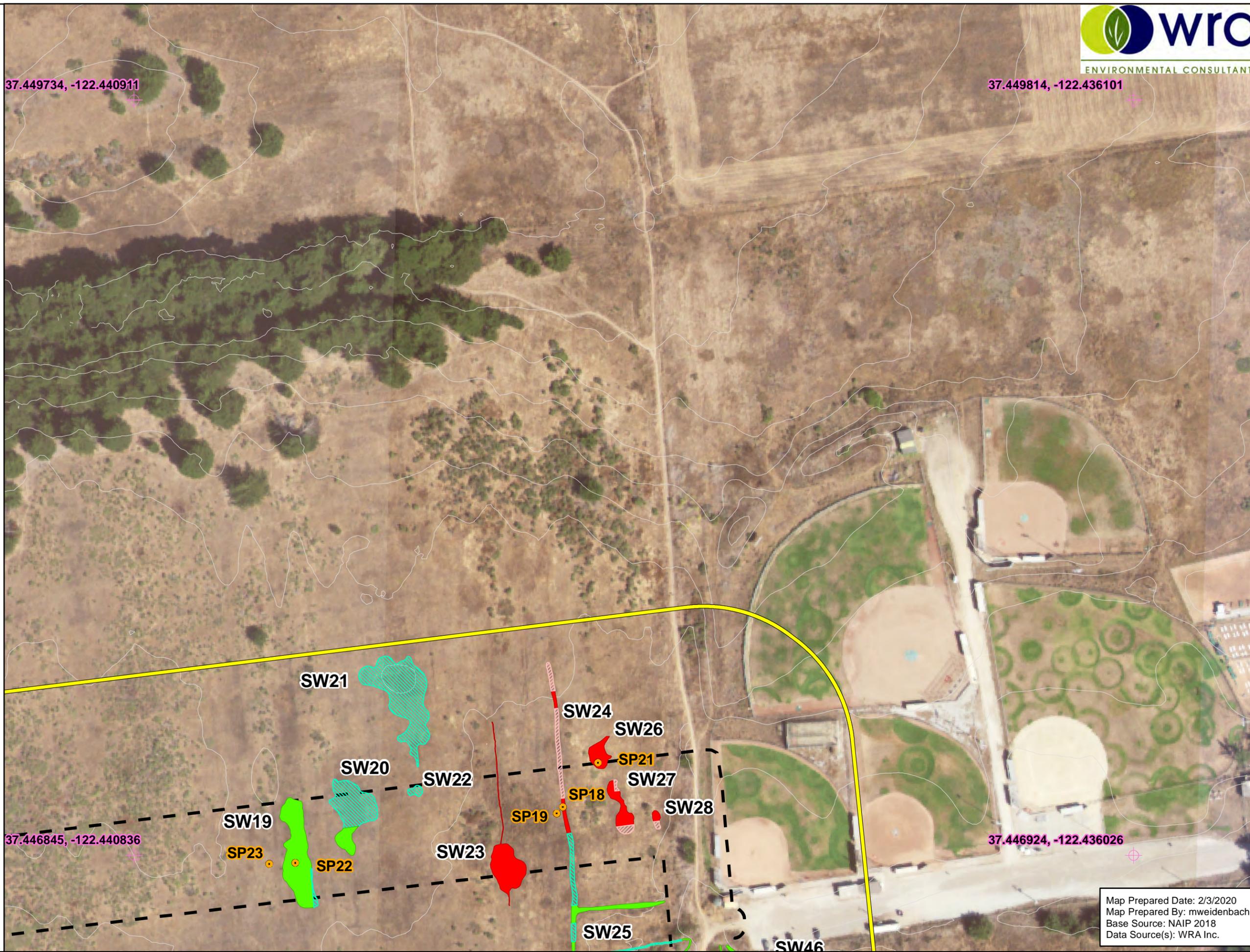
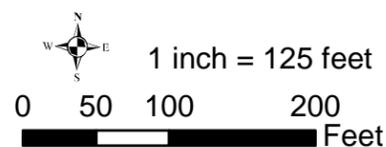
- Ocean - To HTL (observed in field) (7.98 ac)

Corps

- On-Site Stream - To OHWM (0.35 ac, 1,362 linear ft)
- Off-Site Stream - To OHWM (0.34 ac, 871 linear ft)

RWQCB/CCC/CDFW Jurisdictional Features

- On-Site Stream - To TOB (1.89 ac, 1,362 linear ft)
- Off-Site Stream - To TOB (2.80 ac, 871 linear ft)



Map Prepared Date: 2/3/2020
Map Prepared By: mweidenbach
Base Source: NAIP 2018
Data Source(s): WRA Inc.

Appendix A. Grid - B1



Preliminary Jurisdictional Determination

Wavecrest Coastal Trail:
Southern Alignment
Half Moon Bay, California

- Project Area (86.66 ac)
- Approximate 200-Foot Buffer Study Area (170.83 ac)
- Sample Points
- Contours - 1' Interval (NAVD88 Vertical Datum)
- Control Points

Wetlands

Corps/RWQCB/CCC Jurisdictional Features

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CCC Jurisdictional Features

- On-Site Coastal Seasonal Wetland (0.24 ac)
- Off-Site Coastal Seasonal Wetland (0.45 ac)

Non-Wetland Waters

Corps/RWQCB/CCC Jurisdictional Features

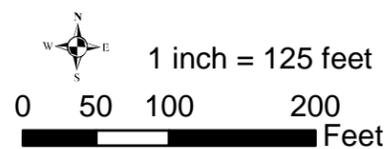
- Ocean - To HTL (observed in field) (7.98 ac)

Corps

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RWQCB/CCC/CDFW Jurisdictional Features

- On-Site Stream - To TOB (1.89 ac, 1,362 linear ft)
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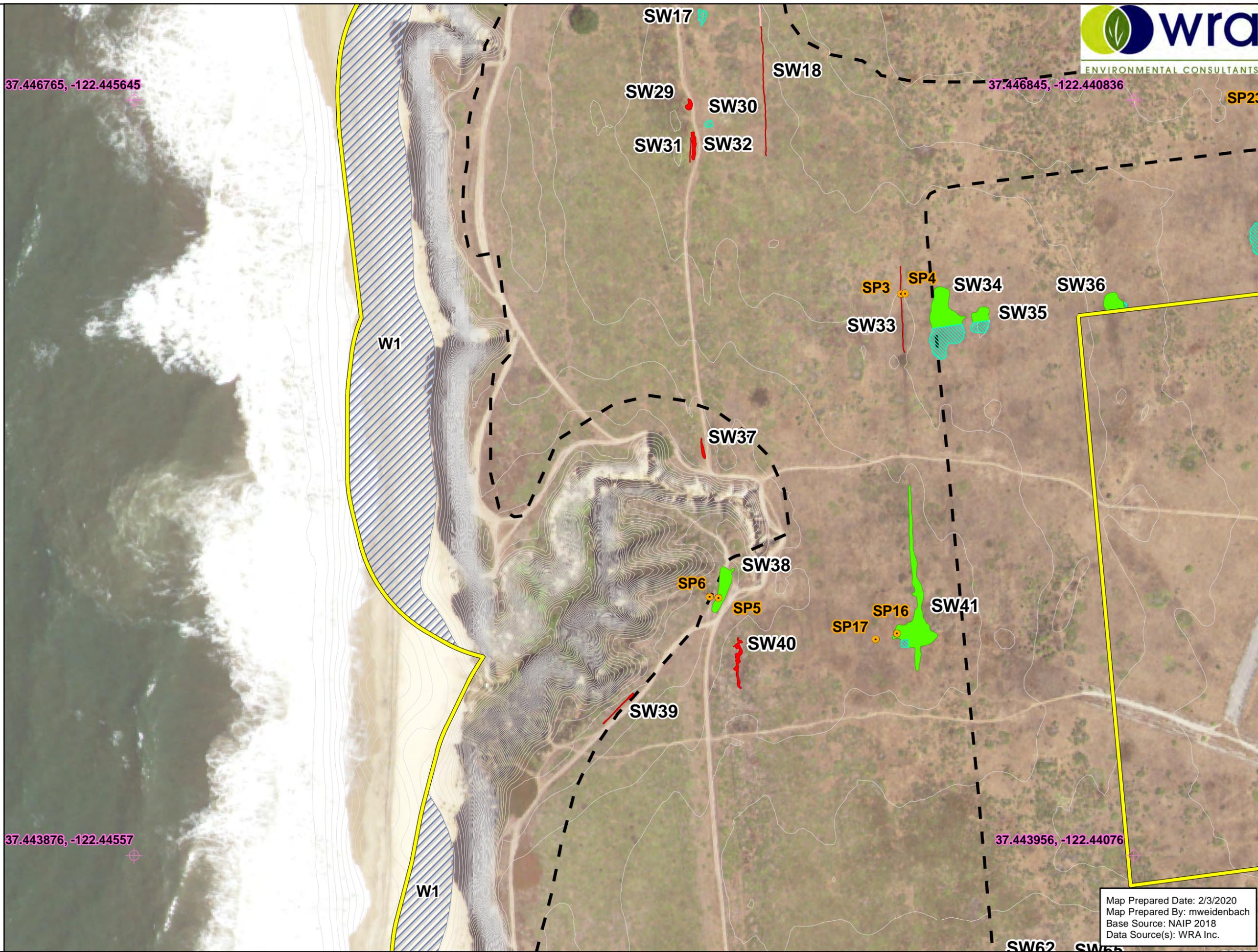


37.446765, -122.445645

37.443876, -122.44557

37.446845, -122.440836

37.443956, -122.44076



Map Prepared Date: 2/3/2020
Map Prepared By: mweidenbach
Base Source: NAIP 2018
Data Source(s): WRA Inc.

Appendix A. Grid - B2



Preliminary Jurisdictional Determination

Wavecrest Coastal Trail:
Southern Alignment
Half Moon Bay, California

- Project Area (86.66 ac)
- Approximate 200-Foot Buffer Study Area (170.83 ac)
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- Control Points

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CCC Jurisdictional Features

- On-Site Coastal Seasonal Wetland (0.24 ac)
- Off-Site Coastal Seasonal Wetland (0.45 ac)

Non-Wetland Waters

Corps/RWQCB/CCC Jurisdictional Features

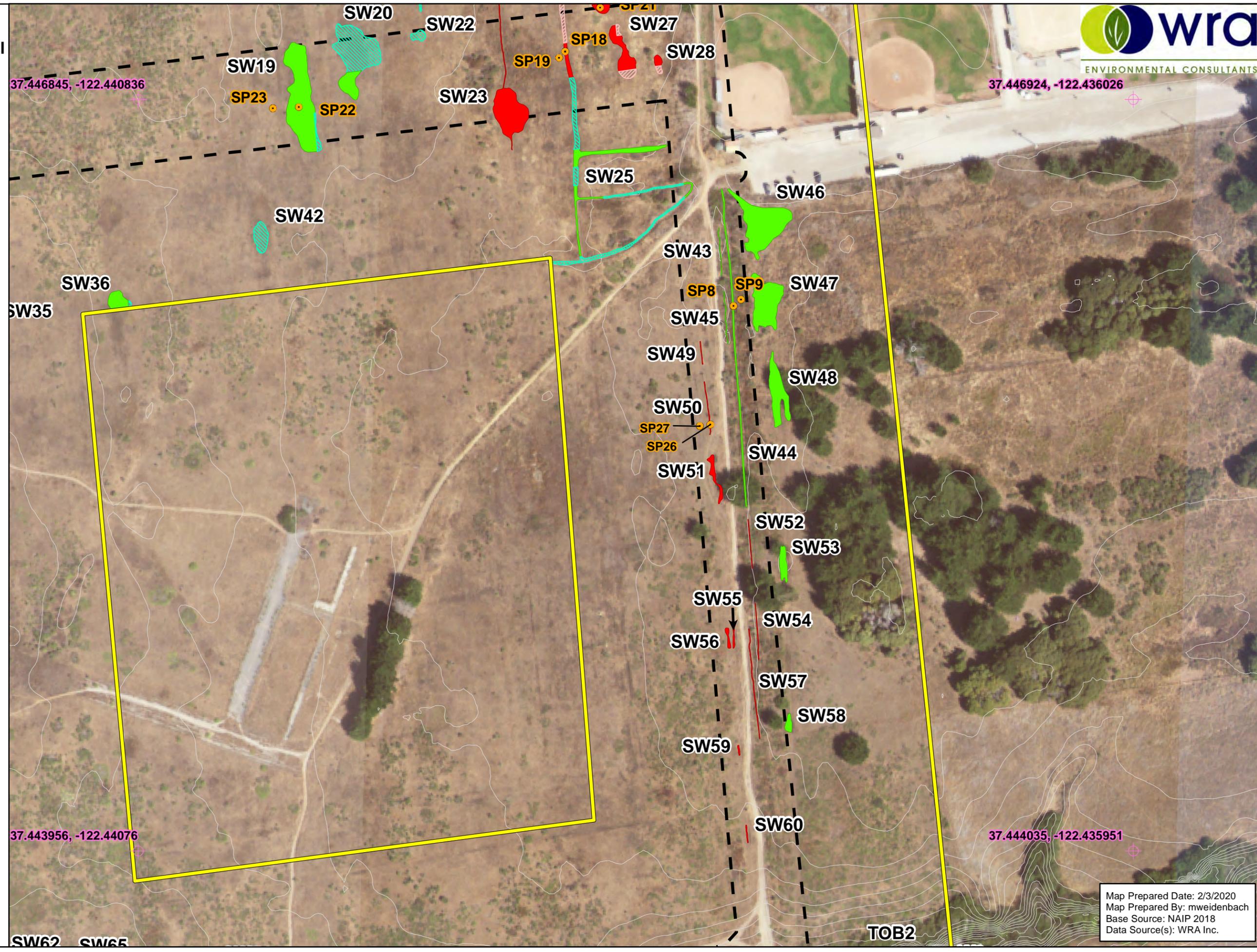
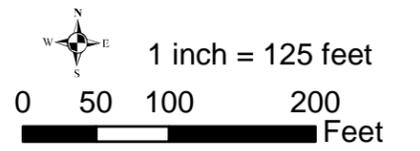
- Ocean - To HTL (observed in field) (7.98 ac)

Corps

- On-Site Stream - To OHWM (0.35 ac, 1,362 linear ft)
- Off-Site Stream - To OHWM (0.34 ac, 871 linear ft)

RWQCB/CCC/CDFW Jurisdictional Features

- On-Site Stream - To TOB (1.89 ac, 1,362 linear ft)
- Off-Site Stream - To TOB (2.80 ac, 871 linear ft)



Map Prepared Date: 2/3/2020
Map Prepared By: mweidenbach
Base Source: NAIP 2018
Data Source(s): WRA Inc.

Appendix A. Grid - C1



Preliminary Jurisdictional Determination

Wavecrest Coastal Trail:
Southern Alignment
Half Moon Bay, California

- Project Area (86.66 ac)
- Approximate 200-Foot Buffer Study Area (170.83 ac)
- Sample Points
- Contours - 1' Interval (NAVD88 Vertical Datum)
- Control Points

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- On-Site Seasonal Wetlands (1.73 ac)
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CCC Jurisdictional Features

- On-Site Coastal Seasonal Wetland (0.24 ac)
- Off-Site Coastal Seasonal Wetland (0.45 ac)

Non-Wetland Waters

Corps/RWQCB/CCC Jurisdictional Features

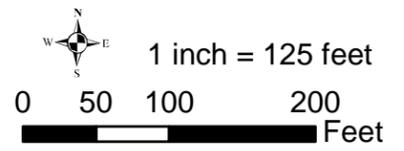
- Ocean - To HTL (observed in field) (7.98 ac)

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- On-Site Stream - To OHWM (0.35 ac, 1,362 linear ft)
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RWQCB/CCC/CDFW Jurisdictional Features

- On-Site Stream - To TOB (1.89 ac, 1,362 linear ft)
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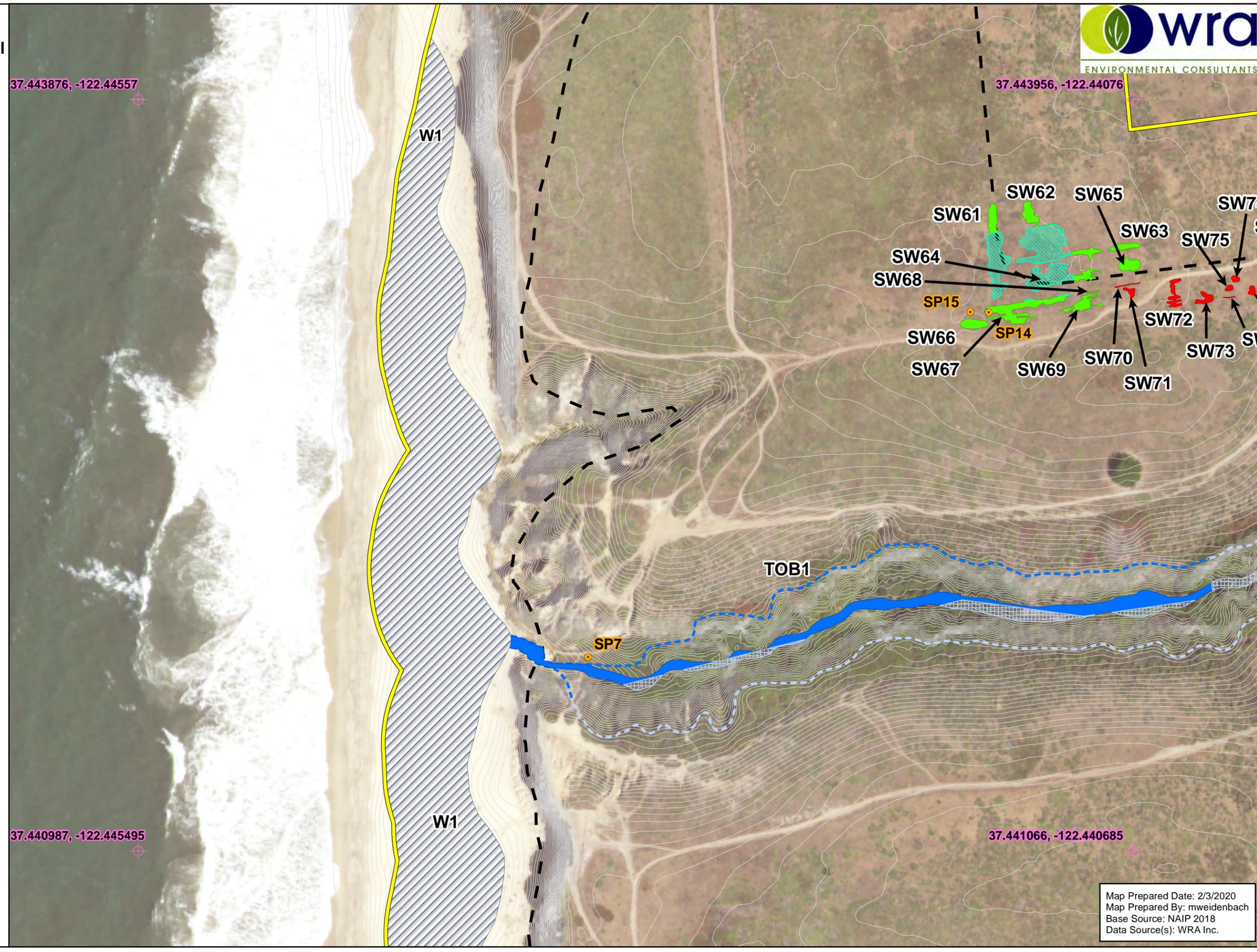


37.443876, -122.44557

37.443956, -122.44076

37.440987, -122.445495

37.441066, -122.440685



Map Prepared Date: 2/3/2020
Map Prepared By: mweidenbach
Base Source: NAIP 2018
Data Source(s): WRA Inc.

Appendix A. Grid - C2

Preliminary Jurisdictional Determination

Wavecrest Coastal Trail:
Southern Alignment
Half Moon Bay, California

Project Area (86.66 ac)

Approximate 200-Foot Buffer Study Area (170.83 ac)

Sample Points

Contours - 1' Interval (NAVD88 Vertical Datum)

Control Points

Wetlands

Corps/RWQCB/CCC Jurisdictional Features

On-Site Seasonal Wetlands (1.73 ac)

Off-Site Seasonal Wetlands (1.73 ac)

CCC Jurisdictional Features

On-Site Coastal Seasonal Wetland (0.24 ac)

Off-Site Coastal Seasonal Wetland (0.45 ac)

Non-Wetland Waters

Corps/RWQCB/CCC Jurisdictional Features

Ocean - To HTL (observed in field) (7.98 ac)

Corps

On-Site Stream - To OHWM (0.35 ac, 1,362 linear ft)

Off-Site Stream - To OHWM (0.34 ac, 871 linear ft)

RWQCB/CCC/CDFW Jurisdictional Features

On-Site Stream - To TOB (1.89 ac, 1,362 linear ft)

Off-Site Stream - To TOB (2.80 ac, 871 linear ft)

1 inch = 125 feet

0 50 100 200 Feet



ENVIRONMENTAL CONSULTANTS



Map Prepared Date: 2/3/2020
Map Prepared By: mweidenbach
Base Source: NAIP 2018
Data Source(s): WRA Inc.

Appendix A. Grid - D1

Preliminary Jurisdictional Determination

Wavecrest Coastal Trail:
Southern Alignment
Half Moon Bay, California

- Project Area (86.66 ac)
- Approximate 200-Foot Buffer Study Area (170.83 ac)
- Sample Points
- Contours - 1' Interval (NAVD88 Vertical Datum)
- Control Points

Wetlands

Corps/RWQCB/CCC Jurisdictional Features

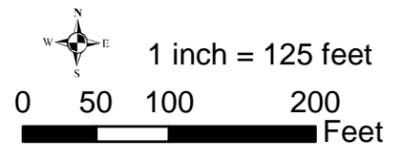
- On-Site Seasonal Wetlands (1.73 ac)
- Off-Site Seasonal Wetlands (1.73 ac)

- #### CCC Jurisdictional Features
- On-Site Coastal Seasonal Wetland (0.24 ac)
 - Off-Site Coastal Seasonal Wetland (0.45 ac)

- #### Non-Wetland Waters
- #### Corps/RWQCB/CCC Jurisdictional Features
- Ocean - To HTL (observed in field) (7.98 ac)

- #### Corps
- On-Site Stream - To OHWM (0.35 ac, 1,362 linear ft)
 - Off-Site Stream - To OHWM (0.34 ac, 871 linear ft)

- #### RWQCB/CCC/CDFW Jurisdictional Features
- On-Site Stream - To TOB (1.89 ac, 1,362 linear ft)
 - Off-Site Stream - To TOB (2.80 ac, 871 linear ft)

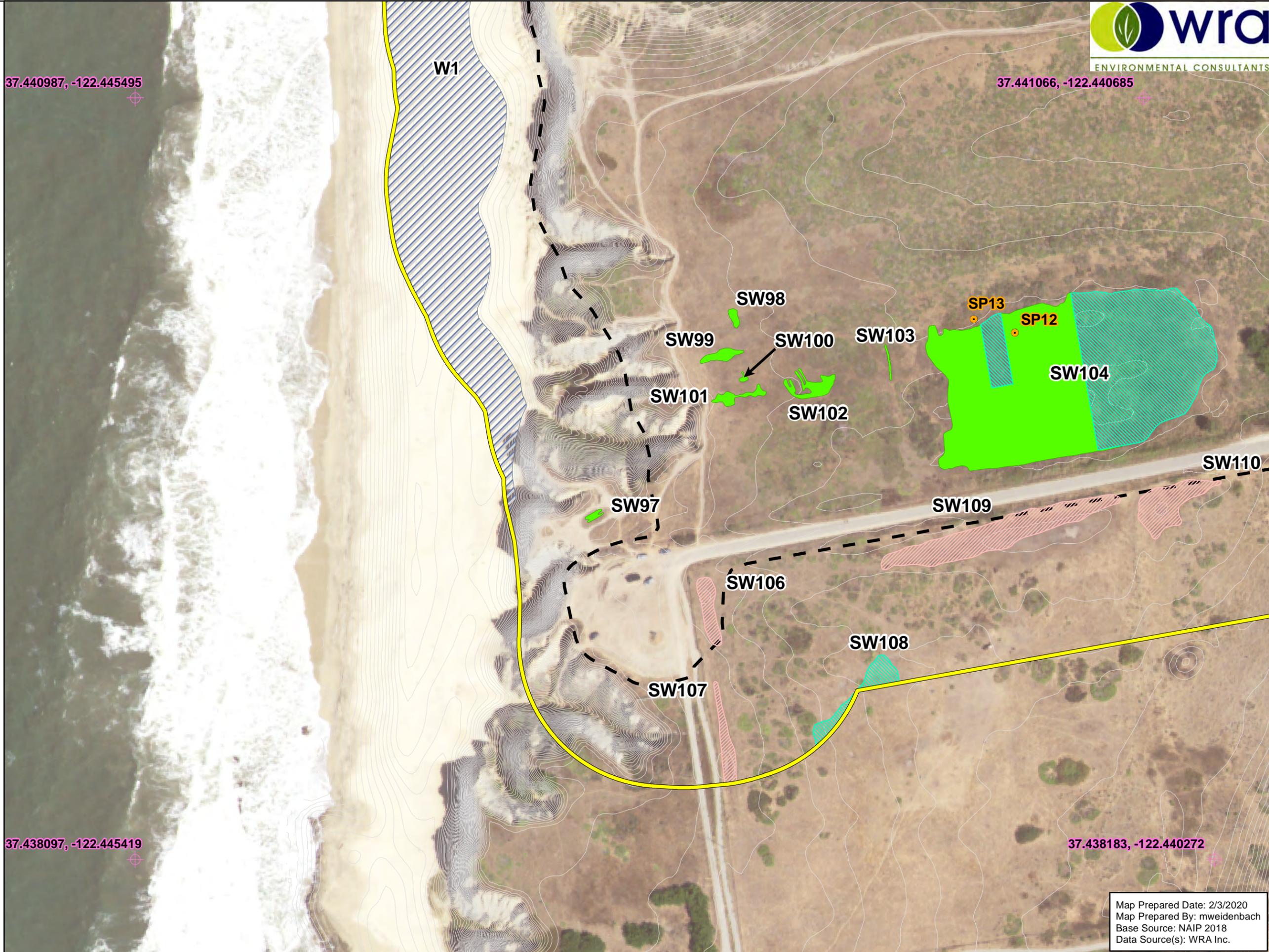


37.440987, -122.445495

37.441066, -122.440685

37.438097, -122.445419

37.438183, -122.440272



Map Prepared Date: 2/3/2020
Map Prepared By: mweidenbach
Base Source: NAIP 2018
Data Source(s): WRA Inc.

Appendix A. Grid - D2

Preliminary Jurisdictional Determination

Wavecrest Coastal Trail:
Southern Alignment
Half Moon Bay, California

- Project Area (86.66 ac)
- Approximate 200-Foot Buffer Study Area (170.83 ac)
- Sample Points
- Contours - 1' Interval (NAVD88 Vertical Datum)
- Control Points

Wetlands

Corps/RWQCB/CCC Jurisdictional Features

- On-Site Seasonal Wetlands (1.73 ac)
- Off-Site Seasonal Wetlands (1.73 ac)

CCC Jurisdictional Features

- On-Site Coastal Seasonal Wetland (0.24 ac)
- Off-Site Coastal Seasonal Wetland (0.45 ac)

Non-Wetland Waters

Corps/RWQCB/CCC Jurisdictional Features

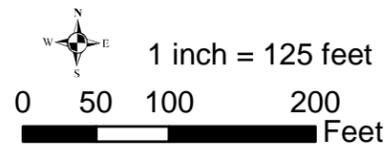
- Ocean - To HTL (observed in field) (7.98 ac)

Corps

- On-Site Stream - To OHWM (0.35 ac, 1,362 linear ft)
- Off-Site Stream - To OHWM (0.34 ac, 871 linear ft)

RWQCB/CCC/CDFW Jurisdictional Features

- On-Site Stream - To TOB (1.89 ac, 1,362 linear ft)
- Off-Site Stream - To TOB (2.80 ac, 871 linear ft)



Map Prepared Date: 2/3/2020
Map Prepared By: mweidenbach
Base Source: NAIP 2018
Data Source(s): WRA Inc.

Appendix A. Grid - D3

Preliminary Jurisdictional Determination

Wavecrest Coastal Trail:
Southern Alignment
Half Moon Bay, California

- Project Area (86.66 ac)
- Approximate 200-Foot Buffer Study Area (170.83 ac)
- Sample Points
- Contours - 1' Interval (NAVD88 Vertical Datum)
- Control Points

Wetlands

Corps/RWQCB/CCC Jurisdictional Features

- On-Site Seasonal Wetlands (1.73 ac)
- Off-Site Seasonal Wetlands (1.73 ac)

CCC Jurisdictional Features

- On-Site Coastal Seasonal Wetland (0.24 ac)
- Off-Site Coastal Seasonal Wetland (0.45 ac)

Non-Wetland Waters

Corps/RWQCB/CCC Jurisdictional Features

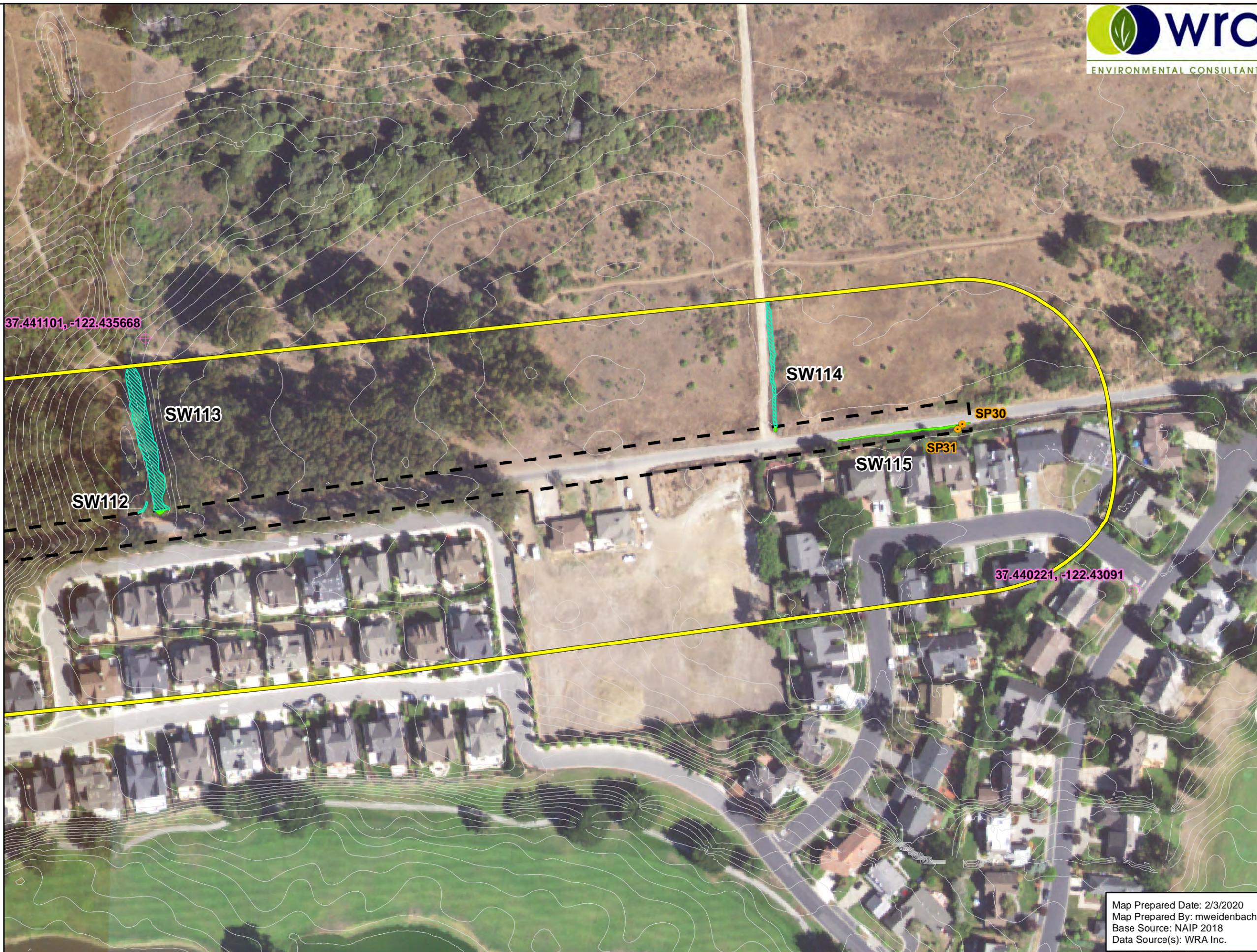
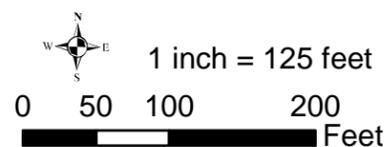
- Ocean - To HTL (observed in field) (7.98 ac)

Corps

- On-Site Stream - To OHWM (0.35 ac, 1,362 linear ft)
- Off-Site Stream - To OHWM (0.34 ac, 871 linear ft)

RWQCB/CCC/CDFW Jurisdictional Features

- On-Site Stream - To TOB (1.89 ac, 1,362 linear ft)
- Off-Site Stream - To TOB (2.80 ac, 871 linear ft)



Map Prepared Date: 2/3/2020
Map Prepared By: mweidenbach
Base Source: NAIP 2018
Data Source(s): WRA Inc.

APPENDIX B

CORPS JURISDICTIONAL DELINEATION DATA SHEETS

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WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Wavecrest Southern Alignment City/County: Half Moon Bay Sampling Date: 1-26-16
 Applicant/Owner: Coastside Land Trust State: CA Sampling Point: SP 1
 Investigator(s): Stephanie Freed, David Zwick Section, Township, Range: Section 5, Township 65, Range 5w
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 0-2
 Subregion (LRR): Mediterranean California LRRC Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Watsonville Sandy Loam NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil , or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: Sample point located within wetland depression on a coastal field and was inundated during site visit. The sample point was observed with indicators of hydrophytic vegetation, hydric soils, and wetland hydrology, including inundation up to 16" deep. Wetland boundary determined based on grade break, shift from Rumex acetocella to Rumex crispus and Cyperus eragrostis, and presence of surface water. Sample point taken within 18 hours after last rain event. Sample point paired with SP 2.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
Herb Stratum (Plot size: <u>5'x 10'</u>)				
1. <u>Cyperus eragrostis</u>	<u>5</u>	<u>Y</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
2. <u>Festuca perennis</u>	<u>3</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Rumex crispus</u>	<u>2</u>	<u>N</u>	<u>FAC</u>	
4. <u>Mentha pulegium</u>	<u>1</u>	<u>N</u>	<u>OBL</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>11</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>89</u> % Cover of Biotic Crust _____				

Remarks:
 Sample point is dominated by FAC & FACW species and was determined to contain hydrophytic vegetation, as it meets the dominance test.

SOIL

Sampling Point: SP 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	7.5YR 2.5/1						Silt Loam	
4-8	7.5YR 2.5/1						Silt Loam	
8-14	2.5YR 2.5/1	60	5Y 5/2	25	D	M	Clay	
			7.5YR 4/6	5	C	M	Clay	

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

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR C)
- 1 cm Muck (A9) (LRR D)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR C)
- 2 cm Muck (A10) (LRR B)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

While no hydric soil indicators were observed, this sample point contains naturally problematic seasonally ponded soils. Sample point occurs in a seasonally ponded depression with a restrictive clay layer and lacks hydric soil indicators due to limited saturation depth and saline conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No Depth (inches): 16"
 Water Table Present? Yes No Depth (inches): 0"
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): 0"

Wetland Hydrology Present? Yes No

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

Remarks:

Wetland hydrology indicators observed at the sample point included surface water (16" deep) and sample point meets secondary indicator D5, FAC-Neutral test.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Wavecrest Southern Alignment City/County: Half Moon Bay Sampling Date: 1-26-16
 Applicant/Owner: Coastside Land Trust State: CA Sampling Point: SP 2
 Investigator(s): Stephanie Freed, David Zwick Section, Township, Range: Section 5, Township 65, Range 5w
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0
 Subregion (LRR): Mediterranean California LRRC Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Watsonville Sandy Loam NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Sample point located within upland coastal field. The sample point did not meet wetland indicators for hydrophytic vegetation, hydric soils or hydrology. Sample point taken within 48 hours after last rain event. Sample point paired with SP 1.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>10' x 10'</u>)				
1. <u>Festuca perennis</u>	<u>35</u>	<u>Y</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain)
2. <u>Rumex acetosella</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>	
3. <u>Geranium dissectum</u>	<u>15</u>	<u>N</u>	<u>UPL</u>	
4. <u>Holcus lanatus</u>	<u>15</u>	<u>N</u>	<u>FAC</u>	
5. <u>Helminthotheca echioides</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
6. <u>Carduus pycnocephalus</u>	<u>2</u>	<u>N</u>	<u>UPL</u>	
7. <u>Sonchus asper</u>	<u>1</u>	<u>N</u>	<u>FAC</u>	
8. <u>Lysimachia arvensis</u>	<u>1</u>	<u>N</u>	<u>FAC</u>	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____		% Cover of Biotic Crust _____		

Remarks:
 Sample point is dominated by FAC and FACU species and does not meet any hydrophytic vegetation indicators.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Wavecrest Southern Alignment City/County: Half Moon Bay Sampling Date: 1-26-16
 Applicant/Owner: Coastside Land Trust State: CA Sampling Point: SP 3
 Investigator(s): Stephanie Freed, David Zwick Section, Township, Range: Section 5, Township 65, Range 5w
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 0-2
 Subregion (LRR): Mediterranean California LRRC Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Watsonville Sandy Loam NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Sample point located within upland swale and was inundated during site visit. The sample point did not meet indicators for hydrophytic vegetation, but met wetland indicators for hydric soils and wetland hydrology including inundation up to 2" deep. Sample point taken 48 hours after last rain event. Sample point paired with SP 4.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species <u>40</u> x 2 = <u>80</u> FAC species <u>17</u> x 3 = <u>51</u> FACU species <u>35</u> x 4 = <u>140</u> UPL species <u>3</u> x 5 = <u>15</u> Column Totals: <u>95</u> (A) <u>286</u> (B) Prevalence Index = B/A = <u>3.01</u>
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
Herb Stratum (Plot size: <u>1' x 10'</u>)				
1. <u>Polypogon monspeliensis</u>	<u>40</u>	<u>Y</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Rumex acetosella</u>	<u>35</u>	<u>Y</u>	<u>FACU</u>	
3. <u>Holcus lanatus</u>	<u>15</u>	<u>N</u>	<u>FAC</u>	
4. <u>Carduus pycnocephalus</u>	<u>3</u>	<u>N</u>	<u>UPL</u>	
5. <u>Rumex crispus</u>	<u>2</u>	<u>N</u>	<u>FAC</u>	
6. <u>Geranium dissectum</u>	<u>+</u>	<u>N</u>	<u>UPL</u>	
7. <u>Vicia sativa</u>	<u>+</u>	<u>N</u>	<u>FACU</u>	
8. _____	_____	_____	_____	
<u>95</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>5</u> % Cover of Biotic Crust _____				

Remarks:
 Sample point is dominated by FACW and FACU species and does not meet any hydrophytic vegetation indicators. For absolute % cover. "+" indicates a trace occurrence.

SOIL

Sampling Point: SP 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	7.5YR 2.5/1	100					Silt Clay	
4-8	2.5Y 2.5/1	60	5Y 5/2	35	D	M	Clay	Mottled
			7.5YR 4/6	5	C	M	Clay	
8-14	7.5YR 2.5/1	100					Clay Loam	

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

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR C)
- 1 cm Muck (A9) (LRR D)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR C)
- 2 cm Muck (A10) (LRR B)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

Sample point meets hydric soil indicator for depleted dark surface (F7).

HYDROLOGY

Wetland Hydrology Indicators:

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) (Nonriverine)
- Sediment Deposits (B2) (Nonriverine)
- Drift Deposits (B3) (Nonriverine)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) (Riverine)
- Sediment Deposits (B2) (Riverine)
- Drift Deposits (B3) (Riverine)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No Depth (inches): 2"
 Water Table Present? Yes No Depth (inches): 0"
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): 0"

Wetland Hydrology Present? Yes No

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

Remarks:

Wetland hydrology indicators observed at the sample point included surface water 2" deep and biotic crust.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Wavecrest Southern Alignment City/County: Half Moon Bay Sampling Date: 1-26-16
 Applicant/Owner: Coastside Land Trust State: CA Sampling Point: SP 4
 Investigator(s): Stephanie Freed, David Zwick Section, Township, Range: Section 5, Township 65, Range 5w
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0
 Subregion (LRR): Mediterranean California LRRC Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Watsonville Sandy Loam NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Sample point located within upland swale (SP 3). The sample point did not meet indicators of hydrophytic vegetation, hydric soils, or wetland hydrology. Sample point taken 48 hours after last rain event.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>10' x 10'</u>)				
1. <u>Rumex acetosella</u>	<u>35</u>	<u>Y</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
2. <u>Holcus lanatus</u>	<u>33</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Baccharis pilularis</u>	<u>25</u>	<u>Y</u>	<u>UPL</u>	
4. <u>Carduus pycnocephalus</u>	<u>5</u>	<u>N</u>	<u>UPL</u>	
5. <u>Geranium dissectum</u>	<u>2</u>	<u>N</u>	<u>UPL</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				

Remarks:
 Sample point is dominated by FAC, FACU, and UPL species and does not meet any hydrophytic vegetation indicators.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Wavecrest Southern Alignment City/County: Half Moon Bay Sampling Date: 1-26-16
 Applicant/Owner: Coastside Land Trust State: CA Sampling Point: SP 5
 Investigator(s): Stephanie Freed, David Zwick Section, Township, Range: Section 5, Township 65, Range 5W
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 0-2
 Subregion (LRR): Mediterranean California LRRC Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Watsonville Sandy Loam NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil , or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: Sample point located within wetland depression on a coastal field and was inundated during site visit. The sample point met wetland indicators for hydrophytic vegetation, hydric soils, and wetland hydrology including inundation up to 2" deep. The wetland boundary was determined based on grade break, shift from Rumex acetocella to Eleocharis macrostachya and Juncus phaeocephalus, and presence of surface water. Sample point taken 48 hours after last rain event. Sample point paired with SP 6.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>10' x 5'</u>)				
1. <u>Eleocharis macrostachya</u>	<u>30</u>	<u>Y</u>	<u>OBL</u>	
2. <u>Juncus phaeocephalus</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>	
3. <u>Rumex crispis</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
4. <u>Cyperus eragrostis</u>	<u>3</u>	<u>N</u>	<u>FACW</u>	
5. <u>Mentha pulegium</u>	<u>1</u>	<u>N</u>	<u>OBL</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>61</u> % Cover of Biotic Crust _____				
Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)				
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____				

Remarks:
 Sample point is dominated by OBL & FACW species and was determined to contain hydrophytic vegetation, as it meets the dominance test.

SOIL

Sampling Point: SP 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	7.5YR 2.5/1	100					Silty Clay	Saturated
4-8	2.5Y 2.5/1	60	5Y 5/2	35	D	M	Clay	
			7.5YR 4/6	5	C	M	Clay	
8-14	7.5YR 2.5/1	100					Clay Loam	

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

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR C)
- 1 cm Muck (A9) (LRR D)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR C)
- 2 cm Muck (A10) (LRR B)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

While no hydric soil indicators were observed, this sample point contains naturally problematic seasonally ponded soils. Sample point occurs in a seasonally ponded depression with a restrictive clay layer and lacks hydric soil indicators due to limited saturation depth and saline conditions.

HYDROLOGY

Wetland Hydrology Indicators:

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) (Nonriverine)
- Sediment Deposits (B2) (Nonriverine)
- Drift Deposits (B3) (Nonriverine)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) (Riverine)
- Sediment Deposits (B2) (Riverine)
- Drift Deposits (B3) (Riverine)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No Depth (inches): 2"
 Water Table Present? Yes No Depth (inches): 0"
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): 0"

Wetland Hydrology Present? Yes No

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

Remarks:

Wetland hydrology indicators observed at the sample point included surface water at 2" deep, biotic crust, and sample point meets secondary indicator D5, FAC-Neutral test.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Wavecrest Southern Alignment City/County: Half Moon Bay Sampling Date: 1-26-16
 Applicant/Owner: Coastside Land Trust State: CA Sampling Point: SP 6
 Investigator(s): Stephanie Freed, David Zwick Section, Township, Range: Section 5, Township 65, Range 5W
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Convex Slope (%): 0-2
 Subregion (LRR): Mediterranean California LRRC Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Terrace escarpments NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Sample point located within upland field adjacent to wetland depression (SP 5). The sample point did not meet wetland indicators for hydrophytic vegetation, hydric soils, or wetland hydrology. Sample point taken 48 hours after last rain event.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>10' x 10'</u>)				
1. <u>Chlorogalum pomeridianum</u>	<u>20</u>	<u>Y</u>	<u>UPL</u>	Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Baccharis pilularis</u>	<u>20</u>	<u>Y</u>	<u>UPL</u>	
3. <u>Achillea millefolium</u>	<u>10</u>	<u>N</u>	<u>FACU</u>	
4. <u>Holcus lanatus</u>	<u>10</u>	<u>N</u>	<u>FAC</u>	
5. <u>Fragaria chiloensis</u>	<u>2</u>	<u>N</u>	<u>FACU</u>	
6. <u>Juncus phaeocephalus</u>	<u>1</u>	<u>N</u>	<u>FACW</u>	
7. <u>Juncus bufonius</u>	<u>1</u>	<u>N</u>	<u>FACW</u>	
8. _____	_____	<u>N</u>	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>36</u> % Cover of Biotic Crust _____				

Remarks:
 Sample point is dominated by UPL species and does not meet any hydrophytic vegetation indicators.

SOIL

Sampling Point: SP 6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-9	7.5YR 3/2	100					Clay Loam	
9-11	10YR 3/2	100					Clay Loam	
11-14	7.5YR 2.5/1	85	7.5YR 5/8	6	C	M	Clay	
			10YR 5/6	9	C	M	Clay	

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

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR C)
- 1 cm Muck (A9) (LRR D)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR C)
- 2 cm Muck (A10) (LRR B)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

Sample point does not meet any criteria for hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) (Nonriverine)
- Sediment Deposits (B2) (Nonriverine)
- Drift Deposits (B3) (Nonriverine)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) (Riverine)
- Sediment Deposits (B2) (Riverine)
- Drift Deposits (B3) (Riverine)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? Yes _____ No

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

Remarks:

Sample point does not meet criteria for hydrology indicators.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Wavecrest Southern Alignment City/County: Half Moon Bay Sampling Date: 1-26-16
 Applicant/Owner: Coastside Land Trust State: CA Sampling Point: SP 7
 Investigator(s): Stephanie Freed, David Zwick Section, Township, Range: Section 5, Township 65, Range 5W
 Landform (hillslope, terrace, etc.): Ravine Local relief (concave, convex, none): Concave Slope (%): 5
 Subregion (LRR): Mediterranean California LRRC Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Tierra and Watsonville Soil Materials NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Sample point located within ravine above OHWM. The sample point met wetland indicators for hydrophytic vegetation and wetland hydrology but did not meet any indicators for hydric soils. Sample point taken 48 hours after last rain event.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>10' x 10'</u>)				
1. <u>Salix lasiolepis</u>	<u>50</u>	<u>Y</u>	<u>FACW</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>50</u> = Total Cover				
Herb Stratum (Plot size: <u>10' x 10'</u>)				
1. <u>Juncus phaeocephalus</u>	<u>80</u>	<u>Y</u>	<u>FACW</u>	
2. <u>Rubus ursinus</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
3. <u>Baccharis pilularis</u>	<u>5</u>	<u>N</u>	<u>UPL</u>	
4. <u>Rumex crispis</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
5. <u>Chlorogalum pomeridianum</u>	<u>1</u>	<u>N</u>	<u>UPL</u>	
6. <u>Geranium dissectum</u>	<u>1</u>	<u>N</u>	<u>UPL</u>	
7. <u>Cirsium vulgare</u>	<u>1</u>	<u>N</u>	<u>FACU</u>	
8. <u>Galium aparine</u>	<u>+</u>	<u>N</u>	<u>FACU</u>	
<u>98</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>2</u> % Cover of Biotic Crust _____				
Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)				
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____				

Remarks:
 Sample point is dominated by FACW species and was determined to contain hydrophytic vegetation, as it meets the dominance test. For absolute % cover. "+" indicates a trace occurrence.

SOIL

Sampling Point: SP 7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-9	2.5Y 5/3	80	5Y 4/1	10	C	M	Sand	
9-14	2.5Y 5/3	99	7.5YR 4/4	11	C	M	Sand	

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Wavecrest Southern Alignment City/County: Half Moon Bay Sampling Date: 1-27-16
 Applicant/Owner: Coastside Land Trust State: CA Sampling Point: SP 8
 Investigator(s): Stephanie Freed, David Zwick Section, Township, Range: Section 5, Township 65, Range 5w
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 0-2
 Subregion (LRR): Mediterranean California LRRC Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Watsonville Loam NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil , or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: Sample point located within wetland swale on a coastal field and was inundated during site visit. Sample point met wetland indicators for hydrophytic vegetation, hydric soils, and wetland hydrology including inundation up to 4" deep. Wetland boundary based on vegetative shift from <i>Juncus phaeocephalus</i> to upland species such as <i>Horkelia californica</i> and <i>Baccharis pilularis</i> , grade break, and absence of surface water. Sample point taken 48 hours after last rain event. Paired with SP 9.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)	
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)	
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)	
4. _____	_____	_____	_____	Prevalence Index worksheet:	
_____ = Total Cover					_____ Total % Cover of: _____ Multiply by: _____
Sapling/Shrub Stratum (Plot size: _____)				OBL species _____ x 1 = _____	
1. _____	_____	_____	_____	FACW species _____ x 2 = _____	
2. _____	_____	_____	_____	FAC species _____ x 3 = _____	
3. _____	_____	_____	_____	FACU species _____ x 4 = _____	
4. _____	_____	_____	_____	UPL species _____ x 5 = _____	
5. _____	_____	_____	_____	Column Totals: _____ (A) _____ (B)	
_____ = Total Cover				Prevalence Index = B/A = _____	
Herb Stratum (Plot size: <u>2' x 10'</u>)				Hydrophytic Vegetation Indicators:	
1. <u><i>Juncus phaeocephalus</i></u>	<u>10</u>	<u>Y</u>	<u>FACW</u>		<input checked="" type="checkbox"/> Dominance Test is >50%
2. <u><i>Rumex crispis</i></u>	<u>5</u>	<u>Y</u>	<u>FAC</u>		<input type="checkbox"/> Prevalence Index is ≤3.0 ¹
3. <u><i>Mentha pulegium</i></u>	<u>2</u>	<u>N</u>	<u>OBL</u>		<input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
4. _____	_____	_____	_____		<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
5. _____	_____	_____	_____		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
<u>17</u> = Total Cover				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	
Woody Vine Stratum (Plot size: _____)					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
_____ = Total Cover					
% Bare Ground in Herb Stratum <u>83</u>		% Cover of Biotic Crust _____			

Remarks:
 Sample point is dominated by FAC & FACW species and was determined to contain hydrophytic vegetation, as it meets the dominance test.

SOIL

Sampling Point: SP 8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10YR 2/2	100					Clay Loam	Saturated
12-14	2.5Y 4/2	85	7.5YR 6/8	15	C	M	Clay Loam	Saturated

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input checked="" type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

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

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:
While no hydric soil indicators were observed, this sample point contains naturally problematic seasonally ponded soils. Sample point occurs in a seasonally ponded depression with a restrictive clay layer and lacks hydric soil indicators due to limited saturation depth and saline conditions.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input checked="" type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine)
	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>4"</u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0"</u> Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0"</u>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators observed at the sample point included surface water 4" deep, biotic crust, and sample point meets secondary indicator D5, FAC-Neutral test.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Wavecrest Southern Alignment City/County: Half Moon Bay Sampling Date: 1-27-16
 Applicant/Owner: Coastside Land Trust State: CA Sampling Point: SP 9
 Investigator(s): Stephanie Freed, David Zwick Section, Township, Range: Section 5, Township 65, Range 5w
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0
 Subregion (LRR): Mediterranean California LRRC Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Watsonville Loam NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Sample point located within upland field adjacent to wetland swale (SP 8) on a coastal terrace. The sample point did not meet wetland indicators for hydrophytic vegetation, hydric soils, and wetland hydrology. Sample point taken 48 hours after last rain event.	

VEGETATION – Use scientific names of plants.

Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: _____)				Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
1. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>3</u> (B)
2. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33</u> (A/B)
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>10' X 10'</u>)				Prevalence Index worksheet:
1. <u>Baccharis pilularis</u>	<u>60</u>	<u>Y</u>	<u>UPL</u>	Total % Cover of: _____ Multiply by: _____
2. _____	_____	_____	_____	OBL species _____ x 1 = _____
3. _____	_____	_____	_____	FACW species _____ x 2 = _____
4. _____	_____	_____	_____	FAC species _____ x 3 = _____
5. _____	_____	_____	_____	FACU species _____ x 4 = _____
<u>60</u> = Total Cover				UPL species _____ x 5 = _____
				Column Totals: _____ (A) _____ (B)
				Prevalence Index = B/A = _____
<u>Herb Stratum</u> (Plot size: <u>10' x 10'</u>)				Hydrophytic Vegetation Indicators:
1. <u>Horkelia californica</u>	<u>40</u>	<u>Y</u>	<u>UPL</u>	<input type="checkbox"/> Dominance Test is >50%
2. <u>Conium maculatum</u>	<u>15</u>	<u>Y</u>	<u>FACW</u>	<input type="checkbox"/> Prevalence Index is ≤3.0 ¹
3. <u>Scrophularia californica</u>	<u>10</u>	<u>N</u>	<u>FAC</u>	<input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
4. <u>Galium aparine</u>	<u>1</u>	<u>N</u>	<u>FACU</u>	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>66</u> = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>

Remarks:
 Sample point is dominated by UPL and FACW species and does not meet any hydrophytic vegetation indicators.

SOIL

Sampling Point: SP 9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	10YR 3/2	100					Loam	Moist
10-14	10YR 4/2	100					Clay Loam	

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

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR C)
- 1 cm Muck (A9) (LRR D)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR C)
- 2 cm Muck (A10) (LRR B)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

Sample point does not meet criteria for hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) (Nonriverine)
- Sediment Deposits (B2) (Nonriverine)
- Drift Deposits (B3) (Nonriverine)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) (Riverine)
- Sediment Deposits (B2) (Riverine)
- Drift Deposits (B3) (Riverine)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? Yes _____ No

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

Remarks:

No wetland hydrology indicators were observed at the sample point.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Wavecrest Southern Alignment City/County: Half Moon Bay Sampling Date: 1-27-16
 Applicant/Owner: Coastside Land Trust State: CA Sampling Point: SP 10
 Investigator(s): Stephanie Freed, David Zwick Section, Township, Range: Section 5, Township 65, Range 5w
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 0-2
 Subregion (LRR): Mediterranean California LRRC Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Watsonville Sandy Loam NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil , or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: Sample point located within wetland depression on a coastal field and was inundated during site visit. The sample point met wetland indicators for hydrophytic vegetation, hydric soils, and wetland hydrology including inundation up to 6" deep. Wetland boundary based on grade break, shift from Baccharis pilularis to Mentha pulegium and Juncus phaeocephalus and presence of surface water. Sample point taken 48 hours after last rain event. Sample point paired with SP 11.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
Herb Stratum (Plot size: <u>10' x 4'</u>)				
1. <u>Mentha pulegium</u>	<u>30</u>	<u>Y</u>	<u>OBL</u>	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
2. <u>Juncus phaeocephalus</u>	<u>10</u>	<u>N</u>	<u>FACW</u>	
3. <u>Holcus lanatus</u>	<u>10</u>	<u>N</u>	<u>FAC</u>	
4. <u>Rumex crispis</u>	<u>2</u>	<u>N</u>	<u>FAC</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>52</u> = Total Cover				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>48</u> % Cover of Biotic Crust _____				

Remarks:
 Sample point is dominated by OBL species and was determined to contain hydrophytic vegetation, as it meets the dominance test.

SOIL

Sampling Point: SP 10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	7.5YR 3/1	100					Clay Loam	Saturated
12-14	10YR 3/2	85	5YR 6/8	15	C	M	Clay	Mg deposits

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input checked="" type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Vernal Pools (F9)	

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

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:
 While no hydric soil indicators were observed, this sample point contains naturally problematic seasonally ponded soils. Sample point occurs in a seasonally ponded depression with a restrictive clay layer and lacks hydric soil indicators due to limited saturation depth and saline conditions.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input checked="" type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine)
	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>6"</u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0"</u> Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0"</u>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks:
 Wetland hydrology indicators observed at the sample point included surface water up to 6" deep, biotic crust, and sample point meets secondary indicator D5, FAC-Neutral test.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Wavecrest Southern Alignment City/County: Half Moon Bay Sampling Date: 1-27-16
 Applicant/Owner: Coastside Land Trust State: CA Sampling Point: SP 11
 Investigator(s): Stephanie Freed, David Zwick Section, Township, Range: Section 5, Township 65, Range 5w
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0
 Subregion (LRR): Mediterranean California LRRC Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Watsonville Sandy Loam NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Sample point located within upland field adjacent to wetland depression (SP 10) on a coastal terrace. The sample point did not meet wetland indicators for hydrophytic vegetation, hydric soils, and wetland hydrology. Sample point taken 48 hours after last rain event.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>10' x 10'</u>)				
1. <u>Baccharis pilularis</u>	<u>30</u>	<u>Y</u>	<u>UPL</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>10 x 10'</u>)				
1. <u>Holcus lanatus</u>	<u>80</u>	<u>Y</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Rubus ursinus</u>	<u>4</u>	<u>N</u>	<u>FAC</u>	
3. <u>Geranium dissectum</u>	<u>1</u>	<u>N</u>	<u>UPL</u>	
4. <u>Juncus phaeocephalus</u>	<u>1</u>	<u>N</u>	<u>FACW</u>	
5. <u>Rumex acetosella</u>	<u>1</u>	<u>N</u>	<u>FACU</u>	
6. <u>Helminthotheca echioides</u>	<u>1</u>	<u>N</u>	<u>FACU</u>	
7. <u>Lysimachia arvensis</u>	<u>1</u>	<u>N</u>	<u>FACW</u>	
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>11</u> % Cover of Biotic Crust _____				
Remarks: Sample point is dominated by FAC and UPL species and does not meet any hydrophytic vegetation indicators.				

Hydrophytic Vegetation Present? Yes _____ No

SOIL

Sampling Point: SP 11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-11	10YR 2/2	100					Loam	Moist
11-14	10YR 4/2	98	7.5YR 5/6	2	C	M	Clay	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)			Indicators for Problematic Hydric Soils ³ :		
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)			
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)			
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)			
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)			
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)			
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)				
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)				
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)				
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)				
<input type="checkbox"/> Sandy Gleyed Matrix (S4)					

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

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>
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Remarks:
Sample point does not meet criteria for hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>13"</u> Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
Remarks:
While water table present 13" below ground surface, this is reflective of the approximately 2.97 inches of rain fall within the eight days proceeding the site visit and is not indicative of wetland hydrology.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Wavecrest Southern Alignment City/County: Half Moon Bay Sampling Date: 1-27-16
 Applicant/Owner: Coastside Land Trust State: CA Sampling Point: SP 12
 Investigator(s): Stephanie Freed, David Zwick Section, Township, Range: Section 5, Township 65, Range 5w
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 0-2
 Subregion (LRR): Mediterranean California LRRC Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Watsonville Sandy Loam NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: Sample point located within large undulating topographical feature with plant hummocks on a coastal field. Sample point met wetland indicators for hydrophytic vegetation, hydric soils, and wetland hydrology was observed including inundation up to 6 inches. Wetland boundary determined by shift from Baccharis pilularis, Rumex acetocella, and Helminthotheca echioides to Juncus patens and Juncus phaeocephalus and presence of surface water. Sample point taken 48 hours after last rain event. Sample point paired with SP 13.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: _____)				
1. <u>Juncus phaeocephalus</u>	50	Y	FACW	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
2. <u>Juncus patens</u>	40	Y	FACW	
3. <u>Holcus lanatus</u>	10	N	FAC	
4. <u>Rumex crispus</u>	+	N	FAC	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____				

Remarks:
 Sample point is dominated by FACW species and was determined to contain hydrophytic vegetation, as it meets the dominance test. For absolute % cover. "+" indicates a trace occurrence.

SOIL

Sampling Point: SP 12

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	7.5YR 2.5/1	100					Clay Loam	Silty, Inundated, mucky

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)			Indicators for Problematic Hydric Soils ³ :		
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)			
<input checked="" type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)			
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)			
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)			
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)			
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)				
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)				
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)				
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)				
<input type="checkbox"/> Sandy Gleyed Matrix (S4)					

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

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:
 Sample point meets criteria for hydric soil indicator A2 (histic epipedon).

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input checked="" type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine)
	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>4"</u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0"</u> Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0"</u>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
Visible inundation on Google Earth May 2011 and saturation visible on Google Earth March 2015.

Remarks:
 Wetland hydrology indicators observed at the sample point included surface water 4" deep, inundation and saturation visible on aerial imagery, biotic crust, and sample point meets D5, FAC-Neutral test.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Wavecrest Southern Alignment City/County: Half Moon Bay Sampling Date: 1-27-16
 Applicant/Owner: Coastside Land Trust State: CA Sampling Point: SP 13
 Investigator(s): Stephanie Freed, David Zwick Section, Township, Range: Section 5, Township 65, Range 5w
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0
 Subregion (LRR): Mediterranean California LRRC Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Watsonville Sandy Loam NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Sample point located within upland field adjacent to wetland feature (SP 12) on a coastal field. Sample point did not meet wetland indicators for hydrophytic vegetation, hydric soils, and wetland hydrology. Sample point taken 48 hours after last rain event. Sample point paired with SP 12.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>10' x 10'</u>)				
1. <u>Baccharis pilularis</u>	<u>60</u>	<u>Y</u>	<u>UPL</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>60</u> = Total Cover				
Herb Stratum (Plot size: <u>10' x 10'</u>)				
1. <u>Juncus patens</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>	
2. <u>Rumex acetosella</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
3. <u>Rubus ursinus</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
4. <u>Holcus lanatus</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
5. <u>Carduus pycnocephalus</u>	<u>5</u>	<u>N</u>	<u>UPL</u>	
6. <u>Raphanus sativus</u>	<u>+</u>		<u>UPL</u>	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>40</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>15</u> % Cover of Biotic Crust _____				
Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain)				
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>				

Remarks:
 Sample point is dominated by FACW and UPL species, and does not meet any hydrophytic vegetation indicators. For absolute % cover. "+" indicates a trace occurrence.

SOIL

Sampling Point: SP 13

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-14	7.5YR 3/1	100					Silt Loam	

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

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) **(LRR C)**
- 1 cm Muck (A9) **(LRR D)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) **(LRR C)**
- 2 cm Muck (A10) **(LRR B)**
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

Sample point does not meet any hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) **(Nonriverine)**
- Sediment Deposits (B2) **(Nonriverine)**
- Drift Deposits (B3) **(Nonriverine)**
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) **(Riverine)**
- Sediment Deposits (B2) **(Riverine)**
- Drift Deposits (B3) **(Riverine)**
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No Depth (inches): _____
 Water Table Present? Yes No _____ Depth (inches): 6"
 Saturation Present? Yes No _____ Depth (inches): 0"
 (includes capillary fringe)

Wetland Hydrology Present? Yes No _____

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

Remarks:

While water table present 6" below ground surface, this is reflective of approximately 2.97 inches of rain within the eight days proceeding the site visit and is not indicative of wetland hydrology conditions.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Wavecrest Southern Alignment City/County: Half Moon Bay Sampling Date: 1-27-16
 Applicant/Owner: Coastside Land Trust State: CA Sampling Point: SP 14
 Investigator(s): Stephanie Freed, David Zwick Section, Township, Range: Section 5, Township 65, Range 5w
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 0-2
 Subregion (LRR): Mediterranean California LRRC Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Watsonville Sandy Loam NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil , or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: Sample point located within wetland depression on a coastal field. The sample point met wetland indicators for hydrophytic vegetation, hydric soils, and wetland hydrology including inundation up to 8". The wetland upland boundary was determined based on grade break, shift from Baccharis pilularis to Juncus phaeocephalus and Rumex crispus and presence of surface water. Sample point taken 48 hours after last rain event. Sample point paired with SP 15.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>10' x 6'</u>)				
1. <u>Juncus phaeocephalus</u>	<u>30</u>	<u>Y</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
2. <u>Rumex crispis</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Mentha pulegium</u>	<u>5</u>	<u>N</u>	<u>OBL</u>	
4. <u>Holcus lanatus</u>	<u>1</u>	<u>N</u>	<u>FAC</u>	
5. <u>Rumex acetosella</u>	<u>1</u>	<u>N</u>	<u>FACU</u>	
6. <u>Helminthotheca echioides</u>	<u>+</u>	<u>N</u>	<u>FACU</u>	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>53</u> % Cover of Biotic Crust _____				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____				

Remarks:
 Sample point is dominated by FACW and FAC species and was determined to contain hydrophytic vegetation, as it meets the dominance test. "+" indicates a trace occurrence.

SOIL

Sampling Point: SP 14

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 2/1	100					Silt Loam	Saturated

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input checked="" type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Vernal Pools (F9)	

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

Restrictive Layer (if present): Type: <u>Soil falling in on itself</u> Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____
---	--

Remarks:
 While no hydric soil indicators were observed, this sample point contains naturally problematic seasonally ponded soils. Sample point occurs in a seasonally ponded depression with a restrictive clay layer and lacks hydric soil indicators due to limited saturation depth and saline conditions.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine)
	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>8"</u> Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No _____ Depth (inches): _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks:
 Wetland hydrology indicators observed at the sample point included surface water 8" deep and sample point meets secondary indicator D5, FAC-Neutral test.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Wavecrest Southern Alignment City/County: Half Moon Bay Sampling Date: 1-27-16
 Applicant/Owner: Coastside Land Trust State: CA Sampling Point: SP 15
 Investigator(s): Stephanie Freed, David Zwick Section, Township, Range: Section 5, Township 65, Range 5w
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0
 Subregion (LRR): Mediterranean California LRRC Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Watsonville Sandy Loam NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Sample point located adjacent to wetland depression (SP 14) within an upland field. The sample point did not meet wetland indicators for hydrophytic vegetation, hydric soils, and wetland hydrology. Sample point taken 48 hours after last rain event.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: _____)				
1. <u>Rumex acetosella</u>	<u>80</u>	<u>Y</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain)
2. <u>Holcus lanatus</u>	<u>10</u>	<u>N</u>	<u>FAC</u>	
3. <u>Helminthotheca echioides</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
4. <u>Juncus phaeocephalus</u>	<u>5</u>	<u>N</u>	<u>FACW</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____		Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>		

Remarks:
 Sample point is dominated by FACU species and does not meet any hydrophytic vegetation indicators.

SOIL

Sampling Point: SP 15

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	10YR 3/2	100					Silt Loam	
10-14	7.5YR 2.5/1	99	5YR 3/4	1	C	M	Clay	

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Wavecrest Southern Alignment City/County: Half Moon Bay Sampling Date: 1-27-16
 Applicant/Owner: Coastside Land Trust State: CA Sampling Point: SP 16
 Investigator(s): Stephanie Freed, David Zwick Section, Township, Range: Section 5, Township 65, Range 5w
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0
 Subregion (LRR): Mediterranean California LRRC Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Watsonville Sandy Loam NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil , or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: Sample point located within undulating topographical feature with plant hummocks in low-lying area and no obvious depression on a coastal field. Sample met wetland indicators for hydrophytic vegetation, hydric soils, and wetland hydrology including inundation up to 6" deep. Wetland boundary based on shift from Geranium dissectum to Mentha pulegium and Juncus phaeocephalus and presence of surface water. Sample point taken 48 hours after last rain event. Sample point paired with SP 17.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
Herb Stratum (Plot size: <u>10' x 10'</u>)				
1. <u>Juncus phaeocephalus</u>	<u>40</u>	<u>Y</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
2. <u>Mentha pulegium</u>	<u>10</u>	<u>N</u>	<u>OBL</u>	
3. <u>Holcus lanatus</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
4. <u>Rumex crispus</u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>40</u> % Cover of Biotic Crust _____				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____				

Remarks:
 Sample point is dominated by FACW species and was determined to contain hydrophytic vegetation, as it meets the dominance test.

SOIL

Sampling Point: SP 16

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 3/2	100					Silt	Saturated
4-8	7.5YR 3/2	100					Clay Loam	
8-14	7.5YR 3/2	94	5YR 4/6	6	C	M	Clay	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input checked="" type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

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

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:
While no hydric soil indicators were observed, this sample point contains naturally problematic seasonally ponded soils. Sample point occurs in a seasonally ponded in a low-lying area with a restrictive clay layer and lacks hydric soil indicators due to limited saturation depth and saline conditions.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine)
	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>6"</u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0"</u> Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0"</u>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology indicators observed at the sample point included surface water 6" deep and sample point meets secondary indicator D5, FAC-Neutral test.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Wavecrest Southern Alignment City/County: Half Moon Bay Sampling Date: 1-27-16
 Applicant/Owner: Coastside Land Trust State: CA Sampling Point: SP 17
 Investigator(s): Stephanie Freed, David Zwick Section, Township, Range: Section 5, Township 65, Range 5w
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0
 Subregion (LRR): Mediterranean California LRRC Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Watsonville Sandy Loam NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Sample point located within upland field. The sample point met wetland indicators for hydrophytic vegetation, but did not meet wetland indicators for hydric soils or wetland hydrology. Sample point taken 48 hours after last rain event. Sample point paired with SP 16.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: _____)				
1. <u>Holcus lanatus</u>	<u>60</u>	<u>Y</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
2. <u>Geranium dissectum</u>	<u>10</u>	<u>N</u>	<u>UPL</u>	
3. <u>Helminthotheca echioides</u>	<u>5</u>	<u>N</u>	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>25</u>		% Cover of Biotic Crust _____		Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____

Remarks:
 While sample point is dominated by FAC species and meets dominance test for hydrophytic vegetation, *Holcus lanatus* is invasive in nature and is ubiquitous throughout coastal California due to moisture from coastal fog and is therefore not indicative of wetland conditions.

SOIL

Sampling Point: SP 17

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-9	7.5YR 4/2	100					Silt Loam	
9-14	7.5YR 4/2	93	5YR 4/6	6	C	M	Silt Clay	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

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

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>
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Remarks:
Sample point does not meet any hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine)
	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): 5" Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
While water table present at 5" below ground surface, this is likely reflective of approximately 2.97 inches of rain within the eight days proceeding the site visit and is not indicative of wetland hydrology conditions.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Wavecrest Southern Alignment City/County: Half Moon Bay Sampling Date: 2-9-16
 Applicant/Owner: Coastside Land Trust State: CA Sampling Point: SP 18
 Investigator(s): Stephanie Freed Section, Township, Range: Section 5, Township 65, Range 5w
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope (%): 0-2
 Subregion (LRR): Mediterranean California LRRC Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Watsonville loam, nearly level NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Sample point located within swale on a coastal field. The sample point did not meet wetland indicators for hydrophytic vegetation or hydric soils but contained wetland indicator for wetland hydrology including water table present at 3" below ground surface. Sample point taken 6 days after last rain event. Sample point paired with SP 19.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
Herb Stratum (Plot size: <u>1' x 10'</u>)				
1. <u>Rumex crispus</u>	<u>30</u>	<u>Y</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Helminthotheca echioides</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>	
3. <u>Festuca perennis</u>	<u>10</u>	<u>N</u>	<u>FAC</u>	
4. <u>Geranium dissectum</u>	<u>5</u>	<u>N</u>	<u>UPL</u>	
5. <u>Mentha pulegium</u>	<u>5</u>	<u>N</u>	<u>OBL</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				

Remarks:
 Sample point is dominated by FAC and FACU species and does not meet any hydrophytic vegetation indicators.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Wavecrest Southern Alignment City/County: Half Moon Bay Sampling Date: 2-9-16
 Applicant/Owner: Coastside Land Trust State: CA Sampling Point: SP 19
 Investigator(s): Stephanie Freed Section, Township, Range: Section 5, Township 65, Range 5w
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0
 Subregion (LRR): Mediterranean California LRR C Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Watsonville loam, nearly level NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Sample point located adjacent to upland swale (SP 18). The sample point did not contain wetland indicators for hydrophytic vegetation, hydric soils; however, indicators of wetland hydrology were observed including water table at 4" below ground surface. Sample point taken 6 days after last rain event. Sample point paired with SP 18.	

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
4. _____	_____	_____	_____	
_____ = Total Cover				
<u>Sapling/Shrub Stratum</u> (Plot size: _____)				Prevalence Index worksheet:
1. _____	_____	_____	_____	Total % Cover of: _____ Multiply by: _____
2. _____	_____	_____	_____	OBL species _____ x 1 = _____
3. _____	_____	_____	_____	FACW species _____ x 2 = _____
4. _____	_____	_____	_____	FAC species _____ x 3 = _____
5. _____	_____	_____	_____	FACU species _____ x 4 = _____
_____ = Total Cover				UPL species _____ x 5 = _____
				Column Totals: _____ (A) _____ (B)
				Prevalence Index = B/A = _____
<u>Herb Stratum</u> (Plot size: _____)				Hydrophytic Vegetation Indicators:
1. <u>Helminthotheca echioides</u>	<u>60</u>	<u>Y</u>	<u>FACU</u>	<input type="checkbox"/> Dominance Test is >50%
2. <u>Geranium dissectum</u>	<u>20</u>	<u>Y</u>	<u>UPL</u>	<input type="checkbox"/> Prevalence Index is ≤3.0 ¹
3. <u>Rumex crispus</u>	<u>2</u>	<u>N</u>	<u>FAC</u>	<input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
4. _____	_____	_____	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>82</u> = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>18</u> % Cover of Biotic Crust _____				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>

Remarks:
 Sample point is dominated by FACU and UPL species and does not meet any hydrophytic vegetation indicators.

SOIL

Sampling Point: SP 19

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	7.5YR 3/1	100					Loam	moist starting at 6"
12-14	7.5YR 3/1	100					Silt Loam	Saturated, some gravel

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

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) **(LRR C)**
- 1 cm Muck (A9) **(LRR D)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) **(LRR C)**
- 2 cm Muck (A10) **(LRR B)**
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

Sample point does not meet any hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) **(Nonriverine)**
- Sediment Deposits (B2) **(Nonriverine)**
- Drift Deposits (B3) **(Nonriverine)**
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) **(Riverine)**
- Sediment Deposits (B2) **(Riverine)**
- Drift Deposits (B3) **(Riverine)**
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No Depth (inches): _____
 Water Table Present? Yes No _____ Depth (inches): 4"
 Saturation Present? Yes No _____ Depth (inches): 6"
 (includes capillary fringe)

Wetland Hydrology Present? Yes No _____

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

Remarks:

Wetland hydrology indicators observed at the sample point included high water table present at 4" below ground surface.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Wavecrest Southern Alignment City/County: Half Moon Bay Sampling Date: 2-9-16
 Applicant/Owner: Coastside Land Trust State: CA Sampling Point: SP 20
 Investigator(s): Stephanie Freed Section, Township, Range: Section 5, Township 65, Range 5w
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0
 Subregion (LRR): Mediterranean California LRR Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Watsonville, sandy loam, gently sloping NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Sample point located within upland field. Sample point did not meet wetland indicators for hydrophytic vegetation, hydric soils, and wetland hydrology. Sample point taken 6 days after last rain event.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: <u>10' x 10'</u>)				Prevalence Index worksheet:
1. <u>Baccharis pilularis</u>	<u>30</u>	<u>Y</u>	<u>UPL</u>	Total % Cover of: _____ Multiply by: _____
2. _____	_____	_____	_____	OBL species _____ x 1 = _____
3. _____	_____	_____	_____	FACW species _____ x 2 = _____
4. _____	_____	_____	_____	FAC species _____ x 3 = _____
5. _____	_____	_____	_____	FACU species _____ x 4 = _____
<u>30</u> = Total Cover				UPL species _____ x 5 = _____
				Column Totals: _____ (A) _____ (B)
				Prevalence Index = B/A = _____
Herb Stratum (Plot size: <u>10' x 10'</u>)				Hydrophytic Vegetation Indicators:
1. <u>Juncus patens</u>	<u>70</u>	<u>Y</u>	<u>FACW</u>	<input type="checkbox"/> Dominance Test is >50%
2. <u>Scrophularia californica</u>	<u>+</u>	<u>N</u>	<u>FAC</u>	<input type="checkbox"/> Prevalence Index is ≤3.0 ¹
3. <u>Galium aparine</u>	<u>+</u>	<u>N</u>	<u>FACU</u>	<input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
4. <u>Plagiobothrys chorisianus</u>	<u>+</u>	<u>N</u>	<u>OBL</u>	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>70</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				

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

Hydrophytic Vegetation Present? Yes _____ No

Remarks:
 Sample point is dominated by FACW and UPL species and does not meet any hydrophytic vegetation indicators. For absolute % cover. "+" indicates a trace occurrence.

SOIL

Sampling Point: SP 20

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-14	7.5YR 3/2	100					Silt Loam	traces of fine sand, moist

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

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) **(LRR C)**
- 1 cm Muck (A9) **(LRR D)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) **(LRR C)**
- 2 cm Muck (A10) **(LRR B)**
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

Sample point does not meet any hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) **(Nonriverine)**
- Sediment Deposits (B2) **(Nonriverine)**
- Drift Deposits (B3) **(Nonriverine)**
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) **(Riverine)**
- Sediment Deposits (B2) **(Riverine)**
- Drift Deposits (B3) **(Riverine)**
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? Yes _____ No

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

Remarks:

Sample point does not meet criteria for hydrology indicators.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Wavecrest Southern Alignment City/County: Half Moon Bay Sampling Date: 2-16-16
 Applicant/Owner: Coastside Land Trust State: CA Sampling Point: SP 21
 Investigator(s): Stephanie Freed Section, Township, Range: Section 5, Township 65, Range 5w
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): None Slope (%): 0
 Subregion (LRR): Mediterranean California LRRC Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Watsonville loam, nearly level NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Sample point located within coastal field with no topographical feature. The sample point did not meet wetland indicators for hydrophytic vegetation or hydric soils but indicators of wetland hydrology were observed including water table at 10" below ground surface. Sample point taken 13 days after last rain event.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>10' x 10'</u>)				
1. <u>Carex harfordii</u>	<u>50</u>	<u>Y</u>	<u>OBL</u>	
2. <u>Helminthotheca echioides</u>	<u>25</u>	<u>Y</u>	<u>FACU</u>	
3. <u>Geranium dissectum</u>	<u>15</u>	<u>N</u>	<u>UPL</u>	
4. <u>Holcus lanatus</u>	<u>10</u>	<u>N</u>	<u>FAC</u>	
5. <u>Vicea sativa</u>	<u>+</u>	<u>N</u>	<u>FACU</u>	
6. <u>Rumex crispus</u>	<u>+</u>	<u>N</u>	<u>FAC</u>	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				
Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain)				
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>				

Remarks:
 Sample Point is dominated by OBL and FACU species and does not meet any hydrophytic vegetation indicators. "+" indicates a trace occurrence.

SOIL

Sampling Point: SP 21

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	7.5YR 3/2	100					Clay Loam	Moist, silty
10-14	7.5YR 3/2	100					Clay	Saturated

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

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR C)
- 1 cm Muck (A9) (LRR D)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR C)
- 2 cm Muck (A10) (LRR B)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

Sample point does not meet any indicators for hydric soils.

HYDROLOGY

Wetland Hydrology Indicators:

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) (Nonriverine)
- Sediment Deposits (B2) (Nonriverine)
- Drift Deposits (B3) (Nonriverine)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) (Riverine)
- Sediment Deposits (B2) (Riverine)
- Drift Deposits (B3) (Riverine)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No Depth (inches): _____
 Water Table Present? Yes No _____ Depth (inches): 10"
 Saturation Present? Yes No _____ Depth (inches): 10"
 (includes capillary fringe)

Wetland Hydrology Present? Yes No _____

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

Remarks:

Wetland hydrology indicators observed at the sample point included high water table at 10" below ground surface and FAC-Neutral Test.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Wavecrest Southern Alignment City/County: Half Moon Bay Sampling Date: 2-16-16
 Applicant/Owner: Coastside Land Trust State: CA Sampling Point: SP 22
 Investigator(s): Stephanie Freed Section, Township, Range: Section 5, Township 65, Range 5w
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): Mediterranean California LRRC Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Watsonville loam, nearly level NWI classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: Sample point located within hummocky coastal field. The sample point met wetland indicators for hydrophytic vegetation, hydric soils, and wetland hydrology. The wetland upland boundary was determined based on grade break, shift from <i>Juncus phaeocephalus</i> and <i>Carex harfordii</i> to <i>Helminthotheca echioides</i> and <i>Holcus lanatus</i> . Sample point taken more than 14 days after last rain event. Sample point paired with SP 23.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: _____)				
1. <u><i>Juncus phaeocephalus</i></u>	<u>80</u>	<u>Y</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
2. <u><i>Carex harfordii</i></u>	<u>10</u>	<u>N</u>	<u>OBL</u>	
3. <u><i>Holcus lanatus</i></u>	<u>5</u>	<u>N</u>	<u>FAC</u>	
4. <u><i>Helminthotheca echioides</i></u>	<u>3</u>	<u>N</u>	<u>FACU</u>	
5. <u><i>Rumex crispus</i></u>	<u>2</u>	<u>N</u>	<u>FAC</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____				

Remarks:
 Sample Point is dominated by FACW species and was determined to contain hydrophytic vegetation, as it meets the dominance test.

SOIL

Sampling Point: SP 22

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	7.5YR 4/2	85	5Y 4/6	15	C	M,PL	Clay	Saturated
6-14	7.5YR 4/1	95	7.5YR 4/4	5	C	M,PL	Clay	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

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

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:
 Sample point meets criteria for hydric soil indicator F3 (Depleted Matrix).

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input checked="" type="checkbox"/> High Water Table (A2)	<input checked="" type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine)
	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): 6" Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No _____ Depth (inches): 6"	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks:
 Wetland hydrology indicators observed at the sample point included high water table at 6" below ground surface, oxidized rhizospheres along living roots, biotic crust, and the FAC-Neutral test.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Wavecrest Southern Alignment City/County: Half Moon Bay Sampling Date: 2-16-16
 Applicant/Owner: Coastside Land Trust State: CA Sampling Point: SP 23
 Investigator(s): Stephanie Freed Section, Township, Range: Section 5, Township 65, Range 5w
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): Mediterranean California LRRC Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Watsonville loam, nearly level NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Sample point located within upland field adjacent to hummocky wetland feature (SP 22). Sample point did not meet wetland indicators for hydrophytic vegetation, hydric soils, or wetland hydrology. Sample point taken more than 14 days after last rain event.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>10' x 10'</u>)				
1. <u>Helminthotheca echioides</u>	30	Y	FACU	
2. <u>Holcus lanatus</u>	30	Y	FAC	
3. <u>Geranium dissectum</u>	20	Y	UPL	
4. <u>Rumex acetosell</u>	10	N	FACU	
5. <u>Carex harfordii</u>	5	N	OBL	
6. <u>Juncas patens</u>	3	N	FACW	
7. <u>Cirsium vulgare</u>	2	N	FACU	
8. <u>Rubus ursinus</u>	+	N	FAC	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
 Total Number of Dominant Species Across All Strata: 3 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

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

Hydrophytic Vegetation Indicators:
 ___ Dominance Test is >50%
 ___ Prevalence Index is ≤3.0¹
 ___ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No

Remarks:
 Sample Point is dominated by FAC, FACU, and UPL species and does not meet any hydrophytic vegetation indicators. "+" indicates a trace occurrence.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Wavecrest Southern Alignment City/County: Half Moon Bay Sampling Date: 2-16-16
 Applicant/Owner: Coastside Land Trust State: CA Sampling Point: SP 24
 Investigator(s): Stephanie Freed Section, Township, Range: Section 5, Township 65, Range 5w
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): Mediterranean California LRRC Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Watsonville, sandy loam, gently sloping NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil , or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: Sample point located within low-lying area on a coastal field. The sample point met wetland indicators for hydrophytic vegetation, hydric soils, and wetland hydrology. The wetland upland boundary was determined based on grade break, shift from Baccharis pilularis and Juncus patens to Mentha pulegium and Carex harfordii, and presence of biotic crust. Sample point taken more than 14 days after last rain event. Sample point paired with SP 20 from 2-9-16.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>10' x 10'</u>)				
1. <u>Carex harfordii</u>	<u>20</u>	<u>Y</u>	<u>OBL</u>	
2. <u>Mentha pulegium</u>	<u>20</u>	<u>Y</u>	<u>OBL</u>	
3. <u>Juncus patens</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>	
4. <u>Holcus lanatus</u>	<u>15</u>	<u>N</u>	<u>FAC</u>	
5. <u>Polypogon monspeliensis</u>	<u>10</u>	<u>N</u>	<u>FACW</u>	
6. <u>Plagiobothrys chorisianus</u>	<u>2</u>	<u>N</u>	<u>OBL</u>	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>13</u> % Cover of Biotic Crust _____				
Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)				
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____				

Remarks:
 Sample Point is dominated by FACW and OBL species and was determined to contain hydrophytic vegetation, as it meets the dominance test.

SOIL

Sampling Point: SP 24

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	7.5YR 4/2	100					Clay Loam	Moist
10-14	7.5YR 4/2	100					Clay	

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

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (LRR C)
- 1 cm Muck (A9) (LRR D)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (LRR C)
- 2 cm Muck (A10) (LRR B)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

While no hydric soil indicators were observed, this sample point contains naturally problematic seasonally ponded soils. Sample point occurs in a seasonally ponded low-lying area with a restrictive clay layer and lacks hydric soil indicators due to limited saturation depth and saline conditions.

HYDROLOGY

Wetland Hydrology Indicators:

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) (Nonriverine)
- Sediment Deposits (B2) (Nonriverine)
- Drift Deposits (B3) (Nonriverine)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) (Riverine)
- Sediment Deposits (B2) (Riverine)
- Drift Deposits (B3) (Riverine)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? Yes No

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

Remarks:

Wetland hydrology indicators observed at the sample point included biotic crust and FAC-Neutral Test.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Wavecrest Southern Alignment City/County: Half Moon Bay Sampling Date: 2-16-16
 Applicant/Owner: Coastside Land Trust State: CA Sampling Point: SP 25
 Investigator(s): Stephanie Freed Section, Township, Range: Section 5, Township 65, Range 5w
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): _____
 Subregion (LRR): Mediterranean California LRR C Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Watsonville sandy loam, gently sloping NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Sample point located within coastal field. The sample point met wetland indicators for hydrophytic vegetation, but did not meet indicators for hydric soils or wetland hydrology. Sample point taken more than 14 days after last rain event.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>10' x 10'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Plagiobothrys chorisianus</u>	<u>50</u>	<u>Y</u>	<u>OBL</u>	
2. <u>Juncus patens</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>	
3. <u>Polypogon monspeliensis</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>	
4. <u>Mentha pulegium</u>	<u>1</u>	<u>N</u>	<u>OBL</u>	
5. <u>Baccharis pilularis</u>	<u>1</u>	<u>N</u>	<u>UPL</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>82</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>18</u> % Cover of Biotic Crust _____				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
 Total Number of Dominant Species Across All Strata: 2 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

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

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes No _____

Remarks:
 Sample Point is dominated by FACW and OBL species and was determined to contain hydrophytic vegetation, as it meets the dominance test.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Wavecrest Southern Alignment City/County: Half Moon Bay Sampling Date: 2-16-16
 Applicant/Owner: Coastside Land Trust State: CA Sampling Point: SP 26
 Investigator(s): Stephanie Freed Section, Township, Range: Section 5, Township 65, Range 5w
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): _____
 Subregion (LRR): Mediterranean California LRR C Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Watsonville sandy loam, gently sloping NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Sample point located within former tire rut in coastal field. The sample point met wetland indicators for hydrophytic vegetation, but did not meet indicators for hydric soils or wetland hydrology. Taken more than 14 days after last rain event. Sample point paired with SP 27.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>2' x 10'</u>)				
1. <u>Festuca perennis</u>	30	Y	FAC	
2. <u>Carex harfordii</u>	20	Y	OBL	
3. <u>Juncus phaeocephalus</u>	20	Y	FACW	
4. <u>Helminthotheca echioides</u>	10	N	FACU	
5. <u>Geranium dissectum</u>	5	N	UPL	
6. <u>Rumex acetosella</u>	5	N	FACU	
7. <u>Rumex crispus</u>	2	N	FAC	
8. <u>Lysimachia arvensis</u>	+	N	FAC	
92 = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>8</u> % Cover of Biotic Crust _____				

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
 Total Number of Dominant Species Across All Strata: 2 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

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

Hydrophytic Vegetation Indicators:
 Dominance Test is >50%
 Prevalence Index is ≤3.0¹
 Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes No _____

Remarks:
 Sample Point is dominated by FAC, FACW, and OBL species and was determined to contain hydrophytic vegetation, as it meets the dominance test.

SOIL

Sampling Point: SP 26

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	7.5YR 3/2	100					Clay Loam	Moist, gravelly
10-14	7.5YR 3/2	100					Clay	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Vernal Pools (F9)	

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

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/>
--	--

Remarks:
No hydric soil indicators were observed at this sample point location.

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine)
	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>
--	--

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

Remarks:
Wetland hydrology indicators observed at the sample point included FAC-Neutral Test.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Wavecrest Southern Alignment City/County: Half Moon Bay Sampling Date: 2-16-16
 Applicant/Owner: Coastside Land Trust State: CA Sampling Point: SP 27
 Investigator(s): Stephanie Freed Section, Township, Range: Section 5, Township 65, Range 5w
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): _____
 Subregion (LRR): Mediterranean California LRR C Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Watsonville loam, nearly level NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Sample point located adjacent to former tire rut (SP 26) in coastal field. Sample point did not meet indicators for hydrophytic vegetation, hydric soils, or wetland hydrology. Sample point taken more than 14 days after last rain event.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>10' x 10'</u>)				
1. <u>Festuca perennis</u>	<u>35</u>	<u>Y</u>	<u>FAC</u>	
2. <u>Helminthotheca echioides</u>	<u>25</u>	<u>Y</u>	<u>FACU</u>	
3. <u>Juncus phaeocephalus</u>	<u>10</u>	<u>N</u>	<u>FACW</u>	
4. <u>Geranium dissectum</u>	<u>10</u>	<u>N</u>	<u>UPL</u>	
5. <u>Carex harfordii</u>	<u>+</u>	<u>N</u>	<u>OBL</u>	
6. <u>Rumex acetosella</u>	<u>+</u>	<u>N</u>	<u>FACU</u>	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>20</u> % Cover of Biotic Crust _____				
Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain)				
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>				

Remarks:
 Sample Point is dominated by FAC and FACU species and did not meet any indicators for hydrophytic vegetation.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Wavecrest Southern Alignment City/County: Half Moon Bay Sampling Date: 2-16-16
 Applicant/Owner: Coastside Land Trust State: CA Sampling Point: SP 28
 Investigator(s): Stephanie Freed Section, Township, Range: Section 5, Township 65, Range 5w
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): _____
 Subregion (LRR): Mediterranean California LRR C Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Watsonville sandy loam, gently sloping NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Sample point located within depression in coastal field. The sample point met wetland indicators for hydrophytic vegetation and wetland hydrology but did not meet indicators for hydric soils. Sample point taken more than 14 days after last rain event. Sample point paired with SP 29.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
Herb Stratum (Plot size: <u>4' x 2'</u>)				
1. <u>Festuca perennis</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain)
2. <u>Plagiobothrys chorisianus</u>	<u>10</u>	<u>Y</u>	<u>OBL</u>	
3. <u>Polypogon monspeliensis</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
<u>30</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>70</u> % Cover of Biotic Crust _____				

Remarks:
 Sample Point is dominated by FAC, FACW, and OBL species and met the dominance test indicator for hydrophytic vegetation.

SOIL

Sampling Point: SP 28

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-14	7.5YR 2.5/1	100					Clay Loam	trace fine sand

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

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

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) **(LRR C)**
- 1 cm Muck (A9) **(LRR D)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) **(LRR C)**
- 2 cm Muck (A10) **(LRR B)**
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:

This sample point did not meet any indicators for hydric soils.

HYDROLOGY

Wetland Hydrology Indicators:

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

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) **(Nonriverine)**
- Sediment Deposits (B2) **(Nonriverine)**
- Drift Deposits (B3) **(Nonriverine)**
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) **(Riverine)**
- Sediment Deposits (B2) **(Riverine)**
- Drift Deposits (B3) **(Riverine)**
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? Yes No _____

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

Remarks:

Wetland hydrology indicators observed include biotic crust and the FAC-Neutral Test.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Wavecrest Southern Alignment City/County: Half Moon Bay Sampling Date: 2-16-16
 Applicant/Owner: Coastside Land Trust State: CA Sampling Point: SP 29
 Investigator(s): Stephanie Freed Section, Township, Range: Section 5, Township 65, Range 5w
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope (%): _____
 Subregion (LRR): Mediterranean California LRR C Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Watsonville sandy loam, gently sloping NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Sample point located adjacent to depression (SP 28) in coastal field. The sample point did not meet wetland indicators for hydrophytic vegetation, hydric soils, or wetland hydrology. Sample point taken more than 14 days after last rain event.	

VEGETATION – Use scientific names of plants.

<p><u>Tree Stratum</u> (Plot size: _____)</p> <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:40%;"></th> <th style="width:10%; text-align: center;">Absolute % Cover</th> <th style="width:10%; text-align: center;">Dominant Species?</th> <th style="width:10%; text-align: center;">Indicator Status</th> </tr> </thead> <tbody> <tr><td>1. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>2. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>3. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>4. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td colspan="4" style="text-align: right;">_____ = Total Cover</td></tr> </tbody> </table> <p><u>Sapling/Shrub Stratum</u> (Plot size: <u>10' x 10'</u>)</p> <table style="width:100%; border-collapse: collapse;"> <tbody> <tr><td>1. <u>Baccharis pilularis</u></td><td style="text-align: center;">60</td><td style="text-align: center;">Y</td><td style="text-align: center;">UPL</td></tr> <tr><td>2. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>3. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>4. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>5. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td colspan="4" style="text-align: right;">60 = Total Cover</td></tr> </tbody> </table> <p><u>Herb Stratum</u> (Plot size: <u>10' x 10'</u>)</p> <table style="width:100%; border-collapse: collapse;"> <tbody> <tr><td>1. <u>Juncus patens</u></td><td style="text-align: center;">20</td><td style="text-align: center;">Y</td><td style="text-align: center;">FACW</td></tr> <tr><td>2. <u>Chlorogalum pomeridianum</u></td><td style="text-align: center;">15</td><td style="text-align: center;">Y</td><td style="text-align: center;">UPL</td></tr> <tr><td>3. <u>Rubus ursinus</u></td><td style="text-align: center;">5</td><td style="text-align: center;">N</td><td style="text-align: center;">FAC</td></tr> <tr><td>4. <u>Festuca perennis</u></td><td style="text-align: center;">3</td><td style="text-align: center;">N</td><td style="text-align: center;">FAC</td></tr> <tr><td>5. <u>Scrophularia californica</u></td><td style="text-align: center;">2</td><td style="text-align: center;">N</td><td style="text-align: center;">FAC</td></tr> <tr><td>6. <u>Horkelia californica</u></td><td style="text-align: center;">2</td><td style="text-align: center;">N</td><td style="text-align: center;">UPL</td></tr> <tr><td>7. <u>Taraxia ovata</u></td><td style="text-align: center;">2</td><td style="text-align: center;">N</td><td style="text-align: center;">UPL</td></tr> <tr><td>8. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td colspan="4" style="text-align: right;">54 = Total Cover</td></tr> </tbody> </table> <p><u>Woody Vine Stratum</u> (Plot size: _____)</p> <table style="width:100%; border-collapse: collapse;"> <tbody> <tr><td>1. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td>2. _____</td><td>_____</td><td>_____</td><td>_____</td></tr> <tr><td colspan="4" style="text-align: right;">_____ = Total Cover</td></tr> </tbody> </table> <p>% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____</p>		Absolute % Cover	Dominant Species?	Indicator Status	1. _____	_____	_____	_____	2. _____	_____	_____	_____	3. _____	_____	_____	_____	4. _____	_____	_____	_____	_____ = Total Cover				1. <u>Baccharis pilularis</u>	60	Y	UPL	2. _____	_____	_____	_____	3. _____	_____	_____	_____	4. _____	_____	_____	_____	5. _____	_____	_____	_____	60 = Total Cover				1. <u>Juncus patens</u>	20	Y	FACW	2. <u>Chlorogalum pomeridianum</u>	15	Y	UPL	3. <u>Rubus ursinus</u>	5	N	FAC	4. <u>Festuca perennis</u>	3	N	FAC	5. <u>Scrophularia californica</u>	2	N	FAC	6. <u>Horkelia californica</u>	2	N	UPL	7. <u>Taraxia ovata</u>	2	N	UPL	8. _____	_____	_____	_____	54 = Total Cover				1. _____	_____	_____	_____	2. _____	_____	_____	_____	_____ = Total Cover				<p>Dominance Test worksheet:</p> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33</u> (A/B)
	Absolute % Cover	Dominant Species?	Indicator Status																																																																																														
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Remarks:
 Sample Point is dominated by UPL and FACW species and did not meet any indicators for hydrophytic vegetation.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Wavecrest Southern Alignment City/County: Half Moon Bay Sampling Date: 1-14-20
 Applicant/Owner: Coastside Land Trust State: CA Sampling Point: SP30
 Investigator(s): Scott Batiuk Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): concave Slope (%): 0
 Subregion (LRR): Mediterranean California LRR C Lat: 37.440854 Long: -122.431879 Datum: WGS84
 Soil Map Unit Name: Watsonville loam, nearly level NWI classification: none
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: Sample point located in roadside ditch adjacent to the south side of Redondo Beach Road. The sample point met indicators for hydrophytic vegetation, hydric soil, and wetland hydrology. Paired with SP31.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Tctal Cover				
Herb Stratum (Plot size: <u>3' x 8'</u>)				
1. <u>Mentha pulegium</u>	<u>15</u>	<u>yes</u>	<u>OBL</u>	
2. <u>Cyperus eragrostis</u>	<u>10</u>	<u>yes</u>	<u>FACW</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Tctal Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Tctal Cover				
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u>				

Remarks:
 Additional cover: open water, 75%
 Sample point met the Dominance Test hydrophytic vegetation indicator.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Wavecrest Southern Alignment City/County: Half Moon Bay Sampling Date: 1-14-20
 Applicant/Owner: Coastside Land Trust State: CA Sampling Point: SP31
 Investigator(s): Scott Batiuk Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 1
 Subregion (LRR): Mediterranean California LRR C Lat: 37.440854 Long: -122.431879 Datum: WGS84
 Soil Map Unit Name: Watsonville loam, nearly level NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Sample point located in narrow strip of land adjacent to roadside ditch on south side of Redondo Beach Road and north of fence line. The sample point did not meet indicators for hydrophytic vegetation, hydric soils, or wetland hydrology. Paired with SP30.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:
1. _____	_____	_____	_____	Total % Cover of: _____ Multiply by: _____
2. _____	_____	_____	_____	OBL species _____ x 1 = _____
3. _____	_____	_____	_____	FACW species _____ x 2 = _____
4. _____	_____	_____	_____	FAC species _____ x 3 = _____
5. _____	_____	_____	_____	FACU species _____ x 4 = _____
_____ = Tctal Cover				UPL species _____ x 5 = _____
				Column Totals: _____ (A) _____ (B)
				Prevalence Index = B/A = _____
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators:
1. _____	_____	_____	_____	___ Dominance Test is >50%
2. _____	_____	_____	_____	___ Prevalence Index is ≤3.0 ¹
3. _____	_____	_____	_____	___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
4. _____	_____	_____	_____	___ Problematic Hydrophytic Vegetation ¹ (Explain)
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: <u>5' radius</u>)				
1. <u>Rubus ursinus</u>	<u>60</u>	<u>yes</u>	<u>FAC</u>	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Hedera helix</u>	<u>40</u>	<u>yes</u>	<u>FACU</u>	
<u>100</u> = Tctal Cover				
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u>				Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>

Remarks:
 Sample point did not meet any indicators for wetland hydrology.

APPENDIX C

CCC/LCP JURISDICTIONAL DELINEATION DATA SHEETS

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California Coastal Act Wetland Data Sheet

Project Name: Wavecrest Southern Alignment
 City/Location: Half Moon Bay
 Applicant/Owner: Coastside Land Trust
 WRA Investigator(s): Stephanie Freed, David Zwick
 Date: 1.26.16

County: San Mateo
 LCP (if applicable): Half Moon Bay
 LRR A (Western Mts., Valley, and Coast [WMVC])
 LRR C (Arid West)

SAMPLE POINT ID: SP 1

HABITAT: _____

CCC/LCP WETLAND DETERMINATION

Meets CCC or LCP vegetation criteria? Yes No
 Meets CCC or LCP hydric soil criteria? Yes No
 Meets CCC or LCP hydrology criteria? Yes No
CCC/LCP WETLAND? Yes No

Comments: Sample point located in wetland depression on a coastal field. Sample point observed with hydrophytic vegetation, hydric soils, and wetland hydrology, including inundation up to 16" deep. Wetland boundary based on grade break, shift from Festuca perennis and Rumex acetocella to Rumex crispus and Cyperus eragrostis, and presence of surface water. Sample point taken 48 hours after last rain event. Sample point paired with SP 2.

VEGETATION

*indicator status from the USFWS 1996 National List of wetland species

TREES - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = _____ 20% = _____

SAPLING/SHRUBS - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = _____ 20% = _____

HERBACEOUS - Plot size: 5x10	% Cover	Status*	Dominant?
<i>Cyperus eragrostis</i>	5	FACW	Y
<i>Festuca perennis</i>	3	FAC	Y
<i>Rumex crispus</i>	2	FAC	N
<i>Mentha pulegium</i>	1	OBL	N
TOTAL	11.0		0

50% of stratum cover = 5.5 20% = 2.2

Dominance Test:

Total # of dominant species across all strata: 2

Total # of dominants that are hydrophytic (status of OBL, FACW, or FAC): 2

Percentage of dominants that are hydrophytic: 100%
 [Meets dominance test if >50%]

Prevalence Index:

Total % cover of species across all strata:

OBL: _____ x 1 = _____
 FACW: _____ x 2 = _____
 FAC: _____ x 3 = _____
 FACU: _____ x 4 = _____
 UPL: _____ x 5 = _____

Total: _____ (A) _____ (B)

Prevalence Index (B/A) =
 [Hydrophytic vegetation dominant if B/A ≤ 3.0]

Meets CCC or LCP hydrophytic vegetation criteria? Yes No

Comments: Sample point is dominated by FAC & FACW species and was determined to contain hydrophytic vegetation, as it meets the dominance test.

Project Name: Wavecrest South Sample Point ID: SP 1

SOILS Slope (%): 0-2 Soil map unit: Watsonville Sandy Loam

SOIL PROFILE

Depth	Matrix Color	Redox Color	% and contrast	Redox type	Texture	Comments
0-4	7.5YR 2.5/1				Silt Loam	
4-8	7.5YR 2.5/1				Silt Loam	
8-14	2.5YR 2.5/1	5Y 5/2	25	D	Clay	
		7.5YR 4/6	5		Clay	

All soils:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) [Arid West only]
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)

Loamy and clayey soils only:

- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9) [Arid West only]

Sandy soils only:

- Sandy Mucky Mineral (S1)
 - Sandy Gleyed Matrix (S4)
 - Sandy Redox (S5)
 - Stripped Matrix (S6)
- Test indicators (NRCS v7):
- 2 cm Muck (A10) [WMVC only]
 - Very Shallow Dark Surface (TF12)

Other (explain below)

Meets CCC or LCP hydric soil criteria?

Yes No

Comments: While no hydric soil indicators were observed, this sample point contains naturally problematic seasonally ponded soils. Sample point occurs in a seasonally ponded depression with a restrictive clay layer and lacks hydric soil indicators due to limited saturation depth and saline conditions.

HYDROLOGY (indicators from Corps Regional Supplements, applicable to coastal California only)

Primary indicators (only 1 needed to meet criteria):

- Surface water (A1) Depth (in.): 16"
- High water table (A2) Depth (in.): 0"
- Soil saturation (A3) Depth (in.): 0"
- Water marks (B1) [if in Arid West: Nonriverine only]
- Sediment deposits (B2) [if in Arid West: Nonriverine only]
- Drift deposits (B3) [if in Arid West: Nonriverine only]
- Algal mat or crust (B4) [WMVC only; see B12]
- Iron deposits (B5) [WMVC only]
- Surface soil cracks (B6)
- Inundation visible on aerial imagery (B7)
- Sparsely vegetated concave surface (B8) [WMVC only]
- Water-stained leaves (B9) [Arid West and MLRA 5 only]
- Salt crust (B11)
- Biotic Crust (B12) [Arid West only; see B4]
- Aquatic invertebrates (B13)
- Hydrogen sulfide odor (C1)
- Oxidized rhizospheres (C3)
- Presence of reduced iron (C4)
- Recent iron reduction in tilled soils (C6)

Stunted or stressed plants (D1) [WMVC only]

Secondary indicators (need 2+ to meet criteria):

- Water marks (B1) [Arid West riverine only]
- Sediment deposits (B2) [Arid West riverine only]
- Drift deposits (B3) [Arid West riverine only]
- Water-stained leaves (B9) [WMVC:MLRA 4B only]
- Drainage patterns (B10)
- Dry-season water table (C2)
- Thin muck surface (C7) [Arid West only]
- Crayfish burrows (C8) [Arid West only]
- Saturation visible on aerial imagery (C9)
- Geomorphic position (D2) [WMVC only]
- Shallow aquitard (D3)
- Frost-heave hummocks (D4) [WMVC only]
- Raised ant mounds (D6) [WMVC only]
- FAC-neutral test (D5)** (Does not meet test)

Other (explain below)

Meets CCC or LCP wetland hydrology criteria?

Yes No

Comments: Wetland hydrology indicators observed at the sample point included surface water (16" deep) and sample point meets secondary indicator D5, FAC-Neutral test.

Project Name: Wavecrest South Sample Point ID: SP 2

Project Name: Wavecrest Southern Alignment County: San Mateo

City/Location: Half Moon Bay LCP (if applicable): Half Moon Bay

Applicant/Owner: Coastside Land Trust LRR A (Western Mts., Valley, and Coast [WMVC])

WRA Investigator(s): Stephanie Freed, David Zwick LRR C (Arid West)

Date: 1.26.16 **SAMPLE POINT ID:** SP 2

HABITAT: _____

CCC/LCP WETLAND DETERMINATION

Meets CCC or LCP vegetation criteria? Yes No **Comments:** Sample point located within upland field adjacent to wetland depression on a coastal field. The sample point did not meet wetland indicators for hydrophytic vegetation, hydric soils, or hydrology. Sample point taken 48 hours after last rain event. Sample point paired with SP 1.

Meets CCC or LCP hydric soil criteria? Yes No

Meets CCC or LCP hydrology criteria? Yes No

CCC/LCP WETLAND?

Yes No

VEGETATION

*indicator status from the USFWS 1996 National List of wetland species

TREES - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = 20% =

SAPLING/SHRUBS - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = 20% =

HERBACEOUS - Plot size: 1x10	% Cover	Status*	Dominant?
<i>Festuca perennis</i>	35	FAC	Y
<i>Rumex acetosella</i>	20	FACU	Y
<i>Geranium dissectum</i>	15	UPL	N
<i>Holcus lanatus</i>	15	FAC	N
<i>Helminthotheca echioides</i>	5	FACU	N
<i>Carduus pycnocephalus</i>	2	UPL	N
<i>Sonchus asper</i>	1	FAC	N
<i>Lysimachia arvensis</i>	1	FAC	N
TOTAL	94.0		0

50% of stratum cover = 47.0 20% = 18.8

Dominance Test:

Total # of dominant species across all strata: 2

Total # of dominants that are hydrophytic (status of OBL, FACW, or FAC): 1

Percentage of dominants that are hydrophytic: 50%
[Meets dominance test if >50%]

Prevalence Index:

Total % cover of species across all strata:

OBL: _____ x 1 = _____
 FACW: _____ x 2 = _____
 FAC: _____ x 3 = _____
 FACU: _____ x 4 = _____
 UPL: _____ x 5 = _____

Total: _____ (A) _____ (B)

Prevalence Index (B/A) =
 [Hydrophytic vegetation dominant if B/A ≤ 3.0]

Meets CCC or LCP hydrophytic vegetation criteria? Yes No

Comments: Sample point is dominated by FAC and FACU species and does not meet any hydrophytic vegetation indicators.

California Coastal Act Wetland Data Sheet

SOILS

Slope (%): 0

Soil map unit: Watsonville Sandy Loam

SOIL PROFILE

Depth	Matrix Color	Redox Color	% and contrast	Redox type	Texture	Comments
0-3	10YR 3/2	100			Silt Loam	Moist
3-10	10YR 2/2	100			Silt Loam	Moist

All soils:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) [Arid West only]
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Other (explain below)**

Loamy and clayey soils only:

- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9) [Arid West only]

Sandy soils only:

- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

Test indicators (NRCS v7):

- 2 cm Muck (A10) [WMVC only]
- Very Shallow Dark Surface (TF12)

Meets CCC or LCP hydric soil criteria? Yes No

Comments: Sample point does not meet any hydric soil indicators.

HYDROLOGY (indicators from Corps Regional Supplements, applicable to coastal California only)

Primary indicators (only 1 needed to meet criteria):

- Surface water (A1) Depth (in.): _____
- High water table (A2) Depth (in.): 10"
- Soil saturation (A3) Depth (in.): 0"
- Water marks (B1) [if in Arid West: Nonriverine only]
- Sediment deposits (B2) [if in Arid West: Nonriverine only]
- Drift deposits (B3) [if in Arid West: Nonriverine only]
- Algal mat or crust (B4) [WMVC only; see B12]
- Iron deposits (B5) [WMVC only]
- Surface soil cracks (B6)
- Inundation visible on aerial imagery (B7)
- Sparsely vegetated concave surface (B8) [WMVC only]
- Water-stained leaves (B9) [Arid West and MLRA 5 only]
- Salt crust (B11)
- Biotic Crust (B12) [Arid West only; see B4]
- Aquatic invertebrates (B13)
- Hydrogen sulfide odor (C1)
- Oxidized rhizospheres (C3)
- Presence of reduced iron (C4)
- Recent iron reduction in tilled soils (C6)

- Stunted or stressed plants (D1) [WMVC only]
- Secondary indicators (need 2+ to meet criteria):
- Water marks (B1) [Arid West riverine only]
 - Sediment deposits (B2) [Arid West riverine only]
 - Drift deposits (B3) [Arid West riverine only]
 - Water-stained leaves (B9) [WMVC:MLRA 4B only]
 - Drainage patterns (B10)
 - Dry-season water table (C2)
 - Thin muck surface (C7) [Arid West only]
 - Crayfish burrows (C8) [Arid West only]
 - Saturation visible on aerial imagery (C9)
 - Geomorphic position (D2) [WMVC only]
 - Shallow aquitard (D3)
 - Frost-heave hummocks (D4) [WMVC only]
 - Raised ant mounds (D6) [WMVC only]
 - FAC-neutral test (D5)** (Does not meet test)

Other (explain below)

Meets CCC or LCP wetland hydrology criteria? Yes No

Comments: While water table present at 10" below ground surface, this is likely reflective of approximately 2.73 inches of rain within the eight days preceding the site visit and is not indicative of wetland hydrology conditions.

California Coastal Act Wetland Data Sheet

Project Name: Wavecrest Southern Alignment
 City/Location: Half Moon Bay
 Applicant/Owner: Coastside Land Trust
 WRA Investigator(s): Stephanie Freed, David Zwick
 Date: 1.26.16

County: San Mateo
 LCP (if applicable): Half Moon Bay
 LRR A (Western Mts., Valley, and Coast [WMVC])
 LRR C (Arid West)

SAMPLE POINT ID: SP 3

HABITAT: _____

CCC/LCP WETLAND DETERMINATION

Meets CCC or LCP vegetation criteria? Yes No
 Meets CCC or LCP hydric soil criteria? Yes No
 Meets CCC or LCP hydrology criteria? Yes No
CCC/LCP WETLAND? Yes No

Comments: Sample point located within coastal seasonal wetland swale on a coastal field and was inundated during site visit. The sample point did not meet indicators for hydrophytic vegetation but contained hydric soils and wetland hydrology including inundation up to 2" deep. Sample point taken 48 hours after last rain event. Paired with SP 4.

VEGETATION

*indicator status from the USFWS 1996 National List of wetland species

TREES - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = _____ 20% = _____

SAPLING/SHRUBS - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = _____ 20% = _____

HERBACEOUS - Plot size: 10x10	% Cover	Status*	Dominant?
<i>Polypogon monspeliensis</i>	40	FACW	Y
<i>Rumex acetosella</i>	35	FACU	Y
<i>Holcus lanatus</i>	15	FAC	N
<i>Carduus pycnocephalus</i>	3	UPL	N
<i>Rumex crispus</i>	2	FAC	N
<i>Geranium dissectum</i>	+	UPL	N
<i>Vicia sativa</i>	+	FACU	N
TOTAL	95.0		0

50% of stratum cover = 47.5 20% = 19.0

Dominance Test:

Total # of dominant species across all strata: 2

Total # of dominants that are hydrophytic (status of OBL, FACW, or FAC): 1

Percentage of dominants that are hydrophytic: 50%
[Meets dominance test if >50%]

Prevalence Index: 0-4

Total % cover of species across all strata:

OBL:	_____	x 1 =	_____
FACW	40	x 2 =	80
FAC:	2	x 3 =	6
FACU:	35	x 4 =	140
UPL:	3	x 5 =	15

Total: 80 241
 (A) (B)

Prevalence Index (B/A) = 3.01
[Hydrophytic vegetation dominant if B/A ≤ 3.0]

Meets CCC or LCP hydrophytic vegetation criteria? Yes No

Comments: Sample point is dominated by FACW and FACU species and does not meet any hydrophytic vegetation indicators. For absolute % cover. "+" indicates a trace occurrence.

Project Name: Wavecrest South Sample Point ID: SP 3

SOILS Slope (%): 0-2 Soil map unit: Watsonville Sandy Loam

SOIL PROFILE

Depth	Matrix Color	Redox Color	% and contrast	Redox type	Texture	Comments
0-4	7.5YR 2.5/1				Silty Clay	
4-8	2.5Y 2.5/1	5Y 5/2	35	D	Clay	Mottled
		7.5YR 4/6	5	C	Clay	
8-14	7.5YR 2.5/1				Clay Loam	

All soils:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) [Arid West only]
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Other (explain below)**

Loamy and clayey soils only:

- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9) [Arid West only]

Sandy soils only:

- Sandy Mucky Mineral (S1)
 - Sandy Gleyed Matrix (S4)
 - Sandy Redox (S5)
 - Stripped Matrix (S6)
- Test indicators (NRCS v7):
- 2 cm Muck (A10) [WMVC only]
 - Very Shallow Dark Surface (TF12)

Meets CCC or LCP hydric soil criteria? Yes No

Comments: Sample point meets hydric soil indicator for depleted dark surface (F7).

HYDROLOGY (indicators from Corps Regional Supplements, applicable to coastal California only)

Primary indicators (only 1 needed to meet criteria):

- Surface water (A1) Depth (in.): 2"
- High water table (A2) Depth (in.): _____
- Soil saturation (A3) Depth (in.): _____
- Water marks (B1) [if in Arid West: Nonriverine only]
- Sediment deposits (B2) [if in Arid West: Nonriverine only]
- Drift deposits (B3) [if in Arid West: Nonriverine only]
- Algal mat or crust (B4) [WMVC only; see B12]
- Iron deposits (B5) [WMVC only]
- Surface soil cracks (B6)
- Inundation visible on aerial imagery (B7)
- Sparsely vegetated concave surface (B8) [WMVC only]
- Water-stained leaves (B9) [Arid West and MLRA 5 only]
- Salt crust (B11)
- Biotic Crust (B12) [Arid West only; see B4]
- Aquatic invertebrates (B13)
- Hydrogen sulfide odor (C1)
- Oxidized rhizospheres (C3)
- Presence of reduced iron (C4)
- Recent iron reduction in tilled soils (C6)

- Stunted or stressed plants (D1) [WMVC only]

Secondary indicators (need 2+ to meet criteria):

- Water marks (B1) [Arid West riverine only]
- Sediment deposits (B2) [Arid West riverine only]
- Drift deposits (B3) [Arid West riverine only]
- Water-stained leaves (B9) [WMVC:MLRA 4B only]
- Drainage patterns (B10)
- Dry-season water table (C2)
- Thin muck surface (C7) [Arid West only]
- Crayfish burrows (C8) [Arid West only]
- Saturation visible on aerial imagery (C9)
- Geomorphic position (D2) [WMVC only]
- Shallow aquitard (D3)
- Frost-heave hummocks (D4) [WMVC only]
- Raised ant mounds (D6) [WMVC only]
- FAC-neutral test (D5)** (Does not meet test)

Other (explain below)

Meets CCC or LCP wetland hydrology criteria? Yes No

Comments: Wetland hydrology indicators observed at the sample point included surface water 2" deep and biotic crust.

Project Name: Wavecrest South Sample Point ID: SP 4

Project Name: Wavecrest Southern Alignment County: San Mateo

City/Location: Half Moon Bay LCP (if applicable): Half Moon Bay

Applicant/Owner: Coastside Land Trust LRR A (Western Mts., Valley, and Coast [WMVC])

WRA Investigator(s): Stephanie Freed, David Zwick LRR C (Arid West)

Date: 1.26.16 SAMPLE POINT ID: SP 4

HABITAT: _____

CCC/LCP WETLAND DETERMINATION

Meets CCC or LCP vegetation criteria? Yes No *Comments: Sample point located within upland field adjacent to coastal seasonal wetland swale (SP 3) on a coastal field. The sample point did not meet indicators of hydrophytic vegetation, hydric soils, or wetland hydrology. Sample point taken 48 hours after last rain event.*

Meets CCC or LCP hydric soil criteria? Yes No

Meets CCC or LCP hydrology criteria? Yes No

CCC/LCP WETLAND? Yes No

VEGETATION

*indicator status from the USFWS 1996 National List of wetland species

TREES - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = 20% =

SAPLING/SHRUBS - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = 20% =

HERBACEOUS - Plot size: 10x10	% Cover	Status*	Dominant?
<i>Rumex acetosella</i>	35	FACU	Y
<i>Holcus lanatus</i>	33	FAC	Y
<i>Baccharis pilularis</i>	25	UPL	Y
<i>Carduus pycnocephalus</i>	5	UPL	N
<i>Geranium dissectum</i>	2	UPL	N
TOTAL	100.0		0

50% of stratum cover = 50.0 20% = 20.0

Dominance Test:

Total # of dominant species across all strata: 3

Total # of dominants that are hydrophytic (status of OBL, FACW, or FAC): 1

Percentage of dominants that are hydrophytic: 33%
[Meets dominance test if >50%]

Prevalence Index:

Total % cover of species across all strata:

OBL: _____ x 1 = _____
 FACW: _____ x 2 = _____
 FAC: _____ x 3 = _____
 FACU: _____ x 4 = _____
 UPL: _____ x 5 = _____

Total: _____ (A) _____ (B)

Prevalence Index (B/A) =
 [Hydrophytic vegetation dominant if B/A ≤ 3.0]

Meets CCC or LCP hydrophytic vegetation criteria? Yes No

Comments: Sample point is dominated by FAC, FACU, and UPL species and does not meet any hydrophytic vegetation indicators.

California Coastal Act Wetland Data Sheet

SOILS

Slope (%): 0

Soil map unit: Watsonville Sandy Loam

SOIL PROFILE

Depth	Matrix Color	Redox Color	% and contrast	Redox type	Texture	Comments
0-14	10YR 3/2	7.5YR 4/6	3	C	Silt Loam	

All soils:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) [Arid West only]
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Other (explain below)**

Loamy and clayey soils only:

- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9) [Arid West only]

Sandy soils only:

- Sandy Mucky Mineral (S1)
 - Sandy Gleyed Matrix (S4)
 - Sandy Redox (S5)
 - Stripped Matrix (S6)
- Test indicators (NRCS v7):
- 2 cm Muck (A10) [WMVC only]
 - Very Shallow Dark Surface (TF12)

Meets CCC or LCP hydric soil criteria? Yes No

Comments: Sample point does not meet any hydric soil indicators.

HYDROLOGY (indicators from Corps Regional Supplements, applicable to coastal California only)

Primary indicators (only 1 needed to meet criteria):

- Surface water (A1) Depth (in.): _____
- High water table (A2) Depth (in.): 4"
- Soil saturation (A3) Depth (in.): 0"
- Water marks (B1) [if in Arid West: Nonriverine only]
- Sediment deposits (B2) [if in Arid West: Nonriverine only]
- Drift deposits (B3) [if in Arid West: Nonriverine only]
- Algal mat or crust (B4) [WMVC only; see B12]
- Iron deposits (B5) [WMVC only]
- Surface soil cracks (B6)
- Inundation visible on aerial imagery (B7)
- Sparsely vegetated concave surface (B8) [WMVC only]
- Water-stained leaves (B9) [Arid West and MLRA 5 only]
- Salt crust (B11)
- Biotic Crust (B12) [Arid West only; see B4]
- Aquatic invertebrates (B13)
- Hydrogen sulfide odor (C1)
- Oxidized rhizospheres (C3)
- Presence of reduced iron (C4)
- Recent iron reduction in tilled soils (C6)

- Stunted or stressed plants (D1) [WMVC only]

Secondary indicators (need 2+ to meet criteria):

- Water marks (B1) [Arid West riverine only]
- Sediment deposits (B2) [Arid West riverine only]
- Drift deposits (B3) [Arid West riverine only]
- Water-stained leaves (B9) [WMVC:MLRA 4B only]
- Drainage patterns (B10)
- Dry-season water table (C2)
- Thin muck surface (C7) [Arid West only]
- Crayfish burrows (C8) [Arid West only]
- Saturation visible on aerial imagery (C9)
- Geomorphic position (D2) [WMVC only]
- Shallow aquitard (D3)
- Frost-heave hummocks (D4) [WMVC only]
- Raised ant mounds (D6) [WMVC only]
- FAC-neutral test (D5)** (Does not meet test)

Other (explain below)

Meets CCC or LCP wetland hydrology criteria? Yes No

Comments: While the water table present up to 4" below ground surface, this is likely reflective of approximately 2.73 inches of rain within the eight days preceding the site visit and is not indicative of wetland hydrology conditions.

California Coastal Act Wetland Data Sheet

Project Name: Wavecrest Southern Alignment
 City/Location: Half Moon Bay
 Applicant/Owner: Coastside Land Trust
 WRA Investigator(s): Stephanie Freed, David Zwick
 Date: 1.26.16

County: San Mateo
 LCP (if applicable): Half Moon Bay
 LRR A (Western Mts., Valley, and Coast [WMVC])
 LRR C (Arid West)

SAMPLE POINT ID: SP 5

HABITAT: _____

CCC/LCP WETLAND DETERMINATION

Meets CCC or LCP vegetation criteria? Yes No
 Meets CCC or LCP hydric soil criteria? Yes No
 Meets CCC or LCP hydrology criteria? Yes No
CCC/LCP WETLAND? Yes No

Comments: Sample point located within wetland depression and met wetland indicators for hydrophytic vegetation, hydric soils, and wetland hydrology. Wetland boundary determined based on grade break, shift from Rumex acetocella to Eleocharis macrostachya and Juncus phaeocephalus, and presence of surface water. Sample point taken 48 hours after last rain event. Sample point paired with SP 6.

VEGETATION

*indicator status from the USFWS 1996 National List of wetland species

TREES - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = _____ 20% = _____

SAPLING/SHRUBS - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = _____ 20% = _____

HERBACEOUS - Plot size: 10x5	% Cover	Status*	Dominant?
<i>Eleocharis macrostachya</i>	30	OBL	Y
<i>Juncus phaeocephalus</i>	20	FACW	Y
<i>Rumex crispis</i>	5	FAC	N
<i>Cyperus eragrostis</i>	3	FACW	N
<i>Mentha pulegium</i>	1	OBL	N
TOTAL	59.0		0

50% of stratum cover = 29.5 20% = 11.8

Dominance Test:

Total # of dominant species across all strata: 2

Total # of dominants that are hydrophytic (status of OBL, FACW, or FAC): 2

Percentage of dominants that are hydrophytic: 100%
 [Meets dominance test if >50%]

Prevalence Index:

Total % cover of species across all strata:
 OBL: _____ x 1 = _____
 FACW: _____ x 2 = _____
 FAC: _____ x 3 = _____
 FACU: _____ x 4 = _____
 UPL: _____ x 5 = _____

Total: _____ (A) _____ (B)

Prevalence Index (B/A) =
 [Hydrophytic vegetation dominant if B/A ≤ 3.0]

Meets CCC or LCP hydrophytic vegetation criteria? Yes No

Comments: Sample point is dominated by OBL & FACW species and was determined to contain hydrophytic vegetation, as it meets the dominance test.

Project Name: Wavcrest South Sample Point ID: SP 5

SOILS Slope (%): 0-2 Soil map unit: Watsonville Sandy Loam

SOIL PROFILE

Depth	Matrix Color	Redox Color	% and contrast	Redox type	Texture	Comments
0-4	7.5YR 2.5/1				Silty Clay	Saturated
4-8	2.5Y 2.5/1	5Y 5/2	35	D	Clay	
		7.5YR 4/6	5	C	Clay	
8-14	7.5YR 2.5/1				Clay Loam	

All soils:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) [Arid West only]
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Other (explain below)**

Loamy and clayey soils only:

- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9) [Arid West only]

Sandy soils only:

- Sandy Mucky Mineral (S1)
 - Sandy Gleyed Matrix (S4)
 - Sandy Redox (S5)
 - Stripped Matrix (S6)
- Test indicators (NRCS v7):
- 2 cm Muck (A10) [WMVC only]
 - Very Shallow Dark Surface (TF12)

Meets CCC or LCP hydric soil criteria? Yes No

Comments: Sample point meets hydric soil indicator for depleted dark surface (F7).

HYDROLOGY (indicators from Corps Regional Supplements, applicable to coastal California only)

Primary indicators (only 1 needed to meet criteria):

- Surface water (A1) Depth (in.): 2"
- High water table (A2) Depth (in.): 0"
- Soil saturation (A3) Depth (in.): 0"
- Water marks (B1) [if in Arid West: Nonriverine only]
- Sediment deposits (B2) [if in Arid West: Nonriverine only]
- Drift deposits (B3) [if in Arid West: Nonriverine only]
- Algal mat or crust (B4) [WMVC only; see B12]
- Iron deposits (B5) [WMVC only]
- Surface soil cracks (B6)
- Inundation visible on aerial imagery (B7)
- Sparsely vegetated concave surface (B8) [WMVC only]
- Water-stained leaves (B9) [Arid West and MLRA 5 only]
- Salt crust (B11)
- Biotic Crust (B12) [Arid West only; see B4]
- Aquatic invertebrates (B13)
- Hydrogen sulfide odor (C1)
- Oxidized rhizospheres (C3)
- Presence of reduced iron (C4)
- Recent iron reduction in tilled soils (C6)

- Stunted or stressed plants (D1) [WMVC only]

Secondary indicators (need 2+ to meet criteria):

- Water marks (B1) [Arid West riverine only]
- Sediment deposits (B2) [Arid West riverine only]
- Drift deposits (B3) [Arid West riverine only]
- Water-stained leaves (B9) [WMVC:MLRA 4B only]
- Drainage patterns (B10)
- Dry-season water table (C2)
- Thin muck surface (C7) [Arid West only]
- Crayfish burrows (C8) [Arid West only]
- Saturation visible on aerial imagery (C9)
- Geomorphic position (D2) [WMVC only]
- Shallow aquitard (D3)
- Frost-heave hummocks (D4) [WMVC only]
- Raised ant mounds (D6) [WMVC only]
- FAC-neutral test (D5)** (Does not meet test)

Other (explain below)

Meets CCC or LCP wetland hydrology criteria? Yes No

Comments: Wetland hydrology indicators observed at the sample point included surface water 2" deep, biotic crust, and sample point meets secondary indicator D5, FAC-Neutral test.

Project Name: Wavecrest South Sample Point ID: SP 6

Project Name: Wavecrest Southern Alignment County: San Mateo

City/Location: Half Moon Bay LCP (if applicable): Half Moon Bay

Applicant/Owner: Coastside Land Trust LRR A (Western Mts., Valley, and Coast [WMVC])

WRA Investigator(s): Stephanie Freed, David Zwick LRR C (Arid West)

Date: 1.26.16 SAMPLE POINT ID: SP 6

HABITAT: _____

CCC/LCP WETLAND DETERMINATION

- Meets CCC or LCP vegetation criteria? Yes No
 Meets CCC or LCP hydric soil criteria? Yes No
 Meets CCC or LCP hydrology criteria? Yes No
CCC/LCP WETLAND? Yes No

Comments: Sample point located within upland field on a coastal field adjacent to wetland depression (SP 5). The sample point did not meet wetland indicators for hydrophytic vegetation, hydric soils, or wetland hydrology. Sample point taken 48 hours after last rain event.

VEGETATION

*indicator status from the USFWS 1996 National List of wetland species

TREES - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = 20% =

SAPLING/SHRUBS - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = 20% =

HERBACEOUS - Plot size: 10x10	% Cover	Status*	Dominant?
<i>Chlorogalum pomeridianum</i>	20	Y	UPL
<i>Baccharis pilularis</i>	20	Y	UPL
<i>Achillea millefolium</i>	10	N	FACU
<i>Holcus lanatus</i>	10	N	FAC
<i>Fragaria chiloensis</i>	2	N	FACU
<i>Juncus phaeocephalus</i>	1	N	FACW
<i>Juncus bufonius</i>	1	N	FACW
TOTAL	64.0		0

50% of stratum cover = 32.0 20% = 12.8

Dominance Test:

Total # of dominant species across all strata: 2

Total # of dominants that are hydrophytic (status of OBL, FACW, or FAC): 0

Percentage of dominants that are hydrophytic: 0%
[Meets dominance test if >50%]

Prevalence Index:

Total % cover of species across all strata:
 OBL: _____ x 1 = _____
 FACW: _____ x 2 = _____
 FAC: _____ x 3 = _____
 FACU: _____ x 4 = _____
 UPL: _____ x 5 = _____

Total: _____ (A) _____ (B)

Prevalence Index (B/A) =
[Hydrophytic vegetation dominant if B/A ≤ 3.0]

Meets CCC or LCP hydrophytic vegetation criteria? Yes No

Comments: Sample point is dominated by UPL species and does not meet any hydrophytic vegetation indicators.

California Coastal Act Wetland Data Sheet

SOILS Slope (%): 0-2 Soil map unit: Terrace escarpments

SOIL PROFILE

Depth	Matrix Color	Redox Color	% and contrast	Redox type	Texture	Comments
0-9	7.5YR 3/2				Clay Loam	
9-11	10YR 3/2				Clay Loam	
11-14	7.5YR 2.5/1	7.5YR 5/8	6	C	Clay	
		10YR 5/6	9	C	Clay	

All soils:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) [Arid West only]
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Other (explain below)**

Loamy and clayey soils only:

- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9) [Arid West only]

Sandy soils only:

- Sandy Mucky Mineral (S1)
 - Sandy Gleyed Matrix (S4)
 - Sandy Redox (S5)
 - Stripped Matrix (S6)
- Test indicators (NRCS v7):
- 2 cm Muck (A10) [WMVC only]
 - Very Shallow Dark Surface (TF12)

Meets CCC or LCP hydric soil criteria? Yes No

Comments: Sample point does not meet any criteria for hydric soil indicators.

HYDROLOGY (indicators from Corps Regional Supplements, applicable to coastal California only)

Primary indicators (only 1 needed to meet criteria):

- Surface water (A1) Depth (in.): _____
- High water table (A2) Depth (in.): _____
- Soil saturation (A3) Depth (in.): _____
- Water marks (B1) [if in Arid West: Nonriverine only]
- Sediment deposits (B2) [if in Arid West: Nonriverine only]
- Drift deposits (B3) [if in Arid West: Nonriverine only]
- Algal mat or crust (B4) [WMVC only; see B12]
- Iron deposits (B5) [WMVC only]
- Surface soil cracks (B6)
- Inundation visible on aerial imagery (B7)
- Sparsely vegetated concave surface (B8) [WMVC only]
- Water-stained leaves (B9) [Arid West and MLRA 5 only]
- Salt crust (B11)
- Biotic Crust (B12) [Arid West only; see B4]
- Aquatic invertebrates (B13)
- Hydrogen sulfide odor (C1)
- Oxidized rhizospheres (C3)
- Presence of reduced iron (C4)
- Recent iron reduction in tilled soils (C6)

- Stunted or stressed plants (D1) [WMVC only]
- Secondary indicators (need 2+ to meet criteria):
- Water marks (B1) [Arid West riverine only]
 - Sediment deposits (B2) [Arid West riverine only]
 - Drift deposits (B3) [Arid West riverine only]
 - Water-stained leaves (B9) [WMVC:MLRA 4B only]
 - Drainage patterns (B10)
 - Dry-season water table (C2)
 - Thin muck surface (C7) [Arid West only]
 - Crayfish burrows (C8) [Arid West only]
 - Saturation visible on aerial imagery (C9)
 - Geomorphic position (D2) [WMVC only]
 - Shallow aquitard (D3)
 - Frost-heave hummocks (D4) [WMVC only]
 - Raised ant mounds (D6) [WMVC only]
 - FAC-neutral test (D5)** (Does not meet test)

Other (explain below)

Meets CCC or LCP wetland hydrology criteria? Yes No

Comments: Sample point does not meet criteria for hydrology indicators.

California Coastal Act Wetland Data Sheet

Project Name: Wavecrest Southern Alignment
 City/Location: Half Moon Bay
 Applicant/Owner: Coastside Land Trust
 WRA Investigator(s): Stephanie Freed, David Zwick
 Date: 1.26.16

County: San Mateo
 LCP (if applicable): Half Moon Bay
 LRR A (Western Mts., Valley, and Coast [WMVC])
 LRR C (Arid West)

SAMPLE POINT ID: SP 7

HABITAT: _____

CCC/LCP WETLAND DETERMINATION

Meets CCC or LCP vegetation criteria? Yes No
 Meets CCC or LCP hydric soil criteria? Yes No
 Meets CCC or LCP hydrology criteria? Yes No
CCC/LCP WETLAND? Yes No

Comments: Sample point located within ravine above OHWM. The sample point met wetland indicators for hydrophytic vegetation and wetland hydrology but did not meet any indicators for hydric soils. Sample point taken 48 hours after last rain event.

VEGETATION

*indicator status from the USFWS 1996 National List of wetland species

TREES - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = _____ 20% = _____

SAPLING/SHRUBS - Plot size: 10x10	% Cover	Status*	Dominant?
<i>Salix lasiolepis</i>	50	FACW	Y
TOTAL	50.0		0

50% of stratum cover = 25.0 20% = 10.0

HERBACEOUS - Plot size: 10x10	% Cover	Status*	Dominant?
<i>Juncus mexicanus</i>	80	FACW	Y
<i>Rubus ursinus</i>	5	FAC	N
<i>Baccharis pilularis</i>	5	UPL	N
<i>Rumex crispis</i>	5	FAC	N
<i>Chlorogalum pomeridianum</i>	1	UPL	N
<i>Geranium dissectum</i>	1	UPL	N
<i>Cirsium vulgare</i>	1	FACU	N
<i>Galium aparine</i>	+	FACU	N
TOTAL	98.0		0

50% of stratum cover = 49.0 20% = 19.6

Dominance Test:

Total # of dominant species across all strata: 2

Total # of dominants that are hydrophytic (status of OBL, FACW, or FAC): 2

Percentage of dominants that are hydrophytic: 100%
 [Meets dominance test if >50%]

Prevalence Index:

Total % cover of species across all strata:

OBL: _____ x 1 = _____
 FACW: _____ x 2 = _____
 FAC: _____ x 3 = _____
 FACU: _____ x 4 = _____
 UPL: _____ x 5 = _____

Total: _____ (A) _____ (B)

Prevalence Index (B/A) =
 [Hydrophytic vegetation dominant if B/A ≤ 3.0]

Meets CCC or LCP hydrophytic vegetation criteria? Yes No

Comments: Sample point is dominated by FACW species and was determined to contain hydrophytic vegetation, as it meets the dominance test. For absolute % cover. "+" indicates a trace occurrence.

Project Name: Wavcrest South Sample Point ID: SP 7

SOILS Slope (%): 5 Soil map unit: Tierra and Watsonville Soil Materials

SOIL PROFILE

Depth	Matrix Color	Redox Color	% and contrast	Redox type	Texture	Comments
0-9	2.5Y 5/3	5Y 4/1	10	C	Sand	
9-14	2.5Y 5/3	7.5YR 4/4	11	C	Sand	

All soils:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) [Arid West only]
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Other (explain below)**

Loamy and clayey soils only:

- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9) [Arid West only]

Sandy soils only:

- Sandy Mucky Mineral (S1)
 - Sandy Gleyed Matrix (S4)
 - Sandy Redox (S5)
 - Stripped Matrix (S6)
- Test indicators (NRCS v7):
- 2 cm Muck (A10) [WMVC only]
 - Very Shallow Dark Surface (TF12)

Meets CCC or LCP hydric soil criteria? Yes No

Comments: Sample point does not meet criteria for hydric soil indicators.

HYDROLOGY (indicators from Corps Regional Supplements, applicable to coastal California only)

Primary indicators (only 1 needed to meet criteria):

- Surface water (A1) Depth (in.): _____
- High water table (A2) Depth (in.): _____
- Soil saturation (A3) Depth (in.): _____
- Water marks (B1) [if in Arid West: Nonriverine only]
- Sediment deposits (B2) [if in Arid West: Nonriverine only]
- Drift deposits (B3) [if in Arid West: Nonriverine only]
- Algal mat or crust (B4) [WMVC only; see B12]
- Iron deposits (B5) [WMVC only]
- Surface soil cracks (B6)
- Inundation visible on aerial imagery (B7)
- Sparsely vegetated concave surface (B8) [WMVC only]
- Water-stained leaves (B9) [Arid West and MLRA 5 only]
- Salt crust (B11)
- Biotic Crust (B12) [Arid West only; see B4]
- Aquatic invertebrates (B13)
- Hydrogen sulfide odor (C1)
- Oxidized rhizospheres (C3)
- Presence of reduced iron (C4)
- Recent iron reduction in tilled soils (C6)

- Stunted or stressed plants (D1) [WMVC only]

Secondary indicators (need 2+ to meet criteria):

- Water marks (B1) [Arid West riverine only]
- Sediment deposits (B2) [Arid West riverine only]
- Drift deposits (B3) [Arid West riverine only]
- Water-stained leaves (B9) [WMVC:MLRA 4B only]
- Drainage patterns (B10)
- Dry-season water table (C2)
- Thin muck surface (C7) [Arid West only]
- Crayfish burrows (C8) [Arid West only]
- Saturation visible on aerial imagery (C9)
- Geomorphic position (D2) [WMVC only]
- Shallow aquitard (D3)
- Frost-heave hummocks (D4) [WMVC only]
- Raised ant mounds (D6) [WMVC only]
- FAC-neutral test (D5)** (Does not meet test)

Other (explain below)

Meets CCC or LCP wetland hydrology criteria? Yes No

Comments: Wetland hydrology indicators observed at the sample point included biotic crust and FAC-Neutral Test.

Project Name: Wavecrest South Sample Point ID: SP 8

Project Name: Wavecrest Southern Alignment County: San Mateo

City/Location: Half Moon Bay LCP (if applicable): Half Moon Bay

Applicant/Owner: Coastside Land Trust LRR A (Western Mts., Valley, and Coast [WMCV])

WRA Investigator(s): Stephanie Freed, David Zwick LRR C (Arid West)

Date: 1.27.16 SAMPLE POINT ID: SP 8

HABITAT: _____

CCC/LCP WETLAND DETERMINATION

Meets CCC or LCP vegetation criteria? Yes No

Meets CCC or LCP hydric soil criteria? Yes No

Meets CCC or LCP hydrology criteria? Yes No

CCC/LCP WETLAND? Yes No

Comments: Sample point located within wetland swale on a coastal field. Sample point met wetland indicators for hydrophytic vegetation, hydric soils, and wetland hydrology including inundation up to 4" deep. Wetland boundary based on vegetative shift from *Juncus phaeocephalus* to upland species such as *Horkelia californica* and *Baccharis pilularis*, grade break, and absence of surface water. Sample point taken 48 hours after last rain event. Paired with SP 9.

VEGETATION

*indicator status from the USFWS 1996 National List of wetland species

TREES - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = 20% =

SAPLING/SHRUBS - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = 20% =

HERBACEOUS - Plot size: 10x10	% Cover	Status*	Dominant?
<i>Juncus phaeocephalus</i>	10	FACW	Y
<i>Rumex crispis</i>	5	FAC	Y
<i>Mentha pulegium</i>	2	OBL	N
TOTAL	17.0		0

50% of stratum cover = 8.5 20% = 3.4

Dominance Test:

Total # of dominant species across all strata:

Total # of dominants that are hydrophytic (status of OBL, FACW, or FAC):

Percentage of dominants that are hydrophytic:
[Meets dominance test if >50%]

Prevalence Index:

Total % cover of species across all strata:

OBL: _____ x 1 = _____
 FACW: _____ x 2 = _____
 FAC: _____ x 3 = _____
 FACU: _____ x 4 = _____
 UPL: _____ x 5 = _____

Total: _____ (A) _____ (B)

Prevalence Index (B/A) =
 [Hydrophytic vegetation dominant if B/A ≤ 3.0]

Meets CCC or LCP hydrophytic vegetation criteria? Yes No

Comments: Sample point is dominated by FAC & FACW species and was determined to contain hydrophytic vegetation, as it meets the dominance test.

California Coastal Act Wetland Data Sheet

SOILS Slope (%): 0-2 Soil map unit: Watsonville Loam

SOIL PROFILE

Depth	Matrix Color	Redox Color	% and contrast	Redox type	Texture	Comments
0-12	10YR 2/2				Clay Loam	Saturated
12-14	2.5Y 4/2	7.5YR 6/8	15	C	Clay Loam	Saturated

All soils:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) [Arid West only]
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)

Loamy and clayey soils only:

- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9) [Arid West only]

Sandy soils only:

- Sandy Mucky Mineral (S1)
 - Sandy Gleyed Matrix (S4)
 - Sandy Redox (S5)
 - Stripped Matrix (S6)
- Test indicators (NRCS v7):
- 2 cm Muck (A10) [WMVC only]
 - Very Shallow Dark Surface (TF12)

Other (explain below)

Meets CCC or LCP hydric soil criteria? Yes No

Comments: While no hydric soil indicators were observed, this sample point contains naturally problematic seasonally ponded soils. Sample point occurs in a seasonally ponded depression with a restrictive clay layer and lacks hydric soil indicators due to limited saturation depth and saline conditions.

HYDROLOGY (indicators from Corps Regional Supplements, applicable to coastal California only)

Primary indicators (only 1 needed to meet criteria):

- Surface water (A1) Depth (in.): 4"
- High water table (A2) Depth (in.): 0"
- Soil saturation (A3) Depth (in.): 0"
- Water marks (B1) [if in Arid West: Nonriverine only]
- Sediment deposits (B2) [if in Arid West: Nonriverine only]
- Drift deposits (B3) [if in Arid West: Nonriverine only]
- Algal mat or crust (B4) [WMVC only; see B12]
- Iron deposits (B5) [WMVC only]
- Surface soil cracks (B6)
- Inundation visible on aerial imagery (B7)
- Sparsely vegetated concave surface (B8) [WMVC only]
- Water-stained leaves (B9) [Arid West and MLRA 5 only]
- Salt crust (B11)
- Biotic Crust (B12) [Arid West only; see B4]
- Aquatic invertebrates (B13)
- Hydrogen sulfide odor (C1)
- Oxidized rhizospheres (C3)
- Presence of reduced iron (C4)
- Recent iron reduction in tilled soils (C6)

- Stunted or stressed plants (D1) [WMVC only]
- Secondary indicators (need 2+ to meet criteria):
- Water marks (B1) [Arid West riverine only]
 - Sediment deposits (B2) [Arid West riverine only]
 - Drift deposits (B3) [Arid West riverine only]
 - Water-stained leaves (B9) [WMVC:MLRA 4B only]
 - Drainage patterns (B10)
 - Dry-season water table (C2)
 - Thin muck surface (C7) [Arid West only]
 - Crayfish burrows (C8) [Arid West only]
 - Saturation visible on aerial imagery (C9)
 - Geomorphic position (D2) [WMVC only]
 - Shallow aquitard (D3)
 - Frost-heave hummocks (D4) [WMVC only]
 - Raised ant mounds (D6) [WMVC only]
 - FAC-neutral test (D5)** (Does not meet test)

Other (explain below)

Meets CCC or LCP wetland hydrology criteria? Yes No

Comments: Wetland hydrology indicators observed at the sample point included surface water 4" deep, biotic crust, and sample point meets secondary indicator D5, FAC-Neutral test.

California Coastal Act Wetland Data Sheet

Project Name: Wavecrest Southern Alignment
 City/Location: Half Moon Bay
 Applicant/Owner: Coastside Land Trust
 WRA Investigator(s): Stephanie Freed, David Zwick
 Date: 1.27.16

County: San Mateo
 LCP (if applicable): Half Moon Bay
 LRR A (Western Mts., Valley, and Coast [WMVC])
 LRR C (Arid West)

SAMPLE POINT ID: SP 9

HABITAT: _____

CCC/LCP WETLAND DETERMINATION

Meets CCC or LCP vegetation criteria? Yes No
 Meets CCC or LCP hydric soil criteria? Yes No
 Meets CCC or LCP hydrology criteria? Yes No
CCC/LCP WETLAND? Yes No

Comments: Sample point located within upland field adjacent to wetland swale (SP 8) on a coastal field. The sample point did not meet wetland indicators for hydrophytic vegetation, hydric soils, and wetland hydrology. Sample point taken 48 hours after last rain event.

VEGETATION

*indicator status from the USFWS 1996 National List of wetland species

TREES - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = _____ 20% = _____

SAPLING/SHRUBS - Plot size: 10x10	% Cover	Status*	Dominant?
<i>Baccharis pilularis</i>	60	UPL	Y
TOTAL	60.0		0

50% of stratum cover = 30.0 20% = 12.0

HERBACEOUS - Plot size: 10x10	% Cover	Status*	Dominant?
<i>Horkelia californica</i>	40	UPL	Y
<i>Conium maculatum</i>	15	FACW	Y
<i>Scrophularia californica</i>	10	FAC	N
<i>Galium aparine</i>	1	FACU	N
TOTAL	66.0		0

50% of stratum cover = 33.0 20% = 13.2

Dominance Test:

Total # of dominant species across all strata: 3

Total # of dominants that are hydrophytic (status of OBL, FACW, or FAC): 1

Percentage of dominants that are hydrophytic: 33%
[Meets dominance test if >50%]

Prevalence Index:

Total % cover of species across all strata:
 OBL: _____ x 1 = _____
 FACW: _____ x 2 = _____
 FAC: _____ x 3 = _____
 FACU: _____ x 4 = _____
 UPL: _____ x 5 = _____

Total: _____ (A) _____ (B)

Prevalence Index (B/A) =
[Hydrophytic vegetation dominant if B/A ≤ 3.0]

Meets CCC or LCP hydrophytic vegetation criteria? Yes No

Comments: Sample point is dominated by UPL and FACW species and does not meet any hydrophytic vegetation indicators.

Project Name: Wavcrest South Sample Point ID: SP 9

SOILS Slope (%): 0 Soil map unit: Watsonville Loam

SOIL PROFILE

Depth	Matrix Color	Redox Color	% and contrast	Redox type	Texture	Comments
0-10	10YR 3/2				Loam	Moist
10-14	10YR 4/2				Clay Loam	

All soils:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) [Arid West only]
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Other (explain below)**

Loamy and clayey soils only:

- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9) [Arid West only]

Sandy soils only:

- Sandy Mucky Mineral (S1)
 - Sandy Gleyed Matrix (S4)
 - Sandy Redox (S5)
 - Stripped Matrix (S6)
- Test indicators (NRCS v7):
- 2 cm Muck (A10) [WMVC only]
 - Very Shallow Dark Surface (TF12)

Meets CCC or LCP hydric soil criteria? Yes No

Comments: Sample point does not meet criteria for hydric soil indicators.

HYDROLOGY (indicators from Corps Regional Supplements, applicable to coastal California only)

Primary indicators (only 1 needed to meet criteria):

- Surface water (A1) Depth (in.): _____
- High water table (A2) Depth (in.): _____
- Soil saturation (A3) Depth (in.): _____
- Water marks (B1) [if in Arid West: Nonriverine only]
- Sediment deposits (B2) [if in Arid West: Nonriverine only]
- Drift deposits (B3) [if in Arid West: Nonriverine only]
- Algal mat or crust (B4) [WMVC only; see B12]
- Iron deposits (B5) [WMVC only]
- Surface soil cracks (B6)
- Inundation visible on aerial imagery (B7)
- Sparsely vegetated concave surface (B8) [WMVC only]
- Water-stained leaves (B9) [Arid West and MLRA 5 only]
- Salt crust (B11)
- Biotic Crust (B12) [Arid West only; see B4]
- Aquatic invertebrates (B13)
- Hydrogen sulfide odor (C1)
- Oxidized rhizospheres (C3)
- Presence of reduced iron (C4)
- Recent iron reduction in tilled soils (C6)

- Stunted or stressed plants (D1) [WMVC only]

Secondary indicators (need 2+ to meet criteria):

- Water marks (B1) [Arid West riverine only]
- Sediment deposits (B2) [Arid West riverine only]
- Drift deposits (B3) [Arid West riverine only]
- Water-stained leaves (B9) [WMVC:MLRA 4B only]
- Drainage patterns (B10)
- Dry-season water table (C2)
- Thin muck surface (C7) [Arid West only]
- Crayfish burrows (C8) [Arid West only]
- Saturation visible on aerial imagery (C9)
- Geomorphic position (D2) [WMVC only]
- Shallow aquitard (D3)
- Frost-heave hummocks (D4) [WMVC only]
- Raised ant mounds (D6) [WMVC only]
- FAC-neutral test (D5)** (Does not meet test)

Other (explain below)

Meets CCC or LCP wetland hydrology criteria? Yes No

Comments: No wetland hydrology indicators were observed at the sample point.

Project Name: Wavecrest South Sample Point ID: SP 10

Project Name: Wavecrest Southern Alignment County: San Mateo

City/Location: Half Moon Bay LCP (if applicable): Half Moon Bay

Applicant/Owner: Coastside Land Trust LRR A (Western Mts., Valley, and Coast [WMVC])

WRA Investigator(s): Stephanie Freed, David Zwick LRR C (Arid West)

Date: 1.27.16 SAMPLE POINT ID: SP 10

HABITAT: _____

CCC/LCP WETLAND DETERMINATION

Meets CCC or LCP vegetation criteria? Yes No

Meets CCC or LCP hydric soil criteria? Yes No

Meets CCC or LCP hydrology criteria? Yes No

CCC/LCP WETLAND? Yes No

Comments: Sample point located within wetland depression. The sample point met wetland indicators for hydrophytic vegetation, hydric soils, and wetland hydrology including inundation up to 6" deep. Wetland boundary based on grade break, shift from *Baccharis pilularis* to *Mentha pulegium* and *Juncus phaeocephalus* and presence of surface water. Sample point taken 48 hours after last rain event. Paired with SP 11.

VEGETATION

*indicator status from the USFWS 1996 National List of wetland species

TREES - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = _____ 20% = _____

SAPLING/SHRUBS - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = _____ 20% = _____

HERBACEOUS - Plot size: 10x4	% Cover	Status*	Dominant?
<i>Mentha pulegium</i>	30	OBL	Y
<i>Juncus phaeocephalus</i>	10	FACW	N
<i>Holcus lanatus</i>	10	FAC	N
<i>Rumex crispis</i>	2	FAC	N
TOTAL	52.0		0

50% of stratum cover = 26.0 20% = 10.4

Dominance Test:

Total # of dominant species across all strata: 1

Total # of dominants that are hydrophytic (status of OBL, FACW, or FAC): 1

Percentage of dominants that are hydrophytic: 100%
[Meets dominance test if >50%]

Prevalence Index:

Total % cover of species across all strata:

OBL: _____ x 1 = _____
 FACW: _____ x 2 = _____
 FAC: _____ x 3 = _____
 FACU: _____ x 4 = _____
 UPL: _____ x 5 = _____

Total: _____ (A) _____ (B)

Prevalence Index (B/A) =
 [Hydrophytic vegetation dominant if B/A ≤ 3.0]

Meets CCC or LCP hydrophytic vegetation criteria? Yes No

Comments: Sample point is dominated by OBL species and was determined to contain hydrophytic vegetation, as it meets the dominance test.

California Coastal Act Wetland Data Sheet

SOILS Slope (%): 0-2 Soil map unit: Watsonville Sandy Loam

SOIL PROFILE

Depth	Matrix Color	Redox Color	% and contrast	Redox type	Texture	Comments
0-12	7.5YR 3/1				Clay Loam	Saturated
12-14	10YR 3/2	5YR 6/8	15	C	Clay	Mg deposits

All soils:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) [Arid West only]
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)

Loamy and clayey soils only:

- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9) [Arid West only]

Sandy soils only:

- Sandy Mucky Mineral (S1)
 - Sandy Gleyed Matrix (S4)
 - Sandy Redox (S5)
 - Stripped Matrix (S6)
- Test indicators (NRCS v7):
- 2 cm Muck (A10) [WMVC only]
 - Very Shallow Dark Surface (TF12)

Other (explain below)

Meets CCC or LCP hydric soil criteria? Yes No

Comments: While no hydric soil indicators were observed, this sample point contains naturally problematic seasonally ponded soils. Sample point occurs in a seasonally ponded depression with a restrictive clay layer and lacks hydric soil indicators due to limited saturation depth and saline conditions.

HYDROLOGY (indicators from Corps Regional Supplements, applicable to coastal California only)

Primary indicators (only 1 needed to meet criteria):

- Surface water (A1) Depth (in.): 6"
- High water table (A2) Depth (in.): 0"
- Soil saturation (A3) Depth (in.): 0"
- Water marks (B1) [if in Arid West: Nonriverine only]
- Sediment deposits (B2) [if in Arid West: Nonriverine only]
- Drift deposits (B3) [if in Arid West: Nonriverine only]
- Algal mat or crust (B4) [WMVC only; see B12]
- Iron deposits (B5) [WMVC only]
- Surface soil cracks (B6)
- Inundation visible on aerial imagery (B7)
- Sparsely vegetated concave surface (B8) [WMVC only]
- Water-stained leaves (B9) [Arid West and MLRA 5 only]
- Salt crust (B11)
- Biotic Crust (B12) [Arid West only; see B4]
- Aquatic invertebrates (B13)
- Hydrogen sulfide odor (C1)
- Oxidized rhizospheres (C3)
- Presence of reduced iron (C4)
- Recent iron reduction in tilled soils (C6)

- Stunted or stressed plants (D1) [WMVC only]
- Secondary indicators (need 2+ to meet criteria):
- Water marks (B1) [Arid West riverine only]
 - Sediment deposits (B2) [Arid West riverine only]
 - Drift deposits (B3) [Arid West riverine only]
 - Water-stained leaves (B9) [WMVC:MLRA 4B only]
 - Drainage patterns (B10)
 - Dry-season water table (C2)
 - Thin muck surface (C7) [Arid West only]
 - Crayfish burrows (C8) [Arid West only]
 - Saturation visible on aerial imagery (C9)
 - Geomorphic position (D2) [WMVC only]
 - Shallow aquitard (D3)
 - Frost-heave hummocks (D4) [WMVC only]
 - Raised ant mounds (D6) [WMVC only]
 - FAC-neutral test (D5)** (Does not meet test)

Other (explain below)

Meets CCC or LCP wetland hydrology criteria? Yes No

Comments: Wetland hydrology indicators observed at the sample point included surface water up to 6" deep, biotic crust, and sample point meets secondary indicator D5, FAC-Neutral test.

California Coastal Act Wetland Data Sheet

Project Name: Wavecrest Southern Alignment
 City/Location: Half Moon Bay
 Applicant/Owner: Coastside Land Trust
 WRA Investigator(s): Stephanie Freed, David Zwick
 Date: 1.27.16

County: San Mateo
 LCP (if applicable): Half Moon Bay
 LRR A (Western Mts., Valley, and Coast [WMVC])
 LRR C (Arid West)

SAMPLE POINT ID: SP 11

HABITAT: _____

CCC/LCP WETLAND DETERMINATION

Meets CCC or LCP vegetation criteria? Yes No
 Meets CCC or LCP hydric soil criteria? Yes No
 Meets CCC or LCP hydrology criteria? Yes No
CCC/LCP WETLAND? Yes No

Comments: Sample point located within upland field adjacent to wetland depression (SP 10) on a coastal field. The sample point did not meet wetland indicators for hydrophytic vegetation, hydric soils, and wetland hydrology. Sample point taken 48 hours after last rain event.

VEGETATION

*indicator status from the USFWS 1996 National List of wetland species

TREES - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = _____ 20% = _____

SAPLING/SHRUBS - Plot size: 30x30	% Cover	Status*	Dominant?
<i>Baccharis pilularis</i>	30	UPL	Y
TOTAL	30.0		0

50% of stratum cover = 15.0 20% = 6.0

HERBACEOUS - Plot size: 10x10	% Cover	Status*	Dominant?
<i>Holcus lanatus</i>	80	FAC	Y
<i>Rubus ursinus</i>	4	FAC	N
<i>Geranium dissectum</i>	1	UPL	N
<i>Juncus phaeocephalus</i>	1	FACW	N
<i>Rumex acetosella</i>	1	FACU	N
<i>Helminthotheca echioides</i>	1	FACU	N
<i>Lysimachia arvensis</i>	1	FACU	N
TOTAL	89.0		0

50% of stratum cover = 44.5 20% = 17.8

Dominance Test:

Total # of dominant species across all strata: 2

Total # of dominants that are hydrophytic (status of OBL, FACW, or FAC): 1

Percentage of dominants that are hydrophytic: 50%
[Meets dominance test if >50%]

Prevalence Index:

Total % cover of species across all strata:
 OBL: _____ x 1 = _____
 FACW: _____ x 2 = _____
 FAC: _____ x 3 = _____
 FACU: _____ x 4 = _____
 UPL: _____ x 5 = _____

Total: _____ (A) _____ (B)

Prevalence Index (B/A) =
[Hydrophytic vegetation dominant if B/A ≤ 3.0]

Meets CCC or LCP hydrophytic vegetation criteria? Yes No

Comments: Sample point is dominated by FAC and UPL species and does not meet any hydrophytic vegetation indicators.

Project Name: Wavcrest South Sample Point ID: SP 11

SOILS Slope (%): 0 Soil map unit: Watsonville Sandy Loam

SOIL PROFILE

Depth	Matrix Color	Redox Color	% and contrast	Redox type	Texture	Comments
0-11	10YR 2/2				Loam	Mosit
11-14	10YR 4/2	7.5YR 5/6	2	C	Clay	

All soils:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) [Arid West only]
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Other (explain below)**

Loamy and clayey soils only:

- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9) [Arid West only]

Sandy soils only:

- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Test indicators (NRCS v7):
- 2 cm Muck (A10) [WMVC only]
- Very Shallow Dark Surface (TF12)

Meets CCC or LCP hydric soil criteria? Yes No

Comments: Sample point does not meet criteria for hydric soil indicators.

HYDROLOGY (indicators from Corps Regional Supplements, applicable to coastal California only)

Primary indicators (only 1 needed to meet criteria):

- Surface water (A1) Depth (in.): _____
- High water table (A2) Depth (in.): 13"
- Soil saturation (A3) Depth (in.): _____
- Water marks (B1) [if in Arid West: Nonriverine only]
- Sediment deposits (B2) [if in Arid West: Nonriverine only]
- Drift deposits (B3) [if in Arid West: Nonriverine only]
- Algal mat or crust (B4) [WMVC only; see B12]
- Iron deposits (B5) [WMVC only]
- Surface soil cracks (B6)
- Inundation visible on aerial imagery (B7)
- Sparsely vegetated concave surface (B8) [WMVC only]
- Water-stained leaves (B9) [Arid West and MLRA 5 only]
- Salt crust (B11)
- Biotic Crust (B12) [Arid West only; see B4]
- Aquatic invertebrates (B13)
- Hydrogen sulfide odor (C1)
- Oxidized rhizospheres (C3)
- Presence of reduced iron (C4)
- Recent iron reduction in tilled soils (C6)

- Stunted or stressed plants (D1) [WMVC only]

Secondary indicators (need 2+ to meet criteria):

- Water marks (B1) [Arid West riverine only]
- Sediment deposits (B2) [Arid West riverine only]
- Drift deposits (B3) [Arid West riverine only]
- Water-stained leaves (B9) [WMVC:MLRA 4B only]
- Drainage patterns (B10)
- Dry-season water table (C2)
- Thin muck surface (C7) [Arid West only]
- Crayfish burrows (C8) [Arid West only]
- Saturation visible on aerial imagery (C9)
- Geomorphic position (D2) [WMVC only]
- Shallow aquitard (D3)
- Frost-heave hummocks (D4) [WMVC only]
- Raised ant mounds (D6) [WMVC only]
- FAC-neutral test (D5)** (Does not meet test)

Other (explain below)

Meets CCC or LCP wetland hydrology criteria? Yes No

Comments: While water table present 13" below ground surface, this is reflective of the approximately 2.73 inches of rain fall within the eight days preceding the site visit and is not indicative of wetland hydrology.

Project Name: Wavecrest South Sample Point ID: SP 12

Project Name: Wavecrest Southern Alignment County: San Mateo

City/Location: Half Moon Bay LCP (if applicable): Half Moon Bay

Applicant/Owner: Coastside Land Trust LRR A (Western Mts., Valley, and Coast [WMVC])

WRA Investigator(s): Stephanie Freed, David Zwick LRR C (Arid West)

Date: 1.27.16 SAMPLE POINT ID: SP 12

HABITAT: _____

CCC/LCP WETLAND DETERMINATION

Meets CCC or LCP vegetation criteria? Yes No

Meets CCC or LCP hydric soil criteria? Yes No

Meets CCC or LCP hydrology criteria? Yes No

CCC/LCP WETLAND? Yes No

Comments: Sample point located in large undulating wetland with plant hummocks on a coastal field. Sample point met wetland indicators for hydrophytic vegetation, hydric soils, and wetland hydrology. Wetland boundary based on shift from Rumex acetocella/Helminthotheca echioides to Juncus phaeocephalus and surface water. Sample point taken 48 hours after last rain event. Paired with SP 13.

VEGETATION

*indicator status from the USFWS 1996 National List of wetland species

TREES - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = 20% =

SAPLING/SHRUBS - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = 20% =

HERBACEOUS - Plot size: 10x10	% Cover	Status*	Dominant?
<i>Juncus phaeocephalus</i>	50	Y	FACW
<i>Juncus patens</i>	40	Y	FACW
<i>Holcus lanatus</i>	10	N	FAC
<i>Rumex crispus</i>	+	N	FAC
TOTAL	100.0		0

50% of stratum cover = 50.0 20% = 20.0

Dominance Test:

Total # of dominant species across all strata: 2

Total # of dominants that are hydrophytic (status of OBL, FACW, or FAC): 2

Percentage of dominants that are hydrophytic: 100%
[Meets dominance test if >50%]

Prevalence Index:

Total % cover of species across all strata:

OBL: _____ x 1 = _____
 FACW: _____ x 2 = _____
 FAC: _____ x 3 = _____
 FACU: _____ x 4 = _____
 UPL: _____ x 5 = _____

Total: _____ (A) _____ (B)

Prevalence Index (B/A) =
 [Hydrophytic vegetation dominant if B/A ≤ 3.0]

Meets CCC or LCP hydrophytic vegetation criteria? Yes No

Comments: Sample point is dominated by FACW species and was determined to contain hydrophytic vegetation, as it meets the dominance test. For absolute % cover. "+" indicates a trace occurrence.

California Coastal Act Wetland Data Sheet

SOILS Slope (%): 0-2 Soil map unit: Watsonville Sandy Loam

SOIL PROFILE

Depth	Matrix Color	Redox Color	% and contrast	Redox type	Texture	Comments
0-8	7.5YR 2.5/1				Clay Loam	Silty, inundated, mucky

All soils:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) [Arid West only]
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Other (explain below)**

Loamy and clayey soils only:

- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9) [Arid West only]

Sandy soils only:

- Sandy Mucky Mineral (S1)
 - Sandy Gleyed Matrix (S4)
 - Sandy Redox (S5)
 - Stripped Matrix (S6)
- Test indicators (NRCS v7):
- 2 cm Muck (A10) [WMVC only]
 - Very Shallow Dark Surface (TF12)

Meets CCC or LCP hydric soil criteria? Yes No

Comments: Sample point meets criteria for hydric soil indicator A2 (histic epipedon).

HYDROLOGY (indicators from Corps Regional Supplements, applicable to coastal California only)

Primary indicators (only 1 needed to meet criteria):

- Surface water (A1) Depth (in.): 4"
- High water table (A2) Depth (in.): 0"
- Soil saturation (A3) Depth (in.): 0"
- Water marks (B1) [if in Arid West: Nonriverine only]
- Sediment deposits (B2) [if in Arid West: Nonriverine only]
- Drift deposits (B3) [if in Arid West: Nonriverine only]
- Algal mat or crust (B4) [WMVC only; see B12]
- Iron deposits (B5) [WMVC only]
- Surface soil cracks (B6)
- Inundation visible on aerial imagery (B7)
- Sparsely vegetated concave surface (B8) [WMVC only]
- Water-stained leaves (B9) [Arid West and MLRA 5 only]
- Salt crust (B11)
- Biotic Crust (B12) [Arid West only; see B4]
- Aquatic invertebrates (B13)
- Hydrogen sulfide odor (C1)
- Oxidized rhizospheres (C3)
- Presence of reduced iron (C4)
- Recent iron reduction in tilled soils (C6)

- Stunted or stressed plants (D1) [WMVC only]
- Secondary indicators (need 2+ to meet criteria):
- Water marks (B1) [Arid West riverine only]
 - Sediment deposits (B2) [Arid West riverine only]
 - Drift deposits (B3) [Arid West riverine only]
 - Water-stained leaves (B9) [WMVC:MLRA 4B only]
 - Drainage patterns (B10)
 - Dry-season water table (C2)
 - Thin muck surface (C7) [Arid West only]
 - Crayfish burrows (C8) [Arid West only]
 - Saturation visible on aerial imagery (C9)
 - Geomorphic position (D2) [WMVC only]
 - Shallow aquitard (D3)
 - Frost-heave hummocks (D4) [WMVC only]
 - Raised ant mounds (D6) [WMVC only]
 - FAC-neutral test (D5)** (Does not meet test)

Other (explain below)

Meets CCC or LCP wetland hydrology criteria? Yes No

Comments: Wetland hydrology indicators observed at the sample point included surface water 4" deep, inundation and saturation visible on aerial imagery, biotic crust, and sample point meets D5, FAC-Neutral test.

California Coastal Act Wetland Data Sheet

Project Name: Wavecrest Southern Alignment
 City/Location: Half Moon Bay
 Applicant/Owner: Coastside Land Trust
 WRA Investigator(s): Stephanie Freed, David Zwick
 Date: 1.27.16

County: San Mateo
 LCP (if applicable): Half Moon Bay
 LRR A (Western Mts., Valley, and Coast [WMVC])
 LRR C (Arid West)

SAMPLE POINT ID: SP 13

HABITAT: _____

CCC/LCP WETLAND DETERMINATION

Meets CCC or LCP vegetation criteria? Yes No
 Meets CCC or LCP hydric soil criteria? Yes No
 Meets CCC or LCP hydrology criteria? Yes No
CCC/LCP WETLAND? Yes No

Comments: Sample point located within upland coastal field adjacent to wetland feature (SP 12). Sample point did not meet wetland indicators for hydrophytic vegetation, hydric soils, and wetland hydrology. Sample point taken 48 hours after last rain event.

VEGETATION

*indicator status from the USFWS 1996 National List of wetland species

TREES - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = 0.0 20% = 0.0

SAPLING/SHRUBS - Plot size: 30x30	% Cover	Status*	Dominant?
<i>Baccharis pilularis</i>	60	UPL	Y
TOTAL	60.0		0

50% of stratum cover = 30.0 20% = 12.0

HERBACEOUS - Plot size: 10x10	% Cover	Status*	Dominant?
<i>Juncus patens</i>	20	FACW	Y
<i>Rumex acetosella</i>	5	FACU	N
<i>Rubus ursinus</i>	5	FAC	N
<i>Holcus lanatus</i>	5	FAC	N
<i>Carduus pycnocephalus</i>	5	UPL	N
<i>Raphanus sativus</i>	+	UPL	N
TOTAL	40.0		0

50% of stratum cover = 20.0 20% = 8.0

Dominance Test:

Total # of dominant species across all strata: 2

Total # of dominants that are hydrophytic (status of OBL, FACW, or FAC): 1

Percentage of dominants that are hydrophytic: 50%
[Meets dominance test if >50%]

Prevalence Index:

Total % cover of species across all strata:
 OBL: _____ x 1 = _____
 FACW: _____ x 2 = _____
 FAC: _____ x 3 = _____
 FACU: _____ x 4 = _____
 UPL: _____ x 5 = _____

Total: _____ (A) _____ (B)

Prevalence Index (B/A) =
[Hydrophytic vegetation dominant if B/A ≤ 3.0]

Meets CCC or LCP hydrophytic vegetation criteria? Yes No

Comments: Sample point is dominated by FACW and UPL species, and does not meet any hydrophytic vegetation indicators. For absolute % cover. "+" indicates a trace occurrence.

Project Name: Wavcrest South Sample Point ID: SP 13

SOILS Slope (%): 0 Soil map unit: Watsonville Sandy Loam

SOIL PROFILE

Depth	Matrix Color	Redox Color	% and contrast	Redox type	Texture	Comments
0-14	7.5YR 3/1				Silt Loam	

All soils:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) [Arid West only]
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Other (explain below)**

Loamy and clayey soils only:

- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9) [Arid West only]

Sandy soils only:

- Sandy Mucky Mineral (S1)
 - Sandy Gleyed Matrix (S4)
 - Sandy Redox (S5)
 - Stripped Matrix (S6)
- Test indicators (NRCS v7):
- 2 cm Muck (A10) [WMVC only]
 - Very Shallow Dark Surface (TF12)

Meets CCC or LCP hydric soil criteria? Yes No

Comments: Sample point does not meet any hydric soil indicators.

HYDROLOGY (indicators from Corps Regional Supplements, applicable to coastal California only)

Primary indicators (only 1 needed to meet criteria):

- Surface water (A1) Depth (in.): _____
- High water table (A2) Depth (in.): _____
- Soil saturation (A3) Depth (in.): _____
- Water marks (B1) [if in Arid West: Nonriverine only]
- Sediment deposits (B2) [if in Arid West: Nonriverine only]
- Drift deposits (B3) [if in Arid West: Nonriverine only]
- Algal mat or crust (B4) [WMVC only; see B12]
- Iron deposits (B5) [WMVC only]
- Surface soil cracks (B6)
- Inundation visible on aerial imagery (B7)
- Sparsely vegetated concave surface (B8) [WMVC only]
- Water-stained leaves (B9) [Arid West and MLRA 5 only]
- Salt crust (B11)
- Biotic Crust (B12) [Arid West only; see B4]
- Aquatic invertebrates (B13)
- Hydrogen sulfide odor (C1)
- Oxidized rhizospheres (C3)
- Presence of reduced iron (C4)
- Recent iron reduction in tilled soils (C6)

- Stunted or stressed plants (D1) [WMVC only]

Secondary indicators (need 2+ to meet criteria):

- Water marks (B1) [Arid West riverine only]
- Sediment deposits (B2) [Arid West riverine only]
- Drift deposits (B3) [Arid West riverine only]
- Water-stained leaves (B9) [WMVC:MLRA 4B only]
- Drainage patterns (B10)
- Dry-season water table (C2)
- Thin muck surface (C7) [Arid West only]
- Crayfish burrows (C8) [Arid West only]
- Saturation visible on aerial imagery (C9)
- Geomorphic position (D2) [WMVC only]
- Shallow aquitard (D3)
- Frost-heave hummocks (D4) [WMVC only]
- Raised ant mounds (D6) [WMVC only]
- FAC-neutral test (D5)** (Does not meet test)

Other (explain below)

Meets CCC or LCP wetland hydrology criteria? Yes No

Comments: While water table present 6" below ground surface, this is reflective of approximately 2.73 inches of rain within the eight days preceding the site visit and is not indicative of wetland hydrology conditions.

Project Name: Wavecrest South Sample Point ID: SP 14

Project Name: Wavecrest Southern Alignment County: San Mateo

City/Location: Half Moon Bay LCP (if applicable): Half Moon Bay

Applicant/Owner: Coastside Land Trust LRR A (Western Mts., Valley, and Coast [WMVC])

WRA Investigator(s): Stephanie Freed, David Zwick LRR C (Arid West)

Date: 1.27.16 SAMPLE POINT ID: SP 14

HABITAT: _____

CCC/LCP WETLAND DETERMINATION

- Meets CCC or LCP vegetation criteria? Yes No
 Meets CCC or LCP hydric soil criteria? Yes No
 Meets CCC or LCP hydrology criteria? Yes No
CCC/LCP WETLAND? Yes No

Comments: Sample point located within wetland depression on a coastal field. Sample point met wetland indicators for hydrophytic vegetation, hydric soils, and wetland hydrology including inundation up to 8". Wetland boundary based on grade break, shift from Baccharis pilularis to Juncus phaeocephalus/Rumex crispus and presence of surface water. Sample point taken 48 hours after last rain event. Paired with SP 15.

VEGETATION

*indicator status from the USFWS 1996 National List of wetland species

TREES - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = _____ 20% = _____

SAPLING/SHRUBS - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = _____ 20% = _____

HERBACEOUS - Plot size: 10x6	% Cover	Status*	Dominant?
<i>Juncus phaeocephalus</i>	30	FACW	Y
<i>Rumex crispis</i>	10	FAC	Y
<i>Mentha pulegium</i>	5	OBL	N
<i>Holcus lanatus</i>	1	FAC	N
<i>Rumex acetosella</i>	1	FACU	N
<i>Helminthotheca echioides</i>	+	FACU	N
TOTAL	47.0		0

50% of stratum cover = 23.5 20% = 9.4

Dominance Test:

Total # of dominant species across all strata: 2

Total # of dominants that are hydrophytic (status of OBL, FACW, or FAC): 2

Percentage of dominants that are hydrophytic: 100%
[Meets dominance test if >50%]

Prevalence Index:

Total % cover of species across all strata:
 OBL: _____ x 1 = _____
 FACW: _____ x 2 = _____
 FAC: _____ x 3 = _____
 FACU: _____ x 4 = _____
 UPL: _____ x 5 = _____

Total: _____ (A) _____ (B)

Prevalence Index (B/A) =
[Hydrophytic vegetation dominant if B/A ≤ 3.0]

Meets CCC or LCP hydrophytic vegetation criteria? Yes No

Comments: Sample point is dominated by FACW and FAC species and was determined to contain hydrophytic vegetation, as it meets the dominance test. "+" indicates a trace occurrence.

California Coastal Act Wetland Data Sheet

SOILS Slope (%): 0-2 Soil map unit: Watsonville Sandy Loam

SOIL PROFILE

Depth	Matrix Color	Redox Color	% and contrast	Redox type	Texture	Comments
0-8	10YR 2/1				Silt Loam	Saturated

All soils:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) [Arid West only]
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)

Loamy and clayey soils only:

- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9) [Arid West only]

Sandy soils only:

- Sandy Mucky Mineral (S1)
 - Sandy Gleyed Matrix (S4)
 - Sandy Redox (S5)
 - Stripped Matrix (S6)
- Test indicators (NRCS v7):
- 2 cm Muck (A10) [WMVC only]
 - Very Shallow Dark Surface (TF12)

Other (explain below)

Meets CCC or LCP hydric soil criteria? Yes No

Comments: While no hydric soil indicators were observed, this sample point contains naturally problematic seasonally ponded soils. Sample point occurs in a seasonally ponded depression with a restrictive clay layer and lacks hydric soil indicators due to limited saturation depth and saline conditions.

HYDROLOGY (indicators from Corps Regional Supplements, applicable to coastal California only)

Primary indicators (only 1 needed to meet criteria):

- Surface water (A1) Depth (in.): 8"
- High water table (A2) Depth (in.): _____
- Soil saturation (A3) Depth (in.): _____
- Water marks (B1) [if in Arid West: Nonriverine only]
- Sediment deposits (B2) [if in Arid West: Nonriverine only]
- Drift deposits (B3) [if in Arid West: Nonriverine only]
- Algal mat or crust (B4) [WMVC only; see B12]
- Iron deposits (B5) [WMVC only]
- Surface soil cracks (B6)
- Inundation visible on aerial imagery (B7)
- Sparsely vegetated concave surface (B8) [WMVC only]
- Water-stained leaves (B9) [Arid West and MLRA 5 only]
- Salt crust (B11)
- Biotic Crust (B12) [Arid West only; see B4]
- Aquatic invertebrates (B13)
- Hydrogen sulfide odor (C1)
- Oxidized rhizospheres (C3)
- Presence of reduced iron (C4)
- Recent iron reduction in tilled soils (C6)

- Stunted or stressed plants (D1) [WMVC only]
- Secondary indicators (need 2+ to meet criteria):
- Water marks (B1) [Arid West riverine only]
 - Sediment deposits (B2) [Arid West riverine only]
 - Drift deposits (B3) [Arid West riverine only]
 - Water-stained leaves (B9) [WMVC:MLRA 4B only]
 - Drainage patterns (B10)
 - Dry-season water table (C2)
 - Thin muck surface (C7) [Arid West only]
 - Crayfish burrows (C8) [Arid West only]
 - Saturation visible on aerial imagery (C9)
 - Geomorphic position (D2) [WMVC only]
 - Shallow aquitard (D3)
 - Frost-heave hummocks (D4) [WMVC only]
 - Raised ant mounds (D6) [WMVC only]
 - FAC-neutral test (D5)** (Does not meet test)

Other (explain below)

Meets CCC or LCP wetland hydrology criteria? Yes No

Comments: Wetland hydrology indicators observed at the sample point included surface water 8" deep and sample point meets secondary indicator D5, FAC-Neutral test.

California Coastal Act Wetland Data Sheet

Project Name: Wavecrest Southern Alignment
 City/Location: Half Moon Bay
 Applicant/Owner: Coastside Land Trust
 WRA Investigator(s): Stephanie Freed, David Zwick
 Date: 1.27.16

County: San Mateo
 LCP (if applicable): Half Moon Bay
 LRR A (Western Mts., Valley, and Coast [WMVC])
 LRR C (Arid West)

SAMPLE POINT ID: SP 15

HABITAT: _____

CCC/LCP WETLAND DETERMINATION

Meets CCC or LCP vegetation criteria? Yes No
 Meets CCC or LCP hydric soil criteria? Yes No
 Meets CCC or LCP hydrology criteria? Yes No
CCC/LCP WETLAND? Yes No

Comments: Sample point located adjacent to wetland depression (SP 14) within upland coastal field. The sample point did not meet wetland indicators for hydrophytic vegetation, hydric soils, and wetland hydrology. Sample point taken 48 hours after last rain event.

VEGETATION

*indicator status from the USFWS 1996 National List of wetland species

TREES - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = _____ 20% = _____

SAPLING/SHRUBS - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = _____ 20% = _____

HERBACEOUS - Plot size: 10x10	% Cover	Status*	Dominant?
<i>Rumex acetosella</i>	80	FACU	Y
<i>Holcus lanatus</i>	10	FAC	N
<i>Helminthotheca echioides</i>	5	FACU	N
<i>Juncus phaeocephalus</i>	5	FACW	N
TOTAL	100.0		0

50% of stratum cover = 50.0 20% = 20.0

Dominance Test:

Total # of dominant species across all strata: 1

Total # of dominants that are hydrophytic (status of OBL, FACW, or FAC): 0

Percentage of dominants that are hydrophytic: 0%
[Meets dominance test if >50%]

Prevalence Index:

Total % cover of species across all strata:
 OBL: _____ x 1 = _____
 FACW: _____ x 2 = _____
 FAC: _____ x 3 = _____
 FACU: _____ x 4 = _____
 UPL: _____ x 5 = _____

Total: _____ (A) _____ (B)

Prevalence Index (B/A) =
[Hydrophytic vegetation dominant if B/A ≤ 3.0]

Meets CCC or LCP hydrophytic vegetation criteria? Yes No

Comments: Sample point is dominated by FACU species and does not meet any hydrophytic vegetation indicators.

Project Name: Wavecrest South Sample Point ID: SP 15

SOILS Slope (%): 0 Soil map unit: Watsonville sandy loam, gently sloping

SOIL PROFILE

Depth	Matrix Color	Redox Color	% and contrast	Redox type	Texture	Comments
0-10	10YR 3/2				Silt Loam	
10-14	7.5YR 2.5/1	5YR 3/4	1	C	Clay	

All soils:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) [Arid West only]
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Other (explain below)**

Loamy and clayey soils only:

- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9) [Arid West only]

Sandy soils only:

- Sandy Mucky Mineral (S1)
 - Sandy Gleyed Matrix (S4)
 - Sandy Redox (S5)
 - Stripped Matrix (S6)
- Test indicators (NRCS v7):
- 2 cm Muck (A10) [WMVC only]
 - Very Shallow Dark Surface (TF12)

Meets CCC or LCP hydric soil criteria? Yes No

Comments: Sample point does not meet any hydric soil indicators.

HYDROLOGY (indicators from Corps Regional Supplements, applicable to coastal California only)

Primary indicators (only 1 needed to meet criteria):

- Surface water (A1) Depth (in.): _____
- High water table (A2) Depth (in.): _____
- Soil saturation (A3) Depth (in.): _____
- Water marks (B1) [if in Arid West: Nonriverine only]
- Sediment deposits (B2) [if in Arid West: Nonriverine only]
- Drift deposits (B3) [if in Arid West: Nonriverine only]
- Algal mat or crust (B4) [WMVC only; see B12]
- Iron deposits (B5) [WMVC only]
- Surface soil cracks (B6)
- Inundation visible on aerial imagery (B7)
- Sparsely vegetated concave surface (B8) [WMVC only]
- Water-stained leaves (B9) [Arid West and MLRA 5 only]
- Salt crust (B11)
- Biotic Crust (B12) [Arid West only; see B4]
- Aquatic invertebrates (B13)
- Hydrogen sulfide odor (C1)
- Oxidized rhizospheres (C3)
- Presence of reduced iron (C4)
- Recent iron reduction in tilled soils (C6)

- Stunted or stressed plants (D1) [WMVC only]

Secondary indicators (need 2+ to meet criteria):

- Water marks (B1) [Arid West riverine only]
- Sediment deposits (B2) [Arid West riverine only]
- Drift deposits (B3) [Arid West riverine only]
- Water-stained leaves (B9) [WMVC:MLRA 4B only]
- Drainage patterns (B10)
- Dry-season water table (C2)
- Thin muck surface (C7) [Arid West only]
- Crayfish burrows (C8) [Arid West only]
- Saturation visible on aerial imagery (C9)
- Geomorphic position (D2) [WMVC only]
- Shallow aquitard (D3)
- Frost-heave hummocks (D4) [WMVC only]
- Raised ant mounds (D6) [WMVC only]
- FAC-neutral test (D5)** (Does not meet test)

Other (explain below)

Meets CCC or LCP wetland hydrology criteria? Yes No

Comments: While water table present at 14" below ground surface, this is likely reflective of approximately 2.73 inches of rain within the eight days preceding the site visit and is not indicative of wetland hydrology conditions.

Project Name: Wavecrest South Sample Point ID: SP 16

Project Name: Wavecrest Southern Alignment County: San Mateo

City/Location: Half Moon Bay LCP (if applicable): Half Moon Bay

Applicant/Owner: Coastside Land Trust LRR A (Western Mts., Valley, and Coast [WMVC])

WRA Investigator(s): Stephanie Freed, David Zwick LRR C (Arid West)

Date: 1.27.16 SAMPLE POINT ID: SP 16

HABITAT: _____

CCC/LCP WETLAND DETERMINATION

Meets CCC or LCP vegetation criteria? Yes No

Meets CCC or LCP hydric soil criteria? Yes No

Meets CCC or LCP hydrology criteria? Yes No

CCC/LCP WETLAND? Yes No

Comments: Sample point located within undulating topographical feature in low-lying area with plant hummocks and no obvious depression on a coastal field. SP met wetland indicators for hydrophytic vegetation, hydric soils, and wetland hydrology. Wetland boundary based on shift from Geranium dissectum to Mentha pulegium/Juncus phaeocephalus and presence of surface water. Sample point taken 48 hours after last rain event. Paired with SP 17.

VEGETATION

*indicator status from the USFWS 1996 National List of wetland species

TREES - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = _____ 20% = _____

SAPLING/SHRUBS - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = _____ 20% = _____

HERBACEOUS - Plot size: 10x10	% Cover	Status*	Dominant?
<i>Juncus phaeocephalus</i>	40	FACW	Y
<i>Mentha pulegium</i>	10	OBL	N
<i>Holcus lanatus</i>	5	FAC	N
<i>Rumex crispus</i>	5	FAC	N
TOTAL	60.0		0

50% of stratum cover = 30.0 20% = 12.0

Dominance Test:

Total # of dominant species across all strata: 1

Total # of dominants that are hydrophytic (status of OBL, FACW, or FAC): 1

Percentage of dominants that are hydrophytic: 100%
[Meets dominance test if >50%]

Prevalence Index:

Total % cover of species across all strata:

OBL: _____ x 1 = _____
 FACW: _____ x 2 = _____
 FAC: _____ x 3 = _____
 FACU: _____ x 4 = _____
 UPL: _____ x 5 = _____

Total: _____ (A) _____ (B)

Prevalence Index (B/A) =
 [Hydrophytic vegetation dominant if B/A ≤ 3.0]

Meets CCC or LCP hydrophytic vegetation criteria? Yes No

Comments: Sample point is dominated by FACW species and was determined to contain hydrophytic vegetation, as it meets the dominance test.

California Coastal Act Wetland Data Sheet

SOILS Slope (%): 0 Soil map unit: Watsonville Sandy Loam

SOIL PROFILE

Depth	Matrix Color	Redox Color	% and contrast	Redox type	Texture	Comments
0-4	10YR 3/2				Silt	Saturated
4-8	7/5YR 3/2				Clay Loam	
8-14	7/5YR 3/2	5YR 4/6	6	C	Clay	

All soils:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) [Arid West only]
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)

Loamy and clayey soils only:

- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9) [Arid West only]

Sandy soils only:

- Sandy Mucky Mineral (S1)
 - Sandy Gleyed Matrix (S4)
 - Sandy Redox (S5)
 - Stripped Matrix (S6)
- Test indicators (NRCS v7):
- 2 cm Muck (A10) [WMVC only]
 - Very Shallow Dark Surface (TF12)

Other (explain below)

Meets CCC or LCP hydric soil criteria? Yes No

Comments: While no hydric soil indicators were observed, this sample point contains naturally problematic seasonally ponded soils. Sample point occurs in a seasonally ponded low-lying area with a restrictive clay layer and lacks hydric soil indicators due to limited saturation depth and saline conditions.

HYDROLOGY (indicators from Corps Regional Supplements, applicable to coastal California only)

Primary indicators (only 1 needed to meet criteria):

- Surface water (A1) Depth (in.): 6"
- High water table (A2) Depth (in.): _____
- Soil saturation (A3) Depth (in.): _____
- Water marks (B1) [if in Arid West: Nonriverine only]
- Sediment deposits (B2) [if in Arid West: Nonriverine only]
- Drift deposits (B3) [if in Arid West: Nonriverine only]
- Algal mat or crust (B4) [WMVC only; see B12]
- Iron deposits (B5) [WMVC only]
- Surface soil cracks (B6)
- Inundation visible on aerial imagery (B7)
- Sparsely vegetated concave surface (B8) [WMVC only]
- Water-stained leaves (B9) [Arid West and MLRA 5 only]
- Salt crust (B11)
- Biotic Crust (B12) [Arid West only; see B4]
- Aquatic invertebrates (B13)
- Hydrogen sulfide odor (C1)
- Oxidized rhizospheres (C3)
- Presence of reduced iron (C4)
- Recent iron reduction in tilled soils (C6)

- Stunted or stressed plants (D1) [WMVC only]
- Secondary indicators (need 2+ to meet criteria):
- Water marks (B1) [Arid West riverine only]
 - Sediment deposits (B2) [Arid West riverine only]
 - Drift deposits (B3) [Arid West riverine only]
 - Water-stained leaves (B9) [WMVC:MLRA 4B only]
 - Drainage patterns (B10)
 - Dry-season water table (C2)
 - Thin muck surface (C7) [Arid West only]
 - Crayfish burrows (C8) [Arid West only]
 - Saturation visible on aerial imagery (C9)
 - Geomorphic position (D2) [WMVC only]
 - Shallow aquitard (D3)
 - Frost-heave hummocks (D4) [WMVC only]
 - Raised ant mounds (D6) [WMVC only]
 - FAC-neutral test (D5)** (Does not meet test)

Other (explain below)

Meets CCC or LCP wetland hydrology criteria? Yes No

Comments: Wetland hydrology indicators observed at the sample point included surface water 6" deep and sample point meets secondary indicator D5, FAC-Neutral test.

California Coastal Act Wetland Data Sheet

Project Name: Wavecrest Southern Alignment
 City/Location: Half Moon Bay
 Applicant/Owner: Coastside Land Trust
 WRA Investigator(s): Stephanie Freed, David Zwick
 Date: 1.27.16

County: San Mateo
 LCP (if applicable): Half Moon Bay
 LRR A (Western Mts., Valley, and Coast [WMVC])
 LRR C (Arid West)

SAMPLE POINT ID: SP 17

HABITAT: _____

CCC/LCP WETLAND DETERMINATION

Meets CCC or LCP vegetation criteria? Yes No
 Meets CCC or LCP hydric soil criteria? Yes No
 Meets CCC or LCP hydrology criteria? Yes No
CCC/LCP WETLAND? Yes No

Comments: Sample point located within upland coastal field. While SP point met wetland indicators for hydrophytic vegetation, dominant vegetation is invasive grass ubiquitous within California landscape, especially coastal areas with fog influence. SP did not meet wetland indicators for hydric soils or wetland hydrology. Sample point taken 48 hours after last rain event. SP paired with SP 16.

VEGETATION

*indicator status from the USFWS 1996 National List of wetland species

TREES - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = _____ 20% = _____

SAPLING/SHRUBS - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = _____ 20% = _____

HERBACEOUS - Plot size: 10x10	% Cover	Status*	Dominant?
<i>Holcus lanatus</i>	60	FAC	Y
<i>Geranium dissectum</i>	10	UPL	N
<i>Helminthotheca echioides</i>	5	FACU	N
TOTAL	75.0		0

50% of stratum cover = 37.5 20% = 15.0

Dominance Test:

Total # of dominant species across all strata: 1

Total # of dominants that are hydrophytic (status of OBL, FACW, or FAC): 1

Percentage of dominants that are hydrophytic: 100%
[Meets dominance test if >50%]

Prevalence Index:

Total % cover of species across all strata:
 OBL: _____ x 1 = _____
 FACW: _____ x 2 = _____
 FAC: _____ x 3 = _____
 FACU: _____ x 4 = _____
 UPL: _____ x 5 = _____
 Total: _____ (A) _____ (B)

Prevalence Index (B/A) =
[Hydrophytic vegetation dominant if B/A ≤ 3.0]

Meets CCC or LCP hydrophytic vegetation criteria? Yes No

Comments: Sample point is dominated by FAC species and meets dominance test for hydrophytic vegetation. However, *Holcus lanatus* is an invasive grass ubiquitous within California landscape, especially coastal areas with fog influence, and is not indicative of wetland conditions.

Project Name: Wavecrest South Sample Point ID: SP 17

SOILS Slope (%): 0 Soil map unit: Watsonville Sandy Loam

SOIL PROFILE

Depth	Matrix Color	Redox Color	% and contrast	Redox type	Texture	Comments
0-9	7.5YR 4/2				Silty Loam	
9-14	7.5YR 4/2	5YR 4/6	6	c	Silty Clay	

All soils:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) [Arid West only]
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Other (explain below)**

Loamy and clayey soils only:

- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9) [Arid West only]

Sandy soils only:

- Sandy Mucky Mineral (S1)
 - Sandy Gleyed Matrix (S4)
 - Sandy Redox (S5)
 - Stripped Matrix (S6)
- Test indicators (NRCS v7):
- 2 cm Muck (A10) [WMVC only]
 - Very Shallow Dark Surface (TF12)

Meets CCC or LCP hydric soil criteria? Yes No

Comments: Sample point does not meet any hydric soil indicators.

HYDROLOGY (indicators from Corps Regional Supplements, applicable to coastal California only)

Primary indicators (only 1 needed to meet criteria):

- Surface water (A1) Depth (in.): _____
- High water table (A2) Depth (in.): _____
- Soil saturation (A3) Depth (in.): _____
- Water marks (B1) [if in Arid West: Nonriverine only]
- Sediment deposits (B2) [if in Arid West: Nonriverine only]
- Drift deposits (B3) [if in Arid West: Nonriverine only]
- Algal mat or crust (B4) [WMVC only; see B12]
- Iron deposits (B5) [WMVC only]
- Surface soil cracks (B6)
- Inundation visible on aerial imagery (B7)
- Sparsely vegetated concave surface (B8) [WMVC only]
- Water-stained leaves (B9) [Arid West and MLRA 5 only]
- Salt crust (B11)
- Biotic Crust (B12) [Arid West only; see B4]
- Aquatic invertebrates (B13)
- Hydrogen sulfide odor (C1)
- Oxidized rhizospheres (C3)
- Presence of reduced iron (C4)
- Recent iron reduction in tilled soils (C6)

- Stunted or stressed plants (D1) [WMVC only]

Secondary indicators (need 2+ to meet criteria):

- Water marks (B1) [Arid West riverine only]
- Sediment deposits (B2) [Arid West riverine only]
- Drift deposits (B3) [Arid West riverine only]
- Water-stained leaves (B9) [WMVC:MLRA 4B only]
- Drainage patterns (B10)
- Dry-season water table (C2)
- Thin muck surface (C7) [Arid West only]
- Crayfish burrows (C8) [Arid West only]
- Saturation visible on aerial imagery (C9)
- Geomorphic position (D2) [WMVC only]
- Shallow aquitard (D3)
- Frost-heave hummocks (D4) [WMVC only]
- Raised ant mounds (D6) [WMVC only]
- FAC-neutral test (D5)** (Does not meet test)

Other (explain below)

Meets CCC or LCP wetland hydrology criteria? Yes No

Comments: While water table present at 5" below ground surface, this is likely reflective of approximately 2.73 inches of rain within the eight days preceding the site visit and is not indicative of wetland hydrology conditions.

Project Name: Wavecrest South Sample Point ID: SP 18

Project Name: Wavecrest Southern Alignment County: San Mateo

City/Location: Half Moon Bay LCP (if applicable): Half Moon Bay

Applicant/Owner: Coastside Land Trust LRR A (Western Mts., Valley, and Coast [WMVC])

WRA Investigator(s): Stephanie Freed LRR C (Arid West)

Date: 2.9.16 SAMPLE POINT ID: SP 18

HABITAT: _____

CCC/LCP WETLAND DETERMINATION

Meets CCC or LCP vegetation criteria? Yes No

Meets CCC or LCP hydric soil criteria? Yes No

Meets CCC or LCP hydrology criteria? Yes No

CCC/LCP WETLAND? Yes No

Comments: Sample point located within swale on a coastal field. The sample point did not meet wetland indicators for hydrophytic vegetation or hydric soils but contained wetland indicator for wetland hydrology including water table present at 3" below ground surface. Sample point taken 14 days after last rain event. Sample point paired with SP 19.

VEGETATION

*indicator status from the USFWS 1996 National List of wetland species

TREES - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = 20% =

SAPLING/SHRUBS - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = 20% =

HERBACEOUS - Plot size: 1x10	% Cover	Status*	Dominant?
<i>Rumex crispus</i>	30	FAC	Y
<i>Helminthotheca echioides</i>	30	FACU	Y
<i>Festuca perennis</i>	10	FAC	N
<i>Geranium dissectum</i>	5	UPL	N
<i>Mentha pulegium</i>	5	OBL	N
TOTAL	80.0		0

50% of stratum cover = 40.0 20% = 16.0

Dominance Test:

Total # of dominant species across all strata: 2

Total # of dominants that are hydrophytic (status of OBL, FACW, or FAC): 1

Percentage of dominants that are hydrophytic: 50%
[Meets dominance test if >50%]

Prevalence Index:

Total % cover of species across all strata:

OBL: _____ x 1 = _____
 FACW: _____ x 2 = _____
 FAC: _____ x 3 = _____
 FACU: _____ x 4 = _____
 UPL: _____ x 5 = _____

Total: _____ (A) _____ (B)

Prevalence Index (B/A) =
 [Hydrophytic vegetation dominant if B/A ≤ 3.0]

Meets CCC or LCP hydrophytic vegetation criteria? Yes No

Comments: Sample point is dominated by FAC and FACU species and does not meet any hydrophytic vegetation indicators.

California Coastal Act Wetland Data Sheet

SOILS

Slope (%): 0-2

Soil map unit: Watsonville loam, nearly level

SOIL PROFILE

Depth	Matrix Color	Redox Color	% and contrast	Redox type	Texture	Comments
0-2	10YR 2/2				Silt Loam	Saturated, mucky
2-14	10YR 3/2				Silt Loam	Saturated, mucky

All soils:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) [Arid West only]
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Other (explain below)**

Loamy and clayey soils only:

- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9) [Arid West only]

Sandy soils only:

- Sandy Mucky Mineral (S1)
 - Sandy Gleyed Matrix (S4)
 - Sandy Redox (S5)
 - Stripped Matrix (S6)
- Test indicators (NRCS v7):
- 2 cm Muck (A10) [WMVC only]
 - Very Shallow Dark Surface (TF12)

Meets CCC or LCP hydric soil criteria? Yes No

Comments: Sample point does not meet any hydric soil indicators.

HYDROLOGY (indicators from Corps Regional Supplements, applicable to coastal California only)

Primary indicators (only 1 needed to meet criteria):

- Surface water (A1) *Depth (in.):* _____
- High water table (A2) *Depth (in.):* 3"
- Soil saturation (A3) *Depth (in.):* _____
- Water marks (B1) [if in Arid West: Nonriverine only]
- Sediment deposits (B2) [if in Arid West: Nonriverine only]
- Drift deposits (B3) [if in Arid West: Nonriverine only]
- Algal mat or crust (B4) [WMVC only; see B12]
- Iron deposits (B5) [WMVC only]
- Surface soil cracks (B6)
- Inundation visible on aerial imagery (B7)
- Sparsely vegetated concave surface (B8) [WMVC only]
- Water-stained leaves (B9) [Arid West and MLRA 5 only]
- Salt crust (B11)
- Biotic Crust (B12) [Arid West only; see B4]
- Aquatic invertebrates (B13)
- Hydrogen sulfide odor (C1)
- Oxidized rhizospheres (C3)
- Presence of reduced iron (C4)
- Recent iron reduction in tilled soils (C6)

- Stunted or stressed plants (D1) [WMVC only]

Secondary indicators (need 2+ to meet criteria):

- Water marks (B1) [Arid West riverine only]
- Sediment deposits (B2) [Arid West riverine only]
- Drift deposits (B3) [Arid West riverine only]
- Water-stained leaves (B9) [WMVC:MLRA 4B only]
- Drainage patterns (B10)
- Dry-season water table (C2)
- Thin muck surface (C7) [Arid West only]
- Crayfish burrows (C8) [Arid West only]
- Saturation visible on aerial imagery (C9)
- Geomorphic position (D2) [WMVC only]
- Shallow aquitard (D3)
- Frost-heave hummocks (D4) [WMVC only]
- Raised ant mounds (D6) [WMVC only]
- FAC-neutral test (D5)** (Does not meet test)

Other (explain below)

Meets CCC or LCP wetland hydrology criteria? Yes No

Comments: Wetland hydrology indicators observed at the sample point included high water table at 3" below ground surface and biotic crust.

California Coastal Act Wetland Data Sheet

Project Name: Wavecrest Southern Alignment
 City/Location: Half Moon Bay
 Applicant/Owner: Coastside Land Trust
 WRA Investigator(s): Stephanie Freed
 Date: 2.09.16

County: San Mateo
 LCP (if applicable): Half Moon Bay
 LRR A (Western Mts., Valley, and Coast [WMVC])
 LRR C (Arid West)

SAMPLE POINT ID: SP 19

HABITAT: _____

CCC/LCP WETLAND DETERMINATION

Meets CCC or LCP vegetation criteria? Yes No
 Meets CCC or LCP hydric soil criteria? Yes No
 Meets CCC or LCP hydrology criteria? Yes No
CCC/LCP WETLAND? Yes No

Comments: Sample point located adjacent to upland swale (SP 18) within upland coastal field. The sample point did not contain wetland indicators for hydrophytic vegetation, hydric soils; however, indicators of wetland hydrology were observed including water table at 4" below ground surface. Sample point taken 14 days after last rain event. Sample point paired with SP 18.

VEGETATION

*indicator status from the USFWS 1996 National List of wetland species

TREES - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			SP

50% of stratum cover = _____ 20% = _____

SAPLING/SHRUBS - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = _____ 20% = _____

HERBACEOUS - Plot size: 10x10	% Cover	Status*	Dominant?
<i>Helminthotheca echioides</i>	60	FACU	Y
<i>Geranium dissectum</i>	20	UPL	Y
<i>Rumex crispus</i>	2	FAC	N
TOTAL	82.0		0

50% of stratum cover = 41.0 20% = 16.4

Dominance Test:

Total # of dominant species across all strata:

Total # of dominants that are hydrophytic (status of OBL, FACW, or FAC):

Percentage of dominants that are hydrophytic:
[Meets dominance test if >50%]

Prevalence Index:

Total % cover of species across all strata:

OBL: _____ x 1 = _____
 FACW: _____ x 2 = _____
 FAC: _____ x 3 = _____
 FACU: _____ x 4 = _____
 UPL: _____ x 5 = _____

Total: _____ (A) _____ (B)

Prevalence Index (B/A) =
[Hydrophytic vegetation dominant if B/A ≤ 3.0]

Meets CCC or LCP hydrophytic vegetation criteria? Yes No

Comments: Sample point is dominated by FACU and UPL species and does not meet any hydrophytic vegetation indicators.

Project Name: Wavecrest South Sample Point ID: SP 19

SOILS Slope (%): 0 Soil map unit: Watsonville loam, nearly level

SOIL PROFILE

Depth	Matrix Color	Redox Color	% and contrast	Redox type	Texture	Comments
0-12	7.5YR 3/1				Loam	moist starting at 6"
12-14	7.5YR 3/1				Silt Loam	Saturated, some gravel

All soils:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) [Arid West only]
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Other (explain below)**

Loamy and clayey soils only:

- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9) [Arid West only]

Sandy soils only:

- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Test indicators (NRCS v7):
- 2 cm Muck (A10) [WMVC only]
- Very Shallow Dark Surface (TF12)

Meets CCC or LCP hydric soil criteria? Yes No

Comments: Sample point does not meet any hydric soil indicators.

HYDROLOGY (indicators from Corps Regional Supplements, applicable to coastal California only)

Primary indicators (only 1 needed to meet criteria):

- Surface water (A1) Depth (in.): _____
- High water table (A2) Depth (in.): 4"
- Soil saturation (A3) Depth (in.): _____
- Water marks (B1) [if in Arid West: Nonriverine only]
- Sediment deposits (B2) [if in Arid West: Nonriverine only]
- Drift deposits (B3) [if in Arid West: Nonriverine only]
- Algal mat or crust (B4) [WMVC only; see B12]
- Iron deposits (B5) [WMVC only]
- Surface soil cracks (B6)
- Inundation visible on aerial imagery (B7)
- Sparsely vegetated concave surface (B8) [WMVC only]
- Water-stained leaves (B9) [Arid West and MLRA 5 only]
- Salt crust (B11)
- Biotic Crust (B12) [Arid West only; see B4]
- Aquatic invertebrates (B13)
- Hydrogen sulfide odor (C1)
- Oxidized rhizospheres (C3)
- Presence of reduced iron (C4)
- Recent iron reduction in tilled soils (C6)

- Stunted or stressed plants (D1) [WMVC only]

Secondary indicators (need 2+ to meet criteria):

- Water marks (B1) [Arid West riverine only]
- Sediment deposits (B2) [Arid West riverine only]
- Drift deposits (B3) [Arid West riverine only]
- Water-stained leaves (B9) [WMVC:MLRA 4B only]
- Drainage patterns (B10)
- Dry-season water table (C2)
- Thin muck surface (C7) [Arid West only]
- Crayfish burrows (C8) [Arid West only]
- Saturation visible on aerial imagery (C9)
- Geomorphic position (D2) [WMVC only]
- Shallow aquitard (D3)
- Frost-heave hummocks (D4) [WMVC only]
- Raised ant mounds (D6) [WMVC only]
- FAC-neutral test (D5)** (Does not meet test)

Other (explain below)

Meets CCC or LCP wetland hydrology criteria? Yes No

Comments: Wetland hydrology indicators observed at the sample point included high water table present at 4" below ground surface.

Project Name: Wavecrest South Sample Point ID: SP 20

Project Name: Wavecrest Southern Alignment County: San Mateo

City/Location: Half Moon Bay LCP (if applicable): Half Moon Bay

Applicant/Owner: Coastside Land Trust LRR A (Western Mts., Valley, and Coast [WMVC])

WRA Investigator(s): Stephanie Freed LRR C (Arid West)

Date: 2.09.16 SAMPLE POINT ID: SP 20

HABITAT: _____

CCC/LCP WETLAND DETERMINATION

Meets CCC or LCP vegetation criteria? Yes No *Comments: Sample point located within upland coastal field.*
 Meets CCC or LCP hydric soil criteria? Yes No *Sample point did not meet wetland indicators for hydrophytic*
 Meets CCC or LCP hydrology criteria? Yes No *vegetation, hydric soils, and wetland hydrology. Sample point*
CCC/LCP WETLAND? Yes No *taken 14 days after last rain event.*

VEGETATION

*indicator status from the USFWS 1996 National List of wetland species

TREES - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = 20% =

SAPLING/SHRUBS - Plot size: 10x10	% Cover	Status*	Dominant?
<i>Baccharis pilularis</i>	30	UPL	Y
TOTAL	30.0		0

50% of stratum cover = 15.0 20% = 6.0

HERBACEOUS - Plot size: 10x10	% Cover	Status*	Dominant?
<i>Juncus patens</i>	70	FACW	Y
<i>Scrophularia californica</i>	+	FAC	N
<i>Galium aparine</i>	+	FACU	N
<i>Plagiobothrys chorisianus</i>	+	OBL	N
TOTAL	70.0		0

50% of stratum cover = 35.0 20% = 14.0

Dominance Test:

Total # of dominant species across all strata:

Total # of dominants that are hydrophytic (status of OBL, FACW, or FAC):

Percentage of dominants that are hydrophytic:
[Meets dominance test if >50%]

Prevalence Index:

Total % cover of species across all strata:

OBL: _____ x 1 = _____
 FACW: _____ x 2 = _____
 FAC: _____ x 3 = _____
 FACU: _____ x 4 = _____
 UPL: _____ x 5 = _____

Total: _____ (A) _____ (B)

Prevalence Index (B/A) =
[Hydrophytic vegetation dominant if B/A ≤ 3.0]

Yes No

Meets CCC or LCP hydrophytic vegetation criteria?

Comments: Sample point is dominated by FACW and UPL species and does not meet any hydrophytic vegetation indicators. For absolute % cover. "+" indicates a trace occurrence.

California Coastal Act Wetland Data Sheet

SOILS

Slope (%): 0

Soil map unit: Watsonville, sandy loam, gently sloping

SOIL PROFILE

Depth	Matrix Color	Redox Color	% and contrast	Redox type	Texture	Comments
0-14	7.5YR 3/2	100			Silt Loam	traces of fine sand, moist

All soils:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) [Arid West only]
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Other (explain below)**

Loamy and clayey soils only:

- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9) [Arid West only]

Sandy soils only:

- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

Test indicators (NRCS v7):

- 2 cm Muck (A10) [WMVC only]
- Very Shallow Dark Surface (TF12)

Meets CCC or LCP hydric soil criteria?

Yes No

Comments: Sample point does not meet any hydric soil indicators.

HYDROLOGY (indicators from Corps Regional Supplements, applicable to coastal California only)

Primary indicators (only 1 needed to meet criteria):

- Surface water (A1) Depth (in.): _____
- High water table (A2) Depth (in.): _____
- Soil saturation (A3) Depth (in.): _____
- Water marks (B1) [if in Arid West: Nonriverine only]
- Sediment deposits (B2) [if in Arid West: Nonriverine only]
- Drift deposits (B3) [if in Arid West: Nonriverine only]
- Algal mat or crust (B4) [WMVC only; see B12]
- Iron deposits (B5) [WMVC only]
- Surface soil cracks (B6)
- Inundation visible on aerial imagery (B7)
- Sparsely vegetated concave surface (B8) [WMVC only]
- Water-stained leaves (B9) [Arid West and MLRA 5 only]
- Salt crust (B11)
- Biotic Crust (B12) [Arid West only; see B4]
- Aquatic invertebrates (B13)
- Hydrogen sulfide odor (C1)
- Oxidized rhizospheres (C3)
- Presence of reduced iron (C4)
- Recent iron reduction in tilled soils (C6)

- Stunted or stressed plants (D1) [WMVC only]

Secondary indicators (need 2+ to meet criteria):

- Water marks (B1) [Arid West riverine only]
- Sediment deposits (B2) [Arid West riverine only]
- Drift deposits (B3) [Arid West riverine only]
- Water-stained leaves (B9) [WMVC:MLRA 4B only]
- Drainage patterns (B10)
- Dry-season water table (C2)
- Thin muck surface (C7) [Arid West only]
- Crayfish burrows (C8) [Arid West only]
- Saturation visible on aerial imagery (C9)
- Geomorphic position (D2) [WMVC only]
- Shallow aquitard (D3)
- Frost-heave hummocks (D4) [WMVC only]
- Raised ant mounds (D6) [WMVC only] (000 not meet test)

FAC-neutral test (D5)

Other (explain below)

Yes No

Meets CCC or LCP wetland hydrology criteria?

Comments: Sample point does not meet criteria for hydrology indicators.

Project Name: Wavecrest South Sample Point ID: SP_21

Project Name: Wavecrest Southern Alignment County: San Mateo

City/Location: Half Moon Bay LCP (if applicable): Half Moon Bay

Applicant/Owner: Coastside Land Trust LRR A (Western Mts., Valley, and Coast [WMVC])

WRA Investigator(s): Stephanie Freed LRR C (Arid West)

Date: 2.16.16 SAMPLE POINT ID: SP 21

HABITAT: _____

CCC/LCP WETLAND DETERMINATION

Meets CCC or LCP vegetation criteria? Yes No *Comments: Sample point located within coastal field with no topographical feature. The sample point did not meet wetland indicators for hydrophytic vegetation or hydric soils but indicators of wetland hydrology were observed including water table at 10" below ground surface. Sample point taken 13 days after last rain event.*

Meets CCC or LCP hydric soil criteria? Yes No

Meets CCC or LCP hydrology criteria? Yes No

CCC/LCP WETLAND?

Yes No

VEGETATION

*indicator status from the USFWS 1996 National List of wetland species

TREES - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = 20% =

SAPLING/SHRUBS - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = 20% =

HERBACEOUS - Plot size: 10x10	% Cover	Status*	Dominant?
<i>Carex harfordii</i>	50	OBL	Y
<i>Helminthotheca echioides</i>	25	FACU	Y
<i>Geranium dissectum</i>	15	UPL	N
<i>Holcus lanatus</i>	10	FAC	N
<i>Vicea sativa</i>	+	FACU	N
<i>Rumex crispus</i>	+	FAC	N
TOTAL	100.0		0

50% of stratum cover = 50.0 20% = 20.0

Dominance Test:

Total # of dominant species across all strata: 2

Total # of dominants that are hydrophytic (status of OBL, FACW, or FAC): 1

Percentage of dominants that are hydrophytic: 50%
[Meets dominance test if >50%]

Prevalence Index:

Total % cover of species across all strata:

OBL: _____ x 1 = _____
 FACW: _____ x 2 = _____
 FAC: _____ x 3 = _____
 FACU: _____ x 4 = _____
 UPL: _____ x 5 = _____

Total: _____ (A) _____ (B)

Prevalence Index (B/A) =
 [Hydrophytic vegetation dominant if B/A ≤ 3.0]

Meets CCC or LCP hydrophytic vegetation criteria? Yes No

Comments: Sample Point is dominated by OBL and FACU species and does not meet any hydrophytic vegetation indicators. "+" indicates a trace occurrence.

California Coastal Act Wetland Data Sheet

SOILS Slope (%): _____ Soil map unit: Watsonville loam, nearly level

SOIL PROFILE

Depth	Matrix Color	Redox Color	% and contrast	Redox type	Texture	Comments
0-10	7.5YR 3/2				Silty Clay Loam	Moist
10-14	7.5YR 3/2				Clay	Saturated

All soils:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) [Arid West only]
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Other (explain below)**

Loamy and clayey soils only:

- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9) [Arid West only]

Sandy soils only:

- Sandy Mucky Mineral (S1)
 - Sandy Gleyed Matrix (S4)
 - Sandy Redox (S5)
 - Stripped Matrix (S6)
- Test indicators (NRCS v7):
- 2 cm Muck (A10) [WMVC only]
 - Very Shallow Dark Surface (TF12)

Meets CCC or LCP hydric soil criteria? Yes No

Comments: Sample point does not meet any indicators for hydric soils.

HYDROLOGY (indicators from Corps Regional Supplements, applicable to coastal California only)

Primary indicators (only 1 needed to meet criteria):

- Surface water (A1) *Depth (in.):* _____
- High water table (A2) *Depth (in.):* 10"
- Soil saturation (A3) *Depth (in.):* 10"
- Water marks (B1) [if in Arid West: Nonriverine only]
- Sediment deposits (B2) [if in Arid West: Nonriverine only]
- Drift deposits (B3) [if in Arid West: Nonriverine only]
- Algal mat or crust (B4) [WMVC only; see B12]
- Iron deposits (B5) [WMVC only]
- Surface soil cracks (B6)
- Inundation visible on aerial imagery (B7)
- Sparsely vegetated concave surface (B8) [WMVC only]
- Water-stained leaves (B9) [Arid West and MLRA 5 only]
- Salt crust (B11)
- Biotic Crust (B12) [Arid West only; see B4]
- Aquatic invertebrates (B13)
- Hydrogen sulfide odor (C1)
- Oxidized rhizospheres (C3)
- Presence of reduced iron (C4)
- Recent iron reduction in tilled soils (C6)

- Stunted or stressed plants (D1) [WMVC only]
- Secondary indicators (need 2+ to meet criteria):
- Water marks (B1) [Arid West riverine only]
 - Sediment deposits (B2) [Arid West riverine only]
 - Drift deposits (B3) [Arid West riverine only]
 - Water-stained leaves (B9) [WMVC:MLRA 4B only]
 - Drainage patterns (B10)
 - Dry-season water table (C2)
 - Thin muck surface (C7) [Arid West only]
 - Crayfish burrows (C8) [Arid West only]
 - Saturation visible on aerial imagery (C9)
 - Geomorphic position (D2) [WMVC only]
 - Shallow aquitard (D3)
 - Frost-heave hummocks (D4) [WMVC only]
 - Raised ant mounds (D6) [WMVC only]
 - FAC-neutral test (D5)** (Does not meet test)

Other (explain below)

Meets CCC or LCP wetland hydrology criteria? Yes No

Comments: Wetland hydrology indicators observed at the sample point included high water table and saturation at 10" below ground surface.

Project Name: Wavecrest South Sample Point ID: SP 22

Project Name: Wavecrest Southern Alignment County: San Mateo

City/Location: Half Moon Bay LCP (if applicable): Half Moon Bay

Applicant/Owner: Coastside Land Trust LRR A (Western Mts., Valley, and Coast [WMVC])

WRA Investigator(s): Stephanie Freed LRR C (Arid West)

Date: 2.16.16 SAMPLE POINT ID: SP 22

HABITAT: _____

CCC/LCP WETLAND DETERMINATION

Meets CCC or LCP vegetation criteria? Yes No

Meets CCC or LCP hydric soil criteria? Yes No

Meets CCC or LCP hydrology criteria? Yes No

CCC/LCP WETLAND? Yes No

Comments: Sample point located within hummocky coastal field. The sample point met wetland indicators for hydrophytic vegetation, hydric soils, and wetland hydrology. The wetland upland boundary was determined based on grade break, shift from *Juncus phaeocephalus* and *Carex harfordii* to *Helminthotheca echioides* and *Holcus lanatus*. Sample point taken more than 14 days after last rain event. Sample point paired with SP 23.

VEGETATION

*indicator status from the USFWS 1996 National List of wetland species

TREES - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = 20% =

SAPLING/SHRUBS - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = 20% =

HERBACEOUS - Plot size: 10x10	% Cover	Status*	Dominant?
<i>Juncus phaeocephalus</i>	80	FACW	Y
<i>Carex harfordii</i>	10	OBL	N
<i>Holcus lanatus</i>	5	FAC	N
<i>Helminthotheca echioides</i>	3	FACU	N
<i>Rumex crispus</i>	2	FAC	N
TOTAL	100.0		0

50% of stratum cover = 50.0 20% = 20.0

Dominance Test:

Total # of dominant species across all strata:

Total # of dominants that are hydrophytic (status of OBL, FACW, or FAC):

Percentage of dominants that are hydrophytic:
[Meets dominance test if >50%]

Prevalence Index:

Total % cover of species across all strata:

OBL: _____ x 1 = _____
 FACW: _____ x 2 = _____
 FAC: _____ x 3 = _____
 FACU: _____ x 4 = _____
 UPL: _____ x 5 = _____

Total: _____ (A) _____ (B)

Prevalence Index (B/A) =
 [Hydrophytic vegetation dominant if B/A ≤ 3.0]

Meets CCC or LCP hydrophytic vegetation criteria? Yes No

Comments: Sample Point is dominated by FACW species and was determined to contain hydrophytic vegetation, as it meets the dominance test.

California Coastal Act Wetland Data Sheet

SOILS

Slope (%): _____

Soil map unit: Watsonville loam, nearly level

SOIL PROFILE

Depth	Matrix Color	Redox Color	% and contrast	Redox type	Texture	Comments
0-6	7.5YR 4/2	5Y 4/6	15	C	Clay	Saturated
6-14	7.5YR 4/1	7.5YR 4/4	5	C	Clay	

All soils:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) [Arid West only]
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Other (explain below)**

Loamy and clayey soils only:

- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9) [Arid West only]

Sandy soils only:

- Sandy Mucky Mineral (S1)
 - Sandy Gleyed Matrix (S4)
 - Sandy Redox (S5)
 - Stripped Matrix (S6)
- Test indicators (NRCS v7):
- 2 cm Muck (A10) [WMVC only]
 - Very Shallow Dark Surface (TF12)

Meets CCC or LCP hydric soil criteria? Yes No

Comments: Sample point meets criteria for hydric soil indicator F3 (Depleted Matrix).

HYDROLOGY (indicators from Corps Regional Supplements, applicable to coastal California only)

Primary indicators (only 1 needed to meet criteria):

- Surface water (A1) *Depth (in.):* _____
- High water table (A2) *Depth (in.):* 6"
- Soil saturation (A3) *Depth (in.):* _____
- Water marks (B1) [if in Arid West: Nonriverine only]
- Sediment deposits (B2) [if in Arid West: Nonriverine only]
- Drift deposits (B3) [if in Arid West: Nonriverine only]
- Algal mat or crust (B4) [WMVC only; see B12]
- Iron deposits (B5) [WMVC only]
- Surface soil cracks (B6)
- Inundation visible on aerial imagery (B7)
- Sparsely vegetated concave surface (B8) [WMVC only]
- Water-stained leaves (B9) [Arid West and MLRA 5 only]
- Salt crust (B11)
- Biotic Crust (B12) [Arid West only; see B4]
- Aquatic invertebrates (B13)
- Hydrogen sulfide odor (C1)
- Oxidized rhizospheres (C3)
- Presence of reduced iron (C4)
- Recent iron reduction in tilled soils (C6)

- Stunted or stressed plants (D1) [WMVC only]

Secondary indicators (need 2+ to meet criteria):

- Water marks (B1) [Arid West riverine only]
- Sediment deposits (B2) [Arid West riverine only]
- Drift deposits (B3) [Arid West riverine only]
- Water-stained leaves (B9) [WMVC:MLRA 4B only]
- Drainage patterns (B10)
- Dry-season water table (C2)
- Thin muck surface (C7) [Arid West only]
- Crayfish burrows (C8) [Arid West only]
- Saturation visible on aerial imagery (C9)
- Geomorphic position (D2) [WMVC only]
- Shallow aquitard (D3)
- Frost-heave hummocks (D4) [WMVC only]
- Raised ant mounds (D6) [WMVC only]
- FAC-neutral test (D5)** (Does not meet test)

Other (explain below)

Meets CCC or LCP wetland hydrology criteria? Yes No

Comments: Wetland hydrology indicators observed at the sample point included high water table at 6" below ground surface, oxidized rhizospheres along living roots and aquatic invertebrates.

California Coastal Act Wetland Data Sheet

Project Name: Wavecrest Southern Alignment
 City/Location: Half Moon Bay
 Applicant/Owner: Coastside Land Trust
 WRA Investigator(s): Stephanie Freed
 Date: 2.16.16

County: San Mateo
 LCP (if applicable): Half Moon Bay
 LRR A (Western Mts., Valley, and Coast [WMVC])
 LRR C (Arid West)

SAMPLE POINT ID: SP 23

HABITAT: _____

CCC/LCP WETLAND DETERMINATION

Meets CCC or LCP vegetation criteria? Yes No
 Meets CCC or LCP hydric soil criteria? Yes No
 Meets CCC or LCP hydrology criteria? Yes No
CCC/LCP WETLAND? Yes No

Comments: Sample point located within upland field adjacent to hummocky wetland feature (SP 22). Sample point did not meet wetland indicators for hydrophytic vegetation, hydric soils, or wetland hydrology. Sample point taken more than 14 days after last rain event.

VEGETATION

*indicator status from the USFWS 1996 National List of wetland species

TREES - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = _____ 20% = _____

SAPLING/SHRUBS - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = _____ 20% = _____

HERBACEOUS - Plot size: 10x10	% Cover	Status*	Dominant?
<i>Helminthotheca echioides</i>	30	FACU	Y
<i>Holcus lanatus</i>	30	FAC	Y
<i>Geranium dissectum</i>	20	UPL	Y
<i>Rumex acetosell</i>	10	FACU	N
<i>Carex harfordii</i>	5	OBL	N
<i>Juncas patens</i>	3	FACW	N
<i>Cirsium vulgare</i>	1	FACU	N
<i>Rubus ursinus</i>	+	FAC	N
TOTAL	99.0		0

50% of stratum cover = 49.5 20% = 19.8

Dominance Test:

Total # of dominant species across all strata: 3

Total # of dominants that are hydrophytic (status of OBL, FACW, or FAC): 1

Percentage of dominants that are hydrophytic: 33%
[Meets dominance test if >50%]

Prevalence Index:

Total % cover of species across all strata:

OBL: _____ x 1 = _____
 FACW: _____ x 2 = _____
 FAC: _____ x 3 = _____
 FACU: _____ x 4 = _____
 UPL: _____ x 5 = _____

Total: _____ (A) _____ (B)

Prevalence Index (B/A) =
[Hydrophytic vegetation dominant if B/A ≤ 3.0]

Meets CCC or LCP hydrophytic vegetation criteria? Yes No

Comments: Sample Point is dominated by FAC, FACU and UPL species and does not meet any hydrophytic vegetation indicators. "+" indicates a trace occurrence.

Project Name: Wavecrest South Sample Point ID: SP 23

SOILS Slope (%): _____ Soil map unit: Watsonville loam, nearly level

SOIL PROFILE

Depth	Matrix Color	Redox Color	% and contrast	Redox type	Texture	Comments
0-14	10YR 4/2				Clay Loam	Moist

All soils:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) [Arid West only]
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Other (explain below)**

Loamy and clayey soils only:

- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9) [Arid West only]

Sandy soils only:

- Sandy Mucky Mineral (S1)
 - Sandy Gleyed Matrix (S4)
 - Sandy Redox (S5)
 - Stripped Matrix (S6)
- Test indicators (NRCS v7):
- 2 cm Muck (A10) [WMVC only]
 - Very Shallow Dark Surface (TF12)

Meets CCC or LCP hydric soil criteria? Yes No

Comments: Sample point does not meet any hydric soil indicators.

HYDROLOGY (indicators from Corps Regional Supplements, applicable to coastal California only)

Primary indicators (only 1 needed to meet criteria):

- Surface water (A1) Depth (in.): _____
- High water table (A2) Depth (in.): _____
- Soil saturation (A3) Depth (in.): _____
- Water marks (B1) [if in Arid West: Nonriverine only]
- Sediment deposits (B2) [if in Arid West: Nonriverine only]
- Drift deposits (B3) [if in Arid West: Nonriverine only]
- Algal mat or crust (B4) [WMVC only; see B12]
- Iron deposits (B5) [WMVC only]
- Surface soil cracks (B6)
- Inundation visible on aerial imagery (B7)
- Sparsely vegetated concave surface (B8) [WMVC only]
- Water-stained leaves (B9) [Arid West and MLRA 5 only]
- Salt crust (B11)
- Biotic Crust (B12) [Arid West only; see B4]
- Aquatic invertebrates (B13)
- Hydrogen sulfide odor (C1)
- Oxidized rhizospheres (C3)
- Presence of reduced iron (C4)
- Recent iron reduction in tilled soils (C6)

- Stunted or stressed plants (D1) [WMVC only]

Secondary indicators (need 2+ to meet criteria):

- Water marks (B1) [Arid West riverine only]
- Sediment deposits (B2) [Arid West riverine only]
- Drift deposits (B3) [Arid West riverine only]
- Water-stained leaves (B9) [WMVC:MLRA 4B only]
- Drainage patterns (B10)
- Dry-season water table (C2)
- Thin muck surface (C7) [Arid West only]
- Crayfish burrows (C8) [Arid West only]
- Saturation visible on aerial imagery (C9)
- Geomorphic position (D2) [WMVC only]
- Shallow aquitard (D3)
- Frost-heave hummocks (D4) [WMVC only]
- Raised ant mounds (D6) [WMVC only]
- FAC-neutral test (D5)** (Does not meet test)

Other (explain below)

Meets CCC or LCP wetland hydrology criteria? Yes No

Comments: Sample point does not meet criteria for hydrology indicators.

Project Name: Wavecrest South Sample Point ID: SP 24

Project Name: Wavecrest Southern Alignment County: San Mateo

City/Location: Half Moon Bay LCP (if applicable): Half Moon Bay

Applicant/Owner: Coastside Land Trust LRR A (Western Mts., Valley, and Coast [WMVC])

WRA Investigator(s): Stephanie Freed LRR C (Arid West)

Date: 2.16.16 **SAMPLE POINT ID:** SP 24

HABITAT: _____

CCC/LCP WETLAND DETERMINATION

Meets CCC or LCP vegetation criteria? Yes No

Meets CCC or LCP hydric soil criteria? Yes No

Meets CCC or LCP hydrology criteria? Yes No

CCC/LCP WETLAND? Yes No

Comments: Sample point located within low-lying area on a coastal field. Sample point met wetland indicators for hydrophytic vegetation, hydric soils, and wetland hydrology including biotic crust. The wetland upland boundary was determined based on grade break and shift from Baccharis pilularis/Juncus patens to Mentha pulegium/Carex harfordii. Sample point taken more than 14 days after last rain event. Sample point paired with SP 20 from 2-9-16.

VEGETATION

*indicator status from the USFWS 1996 National List of wetland species

TREES - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = _____ 20% = _____

SAPLING/SHRUBS - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = _____ 20% = _____

HERBACEOUS - Plot size: 10x10	% Cover	Status*	Dominant?
<i>Carex harfordii</i>	20	OBL	Y
<i>Mentha pulegium</i>	20	OBL	Y
<i>Juncas patens</i>	20	FACW	Y
<i>Holcus lanatus</i>	15	FAC	N
<i>Polypogon monspeliensis</i>	10	FACW	N
<i>Plagiobothrys chorisianus</i>	2	OBL	N
TOTAL	87.0		0

50% of stratum cover = 43.5 20% = 17.4

Dominance Test:

Total # of dominant species across all strata: 3

Total # of dominants that are hydrophytic (status of OBL, FACW, or FAC): 3

Percentage of dominants that are hydrophytic: 100%
[Meets dominance test if >50%]

Prevalence Index:

Total % cover of species across all strata:

OBL: _____ x 1 = _____
 FACW: _____ x 2 = _____
 FAC: _____ x 3 = _____
 FACU: _____ x 4 = _____
 UPL: _____ x 5 = _____

Total: _____ (A) _____ (B)

Prevalence Index (B/A) =
 [Hydrophytic vegetation dominant if B/A ≤ 3.0]

Meets CCC or LCP hydrophytic vegetation criteria? Yes No

Comments: Sample Point is dominated by FACW and OBL species and was determined to contain hydrophytic vegetation, as it meets the dominance test.

California Coastal Act Wetland Data Sheet

SOILS

Slope (%): _____

Soil map unit: Watsonville, sandy loam, gently sloping

SOIL PROFILE

Depth	Matrix Color	Redox Color	% and contrast	Redox type	Texture	Comments
0-10	7.5YR 4/2				Clay Loam	Moist
10-14	7.5YR 4/2				Clay	

All soils:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) [Arid West only]
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)

Loamy and clayey soils only:

- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9) [Arid West only]

Sandy soils only:

- Sandy Mucky Mineral (S1)
 - Sandy Gleyed Matrix (S4)
 - Sandy Redox (S5)
 - Stripped Matrix (S6)
- Test indicators (NRCS v7):
- 2 cm Muck (A10) [WMVC only]
 - Very Shallow Dark Surface (TF12)

Other (explain below)

Meets CCC or LCP hydric soil criteria?

Yes No

Comments: While no hydric soil indicators were observed, this sample point contains naturally problematic seasonally ponded soils. Sample point occurs in a seasonally ponded depression with a restrictive clay layer and lacks hydric soil indicators due to limited saturation depth and saline conditions.

HYDROLOGY (indicators from Corps Regional Supplements, applicable to coastal California only)

Primary indicators (only 1 needed to meet criteria):

- Surface water (A1) *Depth (in.):* _____
- High water table (A2) *Depth (in.):* _____
- Soil saturation (A3) *Depth (in.):* _____
- Water marks (B1) [if in Arid West: Nonriverine only]
- Sediment deposits (B2) [if in Arid West: Nonriverine only]
- Drift deposits (B3) [if in Arid West: Nonriverine only]
- Algal mat or crust (B4) [WMVC only; see B12]
- Iron deposits (B5) [WMVC only]
- Surface soil cracks (B6)
- Inundation visible on aerial imagery (B7)
- Sparsely vegetated concave surface (B8) [WMVC only]
- Water-stained leaves (B9) [Arid West and MLRA 5 only]
- Salt crust (B11)
- Biotic Crust (B12) [Arid West only; see B4]
- Aquatic invertebrates (B13)
- Hydrogen sulfide odor (C1)
- Oxidized rhizospheres (C3)
- Presence of reduced iron (C4)
- Recent iron reduction in tilled soils (C6)

Stunted or stressed plants (D1) [WMVC only]

Secondary indicators (need 2+ to meet criteria):

- Water marks (B1) [Arid West riverine only]
- Sediment deposits (B2) [Arid West riverine only]
- Drift deposits (B3) [Arid West riverine only]
- Water-stained leaves (B9) [WMVC:MLRA 4B only]
- Drainage patterns (B10)
- Dry-season water table (C2)
- Thin muck surface (C7) [Arid West only]
- Crayfish burrows (C8) [Arid West only]
- Saturation visible on aerial imagery (C9)
- Geomorphic position (D2) [WMVC only]
- Shallow aquitard (D3)
- Frost-heave hummocks (D4) [WMVC only]
- Raised ant mounds (D6) [WMVC only]
- FAC-neutral test (D5)** (Does not meet test)

Other (explain below)

Meets CCC or LCP wetland hydrology criteria?

Yes No

Comments: Wetland hydrology indicators observed at the sample point included biotic crust and FAC-Neutral Test.

California Coastal Act Wetland Data Sheet

Project Name: Wavecrest Southern Alignment
 City/Location: Half Moon Bay
 Applicant/Owner: Coastside Land Trust
 WRA Investigator(s): Stephanie Freed
 Date: 2.16.16

County: San Mateo
 LCP (if applicable): Half Moon Bay
 LRR A (Western Mts., Valley, and Coast [WMVC])
 LRR C (Arid West)

SAMPLE POINT ID: SP 25

HABITAT: _____

CCC/LCP WETLAND DETERMINATION

Meets CCC or LCP vegetation criteria? Yes No
 Meets CCC or LCP hydric soil criteria? Yes No
 Meets CCC or LCP hydrology criteria? Yes No
CCC/LCP WETLAND? Yes No

Comments: Sample point located within coastal field. The sample point met wetland indicators for hydrophytic vegetation, but did not meet indicators for hydric soils or wetland hydrology. Sample point taken more than 14 days after last rain event. Sample point paired with SP 20 from 2-9-16.

VEGETATION

*indicator status from the USFWS 1996 National List of wetland species

TREES - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = _____ 20% = _____

SAPLING/SHRUBS - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = _____ 20% = _____

HERBACEOUS - Plot size: 10x10	% Cover	Status*	Dominant?
<i>Plagiobothrys chorisianus</i>	50	OBL	Y
<i>Juncus patens</i>	20	FACW	Y
<i>Polypogon monspeliensis</i>	10	FACW	Y
<i>Mentha pulegium</i>	1	OBL	N
<i>Baccharis pilularis</i>	1	UPL	N
TOTAL	82.0		0

50% of stratum cover = 41.0 20% = 16.4

Dominance Test:

Total # of dominant species across all strata: 2

Total # of dominants that are hydrophytic (status of OBL, FACW, or FAC): 2

Percentage of dominants that are hydrophytic: 100%
[Meets dominance test if >50%]

Prevalence Index:

Total % cover of species across all strata:
 OBL: _____ x 1 = _____
 FACW: _____ x 2 = _____
 FAC: _____ x 3 = _____
 FACU: _____ x 4 = _____
 UPL: _____ x 5 = _____

Total: _____ (A) _____ (B)

Prevalence Index (B/A) =
[Hydrophytic vegetation dominant if B/A ≤ 3.0]

Meets CCC or LCP hydrophytic vegetation criteria? Yes No

Comments: Sample Point is dominated by FACW and OBL species and was determined to contain hydrophytic vegetation, as it meets the dominance test.

Project Name: Wavecrest South Sample Point ID: SP 25

SOILS Slope (%): _____ Soil map unit: Watsonville sandy loam, gently sloping

SOIL PROFILE

Depth	Matrix Color	Redox Color	% and contrast	Redox type	Texture	Comments
0-10	7.5YR 4/2				Clay Loam	Moist
10-14	7.5YR 4/2				Clay	

All soils:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) [Arid West only]
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Other (explain below)**

Loamy and clayey soils only:

- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9) [Arid West only]

Sandy soils only:

- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Test indicators (NRCS v7):
- 2 cm Muck (A10) [WMVC only]
- Very Shallow Dark Surface (TF12)

Meets CCC or LCP hydric soil criteria? Yes No

Comments: No hydric soil indicators were observed at this sample point location.

HYDROLOGY (indicators from Corps Regional Supplements, applicable to coastal California only)

Primary indicators (only 1 needed to meet criteria):

- Surface water (A1) Depth (in.): _____
- High water table (A2) Depth (in.): _____
- Soil saturation (A3) Depth (in.): _____
- Water marks (B1) [if in Arid West: Nonriverine only]
- Sediment deposits (B2) [if in Arid West: Nonriverine only]
- Drift deposits (B3) [if in Arid West: Nonriverine only]
- Algal mat or crust (B4) [WMVC only; see B12]
- Iron deposits (B5) [WMVC only]
- Surface soil cracks (B6)
- Inundation visible on aerial imagery (B7)
- Sparsely vegetated concave surface (B8) [WMVC only]
- Water-stained leaves (B9) [Arid West and MLRA 5 only]
- Salt crust (B11)
- Biotic Crust (B12) [Arid West only; see B4]
- Aquatic invertebrates (B13)
- Hydrogen sulfide odor (C1)
- Oxidized rhizospheres (C3)
- Presence of reduced iron (C4)
- Recent iron reduction in tilled soils (C6)

- Stunted or stressed plants (D1) [WMVC only]

Secondary indicators (need 2+ to meet criteria):

- Water marks (B1) [Arid West riverine only]
- Sediment deposits (B2) [Arid West riverine only]
- Drift deposits (B3) [Arid West riverine only]
- Water-stained leaves (B9) [WMVC:MLRA 4B only]
- Drainage patterns (B10)
- Dry-season water table (C2)
- Thin muck surface (C7) [Arid West only]
- Crayfish burrows (C8) [Arid West only]
- Saturation visible on aerial imagery (C9)
- Geomorphic position (D2) [WMVC only]
- Shallow aquitard (D3)
- Frost-heave hummocks (D4) [WMVC only]
- Raised ant mounds (D6) [WMVC only]
- FAC-neutral test (D5)** (Does not meet test)

Other (explain below)

Meets CCC or LCP wetland hydrology criteria? Yes No

Comments: Wetland hydrology indicators observed at the sample point included FAC-Neutral Test.

Project Name: Wavecrest South Sample Point ID: SP 26

Project Name: Wavecrest Southern Alignment County: San Mateo

City/Location: Half Moon Bay LCP (if applicable): Half Moon Bay

Applicant/Owner: Coastside Land Trust LRR A (Western Mts., Valley, and Coast [WMVC])

WRA Investigator(s): Stephanie Freed LRR C (Arid West)

Date: 2.16.16 SAMPLE POINT ID: SP 26

HABITAT: _____

CCC/LCP WETLAND DETERMINATION

- Meets CCC or LCP vegetation criteria? Yes No
 Meets CCC or LCP hydric soil criteria? Yes No
 Meets CCC or LCP hydrology criteria? Yes No
CCC/LCP WETLAND? Yes No

Comments: Sample point located within former tire rut in coastal field. The sample point met wetland indicators for hydrophytic vegetation, but did not meet indicators for hydric soils or wetland hydrology. Wetland boundary based on grade break and shift from Carex harfordii to Helminthotheca echioides dominated vegetation. Sample point taken more than 14 days after last rain event. Sample point paired with SP 27.

VEGETATION

*indicator status from the USFWS 1996 National List of wetland species

TREES - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = _____ 20% = _____

SAPLING/SHRUBS - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = _____ 20% = _____

HERBACEOUS - Plot size: 10x10	% Cover	Status*	Dominant?
<i>Festuca perennis</i>	30	FAC	Y
<i>Carex harfordii</i>	20	OBL	Y
<i>Juncus phaeocephalus</i>	20	FACW	Y
<i>Helminthotheca echioides</i>	10	FACU	N
<i>Geranium dissectum</i>	5	UPL	N
<i>Rumex acetosella</i>	5	FACU	N
<i>Rumex crispus</i>	2	FAC	N
<i>Lysimachia arvensis</i>	+	FAC	N
TOTAL	92.0		0

50% of stratum cover = 46.0 20% = 18.4

Dominance Test:

Total # of dominant species across all strata: 3

Total # of dominants that are hydrophytic (status of OBL, FACW, or FAC): 3

Percentage of dominants that are hydrophytic: 100%
[Meets dominance test if >50%]

Prevalence Index:

Total % cover of species across all strata:

OBL: _____ x 1 = _____
 FACW: _____ x 2 = _____
 FAC: _____ x 3 = _____
 FACU: _____ x 4 = _____
 UPL: _____ x 5 = _____

Total: _____ (A) _____ (B)

Prevalence Index (B/A) =
[Hydrophytic vegetation dominant if B/A ≤ 3.0]

Meets CCC or LCP hydrophytic vegetation criteria? Yes No

Comments: Sample Point is dominated by FAC, FACW, and OBL species and was determined to contain hydrophytic vegetation, as it meets the dominance test.

California Coastal Act Wetland Data Sheet

SOILS Slope (%): _____ Soil map unit: Watsonville loam, nearly level

SOIL PROFILE

Depth	Matrix Color	Redox Color	% and contrast	Redox type	Texture	Comments
0-10	7.5YR 3/2				Clay Loam	Moist, gravelly
10-14	7.5YR 3/2				Clay	

All soils:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) [Arid West only]
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Other (explain below)**

Loamy and clayey soils only:

- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9) [Arid West only]

Sandy soils only:

- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Test indicators (NRCS v7):
- 2 cm Muck (A10) [WMVC only]
- Very Shallow Dark Surface (TF12)

Meets CCC or LCP hydric soil criteria? Yes No

Comments: No hydric soil indicators were observed at this sample point location.

HYDROLOGY (indicators from Corps Regional Supplements, applicable to coastal California only)

Primary indicators (only 1 needed to meet criteria):

- Surface water (A1) *Depth (in.):* _____
- High water table (A2) *Depth (in.):* _____
- Soil saturation (A3) *Depth (in.):* _____
- Water marks (B1) [if in Arid West: Nonriverine only]
- Sediment deposits (B2) [if in Arid West: Nonriverine only]
- Drift deposits (B3) [if in Arid West: Nonriverine only]
- Algal mat or crust (B4) [WMVC only; see B12]
- Iron deposits (B5) [WMVC only]
- Surface soil cracks (B6)
- Inundation visible on aerial imagery (B7)
- Sparsely vegetated concave surface (B8) [WMVC only]
- Water-stained leaves (B9) [Arid West and MLRA 5 only]
- Salt crust (B11)
- Biotic Crust (B12) [Arid West only; see B4]
- Aquatic invertebrates (B13)
- Hydrogen sulfide odor (C1)
- Oxidized rhizospheres (C3)
- Presence of reduced iron (C4)
- Recent iron reduction in tilled soils (C6)

- Stunted or stressed plants (D1) [WMVC only]
- Secondary indicators (need 2+ to meet criteria):
- Water marks (B1) [Arid West riverine only]
- Sediment deposits (B2) [Arid West riverine only]
- Drift deposits (B3) [Arid West riverine only]
- Water-stained leaves (B9) [WMVC:MLRA 4B only]
- Drainage patterns (B10)
- Dry-season water table (C2)
- Thin muck surface (C7) [Arid West only]
- Crayfish burrows (C8) [Arid West only]
- Saturation visible on aerial imagery (C9)
- Geomorphic position (D2) [WMVC only]
- Shallow aquitard (D3)
- Frost-heave hummocks (D4) [WMVC only]
- Raised ant mounds (D6) [WMVC only]
- FAC-neutral test (D5)** (Does not meet test)

Other (explain below)

Meets CCC or LCP wetland hydrology criteria? Yes No

Comments: Wetland hydrology indicators observed at the sample point included FAC-Neutral Test.

California Coastal Act Wetland Data Sheet

Project Name: Wavecrest Southern Alignment
 City/Location: Half Moon Bay
 Applicant/Owner: Coastside Land Trust
 WRA Investigator(s): Stephanie Freed
 Date: 2.16.16

County: San Mateo
 LCP (if applicable): Half Moon Bay
 LRR A (Western Mts., Valley, and Coast [WMVC])
 LRR C (Arid West)

SAMPLE POINT ID: SP 27

HABITAT: _____

CCC/LCP WETLAND DETERMINATION

Meets CCC or LCP vegetation criteria? Yes No
 Meets CCC or LCP hydric soil criteria? Yes No
 Meets CCC or LCP hydrology criteria? Yes No
CCC/LCP WETLAND? Yes No

Comments: Sample point located adjacent to former tire rut (SP 26) in coastal field. Sample point did not meet indicators for hydrophytic vegetation, hydric soils, or wetland hydrology. Sample point taken more than 14 days after last rain event.

VEGETATION

*indicator status from the USFWS 1996 National List of wetland species

TREES - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = _____ 20% = _____

SAPLING/SHRUBS - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = _____ 20% = _____

HERBACEOUS - Plot size: 10x10	% Cover	Status*	Dominant?
<i>Festuca perennis</i>	35	FAC	Y
<i>Helminthotheca echioides</i>	25	FACU	Y
<i>Juncus phaeocephalus</i>	10	FACW	Y
<i>Geranium dissectum</i>	10	UPL	N
<i>Carex harfordii</i>	+	OBL	N
<i>Rumex acetosella</i>	+	FACU	N
TOTAL	80.0		0

50% of stratum cover = 40.0 20% = 16.0

Dominance Test:

Total # of dominant species across all strata: 2

Total # of dominants that are hydrophytic (status of OBL, FACW, or FAC): 1

Percentage of dominants that are hydrophytic: 50%
[Meets dominance test if >50%]

Prevalence Index:

Total % cover of species across all strata:

OBL: _____ x 1 = _____
 FACW: _____ x 2 = _____
 FAC: _____ x 3 = _____
 FACU: _____ x 4 = _____
 UPL: _____ x 5 = _____

Total: _____ (A) _____ (B)

Prevalence Index (B/A) =
[Hydrophytic vegetation dominant if B/A ≤ 3.0]

Meets CCC or LCP hydrophytic vegetation criteria? Yes No

Comments: Sample Point is dominated by FAC and FACU species and does meet any hydrophytic vegetation indicators.

Project Name: Wavcrest South Sample Point ID: SP 27

SOILS Slope (%): _____ Soil map unit: Watsonville loam, nearly level

SOIL PROFILE

Depth	Matrix Color	Redox Color	% and contrast	Redox type	Texture	Comments
0-10	7.5YR 3/2				Clay Loam	Moist, gravelly
10-14	7.5YR 3/2	7.5YR 4/4	8, C	M	Clay	
		7.5YR 4/1	7, D	M	Clay	

All soils:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) [Arid West only]
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Other (explain below)**

Loamy and clayey soils only:

- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9) [Arid West only]

Sandy soils only:

- Sandy Mucky Mineral (S1)
 - Sandy Gleyed Matrix (S4)
 - Sandy Redox (S5)
 - Stripped Matrix (S6)
- Test indicators (NRCS v7):
- 2 cm Muck (A10) [WMVC only]
 - Very Shallow Dark Surface (TF12)

Meets CCC or LCP hydric soil criteria? Yes No

Comments: No indicators of hydric soils were met for this sampling point.

HYDROLOGY (indicators from Corps Regional Supplements, applicable to coastal California only)

Primary indicators (only 1 needed to meet criteria):

- Surface water (A1) Depth (in.): _____
- High water table (A2) Depth (in.): _____
- Soil saturation (A3) Depth (in.): _____
- Water marks (B1) [if in Arid West: Nonriverine only]
- Sediment deposits (B2) [if in Arid West: Nonriverine only]
- Drift deposits (B3) [if in Arid West: Nonriverine only]
- Algal mat or crust (B4) [WMVC only; see B12]
- Iron deposits (B5) [WMVC only]
- Surface soil cracks (B6)
- Inundation visible on aerial imagery (B7)
- Sparsely vegetated concave surface (B8) [WMVC only]
- Water-stained leaves (B9) [Arid West and MLRA 5 only]
- Salt crust (B11)
- Biotic Crust (B12) [Arid West only; see B4]
- Aquatic invertebrates (B13)
- Hydrogen sulfide odor (C1)
- Oxidized rhizospheres (C3)
- Presence of reduced iron (C4)
- Recent iron reduction in tilled soils (C6)

- Stunted or stressed plants (D1) [WMVC only]

Secondary indicators (need 2+ to meet criteria):

- Water marks (B1) [Arid West riverine only]
- Sediment deposits (B2) [Arid West riverine only]
- Drift deposits (B3) [Arid West riverine only]
- Water-stained leaves (B9) [WMVC:MLRA 4B only]
- Drainage patterns (B10)
- Dry-season water table (C2)
- Thin muck surface (C7) [Arid West only]
- Crayfish burrows (C8) [Arid West only]
- Saturation visible on aerial imagery (C9)
- Geomorphic position (D2) [WMVC only]
- Shallow aquitard (D3)
- Frost-heave hummocks (D4) [WMVC only]
- Raised ant mounds (D6) [WMVC only]
- FAC-neutral test (D5)** (Does not meet test)

Other (explain below)

Meets CCC or LCP wetland hydrology criteria? Yes No

Comments: No wetland hydrology indicators were observed at the sample point.

Project Name: Wavecrest South Sample Point ID: SP 28

Project Name: Wavecrest Southern Alignment County: San Mateo

City/Location: Half Moon Bay LCP (if applicable): Half Moon Bay

Applicant/Owner: Coastside Land Trust LRR A (Western Mts., Valley, and Coast [WMVC])

WRA Investigator(s): Stephanie Freed LRR C (Arid West)

Date: 2.16.16 **SAMPLE POINT ID:** SP 28

HABITAT: _____

CCC/LCP WETLAND DETERMINATION

Meets CCC or LCP vegetation criteria? Yes No *Comments:* Sample point located within depression in coastal field. The sample point met wetland indicators for hydrophytic vegetation and wetland hydrology but did not meet indicators for hydric soils. Wetland boundary based on grade break and shift from *Plagiobothrys chorisianus* to upland species. Sample point taken more than 14 days after last rain event. Sample point paired with SP 29.

Meets CCC or LCP hydric soil criteria? Yes No

Meets CCC or LCP hydrology criteria? Yes No

CCC/LCP WETLAND? Yes No

VEGETATION

*indicator status from the USFWS 1996 National List of wetland species

TREES - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = _____ 20% = _____

SAPLING/SHRUBS - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = _____ 20% = _____

HERBACEOUS - Plot size: 10x10	% Cover	Status*	Dominant?
<i>Festuca perennis</i>	30	FAC	Y
<i>Plagiobothrys chorisianus</i>	30	OBL	Y
<i>Polypogon monspeliensis</i>	30	FACW	Y
TOTAL	90.0		0

50% of stratum cover = 45.0 20% = 18.0

Dominance Test:

Total # of dominant species across all strata: 3

Total # of dominants that are hydrophytic (status of OBL, FACW, or FAC): 3

Percentage of dominants that are hydrophytic: 100%
[Meets dominance test if >50%]

Prevalence Index:

Total % cover of species across all strata:

OBL: _____ x 1 = _____
 FACW: _____ x 2 = _____
 FAC: _____ x 3 = _____
 FACU: _____ x 4 = _____
 UPL: _____ x 5 = _____

Total: _____ (A) _____ (B)

Prevalence Index (B/A) =
 [Hydrophytic vegetation dominant if B/A ≤ 3.0]

Meets CCC or LCP hydrophytic vegetation criteria? Yes No

Comments: Sample Point is dominated by FAC, FACW, and OBL species and was determined to contain hydrophytic vegetation, as it meets the dominance test.

California Coastal Act Wetland Data Sheet

SOILS

Slope (%): _____

Soil map unit: Watsonville sandy loam, gently sloping

SOIL PROFILE

Depth	Matrix Color	Redox Color	% and contrast	Redox type	Texture	Comments
0-14	7.5YR 2.5/1				Clay Loam	trace fine sand

All soils:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) [Arid West only]
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Other (explain below)**

Loamy and clayey soils only:

- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9) [Arid West only]

Sandy soils only:

- Sandy Mucky Mineral (S1)
 - Sandy Gleyed Matrix (S4)
 - Sandy Redox (S5)
 - Stripped Matrix (S6)
- Test indicators (NRCS v7):
- 2 cm Muck (A10) [WMVC only]
 - Very Shallow Dark Surface (TF12)

Meets CCC or LCP hydric soil criteria? Yes No

Comments: This sample point did not meet any indicators for hydric soils.

HYDROLOGY (indicators from Corps Regional Supplements, applicable to coastal California only)

Primary indicators (only 1 needed to meet criteria):

- Surface water (A1) *Depth (in.):* _____
- High water table (A2) *Depth (in.):* _____
- Soil saturation (A3) *Depth (in.):* _____
- Water marks (B1) [if in Arid West: Nonriverine only]
- Sediment deposits (B2) [if in Arid West: Nonriverine only]
- Drift deposits (B3) [if in Arid West: Nonriverine only]
- Algal mat or crust (B4) [WMVC only; see B12]
- Iron deposits (B5) [WMVC only]
- Surface soil cracks (B6)
- Inundation visible on aerial imagery (B7)
- Sparsely vegetated concave surface (B8) [WMVC only]
- Water-stained leaves (B9) [Arid West and MLRA 5 only]
- Salt crust (B11)
- Biotic Crust (B12) [Arid West only; see B4]
- Aquatic invertebrates (B13)
- Hydrogen sulfide odor (C1)
- Oxidized rhizospheres (C3)
- Presence of reduced iron (C4)
- Recent iron reduction in tilled soils (C6)

- Stunted or stressed plants (D1) [WMVC only]

Secondary indicators (need 2+ to meet criteria):

- Water marks (B1) [Arid West riverine only]
- Sediment deposits (B2) [Arid West riverine only]
- Drift deposits (B3) [Arid West riverine only]
- Water-stained leaves (B9) [WMVC:MLRA 4B only]
- Drainage patterns (B10)
- Dry-season water table (C2)
- Thin muck surface (C7) [Arid West only]
- Crayfish burrows (C8) [Arid West only]
- Saturation visible on aerial imagery (C9)
- Geomorphic position (D2) [WMVC only]
- Shallow aquitard (D3)
- Frost-heave hummocks (D4) [WMVC only]
- Raised ant mounds (D6) [WMVC only]
- FAC-neutral test (D5)** (Does not meet test)

Other (explain below)

Meets CCC or LCP wetland hydrology criteria? Yes No

Comments: Wetland hydrology indicators observed include the FAC-Neutral Test.

California Coastal Act Wetland Data Sheet

Project Name: Wavecrest Southern Alignment
 City/Location: Half Moon Bay
 Applicant/Owner: Coastside Land Trust
 WRA Investigator(s): Stephanie Freed
 Date: 2.16.16

County: San Mateo
 LCP (if applicable): Half Moon Bay
 LRR A (Western Mts., Valley, and Coast [WMVC])
 LRR C (Arid West)

SAMPLE POINT ID: SP 29

HABITAT: _____

CCC/LCP WETLAND DETERMINATION

Meets CCC or LCP vegetation criteria? Yes No
 Meets CCC or LCP hydric soil criteria? Yes No
 Meets CCC or LCP hydrology criteria? Yes No
CCC/LCP WETLAND? Yes No

Comments: Sample point located adjacent to depression in coastal field. The sample point did not meet wetland indicators for hydrophytic vegetation, hydric soils, or wetland hydrology. Sample point taken more than 14 days after last rain event. Sample point taken more than 14 days after last rain event. Sample point paired with SP 28.

VEGETATION

*indicator status from the USFWS 1996 National List of wetland species

TREES - Plot size: 30x30	% Cover	Status*	Dominant?
TOTAL			

50% of stratum cover = _____ 20% = _____

SAPLING/SHRUBS - Plot size: 30x30	% Cover	Status*	Dominant?
<i>Baccharis pilularis</i>	60	UPL	Y
TOTAL	60.0		0

50% of stratum cover = 30.0 20% = 12.0

HERBACEOUS - Plot size: 10x10	% Cover	Status*	Dominant?
<i>Juncus patens</i>	20	FACW	Y
<i>Chlorogalum pomeridianum</i>	15	UPL	Y
<i>Rubus ursinus</i>	5	FAC	N
<i>Festuca perennis</i>	3	FAC	N
<i>Scrophularia californica</i>	2	FAC	N
<i>Horkelia californica</i>	2	UPL	N
<i>Taraxia ovata</i>	2	UPL	N
TOTAL	49.0		0

50% of stratum cover = 24.5 20% = 9.8

Dominance Test:

Total # of dominant species across all strata: 3

Total # of dominants that are hydrophytic (status of OBL, FACW, or FAC): 1

Percentage of dominants that are hydrophytic: 33%
 [Meets dominance test if >50%]

Prevalence Index:

Total % cover of species across all strata:
 OBL: _____ x 1 = _____
 FACW: _____ x 2 = _____
 FAC: _____ x 3 = _____
 FACU: _____ x 4 = _____
 UPL: _____ x 5 = _____

Total: _____ (A) _____ (B)

Prevalence Index (B/A) =
 [Hydrophytic vegetation dominant if B/A ≤ 3.0]

Meets CCC or LCP hydrophytic vegetation criteria? Yes No

Comments: Sample Point is dominated by UPL and FACW species and did not meet any indicators for wetland hydrology.

Project Name: Wavecrest South Sample Point ID: SP 29

SOILS Slope (%): _____ Soil map unit: Watsonville sandy loam, gently sloping

SOIL PROFILE

Depth	Matrix Color	Redox Color	% and contrast	Redox type	Texture	Comments
0-14	7.5YR 2.5/1				Clay Loam	trace fine sand

All soils:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) [Arid West only]
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Other (explain below)**

Loamy and clayey soils only:

- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9) [Arid West only]

Sandy soils only:

- Sandy Mucky Mineral (S1)
 - Sandy Gleyed Matrix (S4)
 - Sandy Redox (S5)
 - Stripped Matrix (S6)
- Test indicators (NRCS v7):
- 2 cm Muck (A10) [WMVC only]
 - Very Shallow Dark Surface (TF12)

Meets CCC or LCP hydric soil criteria? Yes No

Comments: This sample point did not meet any indicators for hydric soils.

HYDROLOGY (indicators from Corps Regional Supplements, applicable to coastal California only)

Primary indicators (only 1 needed to meet criteria):

- Surface water (A1) Depth (in.): _____
- High water table (A2) Depth (in.): _____
- Soil saturation (A3) Depth (in.): _____
- Water marks (B1) [if in Arid West: Nonriverine only]
- Sediment deposits (B2) [if in Arid West: Nonriverine only]
- Drift deposits (B3) [if in Arid West: Nonriverine only]
- Algal mat or crust (B4) [WMVC only; see B12]
- Iron deposits (B5) [WMVC only]
- Surface soil cracks (B6)
- Inundation visible on aerial imagery (B7)
- Sparsely vegetated concave surface (B8) [WMVC only]
- Water-stained leaves (B9) [Arid West and MLRA 5 only]
- Salt crust (B11)
- Biotic Crust (B12) [Arid West only; see B4]
- Aquatic invertebrates (B13)
- Hydrogen sulfide odor (C1)
- Oxidized rhizospheres (C3)
- Presence of reduced iron (C4)
- Recent iron reduction in tilled soils (C6)

- Stunted or stressed plants (D1) [WMVC only]

Secondary indicators (need 2+ to meet criteria):

- Water marks (B1) [Arid West riverine only]
- Sediment deposits (B2) [Arid West riverine only]
- Drift deposits (B3) [Arid West riverine only]
- Water-stained leaves (B9) [WMVC:MLRA 4B only]
- Drainage patterns (B10)
- Dry-season water table (C2)
- Thin muck surface (C7) [Arid West only]
- Crayfish burrows (C8) [Arid West only]
- Saturation visible on aerial imagery (C9)
- Geomorphic position (D2) [WMVC only]
- Shallow aquitard (D3)
- Frost-heave hummocks (D4) [WMVC only]
- Raised ant mounds (D6) [WMVC only]
- FAC-neutral test (D5)** (Does not meet test)

Other (explain below)

Meets CCC or LCP wetland hydrology criteria? Yes No

Comments: No wetland hydrology indicators were observed at sample point location.

APPENDIX D

LIST OF OBSERVED PLANT AND ANIMAL SPECIES WITHIN THE STUDY AREA

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Appendix D. Plant and wildlife species observed in the Study Area on January 26 and 27, February 9 and 16, April 15 and June 22, 2016 as well as January 14, 2020.

SCIENTIFIC NAME	COMMON NAME	STATUS	WETLAND STATUS ¹
Plants			
<i>Acacia melanoxylon</i>	Blackwood acacia	--	UPL
<i>Angelica hendersonii</i>	Henderson's angelica	--	UPL
<i>Athyrium filix-femina</i> var. <i>cyclosorum</i>	Western lady fern	--	FAC
<i>Avena barbata</i>	Slim oat	--	UPL
<i>Baccharis pilularis</i> ssp. <i>consanguinea</i>	Coyote brush	--	UPL
<i>Baccharis pilularis</i> ssp. <i>pilularis</i>	Prostrate coyote brush	--	UPL
<i>Bellis perennis</i>	English lawn daisy	--	UPL
<i>Brassica nigra</i>	Black mustard	--	UPL
<i>Brassica rapa</i>	Common mustard	--	FACU
<i>Briza minor</i>	Little rattlesnake grass	--	FAC
<i>Bromus catharticus</i>	Rescue grass	--	UPL
<i>Bromus diandrus</i>	Ripgut brome	--	UPL
<i>Bromus hordeaceus</i>	Soft chess	--	FACU
<i>Bromus maritimus</i>	Maritime brome	--	UPL
<i>Cakile maritima</i>	Sea rocket	--	FAC
<i>Carduus pycnocephalus</i> ssp. <i>pycnocephalus</i>	Italian thistle	--	UPL
<i>Carex harfordii</i>	Monterey sedge	--	OBL
<i>Carex obnupta</i>	Slough sedge	--	OBL
<i>Carpobrotus edulis</i>	Ice plant	--	UPL
<i>Castilleja wightii</i>	Wight's paintbrush	--	UPL
<i>Cirsium brevistylum</i>	Indian thistle	--	UPL
<i>Cirsium quercetorum</i>	Brownie thistle	--	UPL
<i>Chlorogalum pomeridianum</i>	Soap plant	--	UPL

SCIENTIFIC NAME	COMMON NAME	STATUS	WETLAND STATUS¹
<i>Clarkia rubicunda</i>	Ruby chalice clarkia	--	UPL
<i>Convolvulus arvensis</i>	Field bindweed	--	UPL
<i>Cortaderia jubata</i>	Andean pampas grass	--	FACU
<i>Cotoneaster</i> sp.	Cotoneaster	--	UPL
<i>Cyperus eragrostis</i>	Tall cyperus	--	FACW
<i>Danthonia californica</i>	California oatgrass	--	FAC
<i>Daucus pusillus</i>	American wild carrot	--	UPL
<i>Deinandra corymbosa</i>	Coastal tarweed	--	UPL
<i>Dipsacus sativus</i>	Indian teasel	--	UPL
<i>Dudleya farinosa</i>	Sea lettuce	--	UPL
<i>Echium candicans</i>	Pride of madeira	--	UPL
<i>Eleocharis macrostachya</i>	Spike rush	--	OBL
<i>Elymus glaucus</i>	Blue wildrye	--	FACU
<i>Epilobium ciliatum</i>	Slender willow herb	--	FACW
<i>Epilobium densiflorum</i>	Willow herb	--	FACW
<i>Erigeron canadensis</i>	Canada horseweed	--	FACU
<i>Erigeron glaucus</i>	Seaside daisy	--	FACU
<i>Eriogonum latifolium</i>	Coast buckwheat	--	UPL
<i>Eriophyllum staechadifolium</i>	Lizard tail	--	UPL
<i>Erodium cicutarium</i>	Coastal heron's bill	--	UPL
<i>Eucalyptus globulus</i>	Blue gum	--	UPL
<i>Festuca arundinacea</i>	Reed fescue	--	FACU
<i>Festuca bromoides</i>	Brome fescue	--	FACU
<i>Festuca myuros</i>	Rattail fescue	--	FACU
<i>Festuca perennis</i>	Italian ryegrass	--	FAC
<i>Fragaria chiloensis</i>	Beach strawberry	--	FACU
<i>Frangula californica</i>	California coffeeberry	--	UPL
<i>Gastridium phleoides</i>	Nit grass	--	FACU

SCIENTIFIC NAME	COMMON NAME	STATUS	WETLAND STATUS ¹
<i>Geranium dissectum</i>	Wild geranium	--	UPL
<i>Grindelia stricta</i>	Gumweed	--	FACW
<i>Helenium bigelovii</i>	Bigelow's sneezeweed	--	FACW
<i>Heliotropium curassavicum</i> var. <i>oculatum</i>	Seaside heliotrope	--	FACU
<i>Helminthotheca echiodes</i>	Bristly ox-tongue	--	FAC
<i>Hesperervax sparsiflora</i> var. <i>sparsiflora</i>	Few flowered evax	--	FACU
<i>Hesperocyparis macrocarpa</i>	Monterey cypress	--	UPL
<i>Holcus lanatus</i>	Velvetgrass	--	FAC
<i>Hordeum brachyantherum</i>	Meadow barley	--	FACW
<i>Hordeum marinum</i> ssp. <i>gussoneanum</i>	Barley	--	FAC
<i>Hordeum murinum</i>	Foxtail barley	--	FACU
<i>Horkelia californica</i>	California horkelia	--	UPL
<i>Juncus effusus</i> ssp. <i>effusus</i>	Common rush	--	FACW
<i>Juncus mexicanus</i>	Mexican rush	--	FACW
<i>Juncus patens</i>	Westetrn rush	--	FACW
<i>Juncus phaeocephalus</i>	Brown-headed rush	--	FACW
<i>Juncus tenuis</i>	Slender rush	--	FACW
<i>Juncus xiphioides</i>	Iris leaved rush	--	OBL
<i>Lepidium strictum</i>	Peppergrass	--	UPL
<i>Linum bienne</i>	Flax	--	UPL
<i>Logfia gallica</i>	Narrowleaf cottonrose	--	UPL
<i>Lonicera involucrata</i>	Coast twinberry	--	FAC
<i>Lotus corniculatus</i>	Bird's foot trefoil	--	FAC
<i>Lysimachia arvensis</i>	Scarlet pimpernel	--	FAC
<i>Lythrum hyssopifolia</i>	Hyssop loosestrife	--	OBL
<i>Madia sativa</i>	Coastal tarweed	--	UPL

SCIENTIFIC NAME	COMMON NAME	STATUS	WETLAND STATUS¹
<i>Malva nicaeensis</i>	Bull mallow	--	UPL
<i>Matricaria discoidea</i>	Pineapple weed	--	FACU
<i>Medicago polymorpha</i>	California burclover	--	FACU
<i>Mentha pulegium</i>	Pennyroyal	--	OBL
<i>Navarretia squarrosa</i>	Skunkweed	--	FACU
<i>Oxalis pes-caprae</i>	Bermuda buttercup	--	UPL
<i>Parentucellia viscosa</i>	Yellow glandweed	--	FAC
<i>Pentagramma triangularis</i>	Gold back fern	--	UPL
<i>Persicaria punctata</i>	Dotted smartweed	--	OBL
<i>Pinus radiata</i>	Monterey pine	Rank 1B.1	UPL
<i>Plagiobothrys chorisianus</i> var. <i>chorisianus</i>	Choris's popcorn flower	Rank 1B.2	OBL
<i>Plantago coronopus</i>	Cut leaf plantain	--	FAC
<i>Plantago lanceolata</i>	Ribwort	--	FAC
<i>Polypodium californicum</i>	California polypody	--	UPL
<i>Polypogon monspeliensis</i>	Annual beard grass	--	FACW
<i>Pseudognaphalium luteoalbum</i>	Jersey cudweed	--	FAC
<i>Raphanus raphanistrum</i>	Jointed charlock	--	UPL
<i>Raphanus sativus</i>	Wildradish	--	UPL
<i>Rosa</i> sp.	Rose	--	UPL
<i>Rubus armeniacus</i>	Himalayan blackberry	--	FAC
<i>Rubus ursinus</i>	California blackberry	--	FAC
<i>Rumex acetosella</i>	Sheep sorrel	--	FACU
<i>Rumex crispus</i>	Curly dock	--	FAC
<i>Rumex fueginus</i>	Golden dock	--	FACW
<i>Rumex pulcher</i>	Fiddleleaf dock	--	FAC
<i>Salix lasiolepis</i>	Arroyo willow	--	FACW
<i>Sanicula crassicaulis</i>	Pacific sanicle	--	UPL

SCIENTIFIC NAME	COMMON NAME	STATUS	WETLAND STATUS ¹
<i>Scirpus microcarpus</i>	Small-fruited bulrush	--	OBL
<i>Scrophularia californica</i>	California bee plant	--	FAC
<i>Sonchus asper</i> ssp. <i>asper</i>	Sow thistle	--	FAC
<i>Sonchus oleraceus</i>	Sow thistle	--	UPL
<i>Spergularia macrotheca</i>	Sticky sand spurry	--	FAC
<i>Stellaria media</i>	Chickweed	--	FACU
<i>Stipa pulchra</i>	Purple needle grass	--	UPL
<i>Symphyotrichum chilense</i>	Pacific aster	--	FAC
<i>Taraxia ovata</i>	Sun cup	--	UPL
<i>Toxicodendron diversilobum</i>	Poison oak	--	FACU
<i>Trifolium angustifolium</i>	Narrow leaved clover	--	UPL
<i>Trifolium dubium</i>	Shamrock	--	UPL
<i>Trifolium fucatum</i>	Bull clover	--	FACU
<i>Trifolium subterraneum</i>	Subterranean clover	--	UPL
<i>Typha angustifolia</i>	Narrow leaf cattail	--	OBL
<i>Vicia sativa</i>	Spring vetch	--	FACU
<i>Zeltnera muehlenbergii</i>	Muehlenberg's centaury	--	FAC
Birds			
<i>Calypte anna</i>	Anna's hummingbird	--	--
<i>Cathartes aura</i>	turkey vulture	LCP	--
<i>Buteo lineatus</i>	red-shouldered hawk	LCP	--
<i>Buteo jamaicensis</i>	red-tailed hawk	LCP	--
<i>Circus cyaneus</i>	northern harrier	SSC, LCP	--
<i>Elanus leucurus</i>	white-tailed kite	CFP, LCP	--
<i>Colaptes auratus</i>	northern flicker	--	--
<i>Corvus brachyrhynchos</i>	American crow	--	--
<i>Larus occidentalis</i>	western gull	--	--
<i>Poecile rufescens</i>	chestnut-backed chickadee	--	--

SCIENTIFIC NAME	COMMON NAME	STATUS	WETLAND STATUS ¹
<i>Oreothlypis celata</i>	orange-crowned warbler	--	--
<i>Sayornis nigricans</i>	black phoebe	--	--
<i>Columba livia</i>	rock pigeon	--	--
<i>Zenaida macroura</i>	mourning dove	--	--
<i>Carpodacus mexicanus</i>	house finch	--	--
<i>Melospiza crissalis</i>	California towhee	--	--
<i>Passerculus sandwichensis (alaudinus)</i>	savannah sparrow (Bryant's)	SSC (subspecies)	--
<i>Melospiza melodia</i>	song sparrow	--	--
<i>Zonotrichia atricapilla</i>	golden-crowned sparrow	--	--
<i>Zonotrichia leucophrys</i>	white-crowned sparrow	--	--
Reptiles			
<i>Thamnophis elegans terrestris</i>	coast gartersnake	--	--
Amphibians			
<i>Pseudacris sierra</i>	Sierran tree frog (adults and egg masses)	--	--
Mammals			
<i>Lepus californicus</i>	black-tailed jackrabbit	--	--
Invertebrates			
<i>Danaus plexippus</i>	monarch butterfly	SSI (winter roost sites)	--

¹Based on *Arid West*, Lichvar 2014.

*** Key to status codes:**

- CFP California Department of Fish and Wildlife (CDFW) Fully Protected Animal
- LCP City of Half Moon Bay Local Coastal Program Rare, Endangered, or Unique Species
- Rank 1B.1 California Native Plant Society (CNPS) Rank 1B.1: Plants rare, threatened, or endangered in California and elsewhere (seriously threatened in California)
- Rank 1B.2 CNPS Rank 1B.2: Plants rare, threatened, or endangered in California and elsewhere (moderately threatened in California)
- SSC CDFW Species of Special Concern
- SSI CDFW Special Status Invertebrate Species

APPENDIX E

**POTENTIAL FOR SPECIAL-STATUS PLANT AND WILDLIFE SPECIES TO OCCUR IN THE
STUDY AREA**

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Appendix E. Potential for special-status plant and wildlife species to occur in the Study Area. List compiled from the California Department of Fish and Wildlife (CDFW) Natural Diversity Database (CDFW 2016), U.S. Fish and Wildlife Service (USFWS) Species Lists, and California Native Plant Society (CNPS) Electronic Inventory search of the Half Moon Bay, Montara Mountain, and San Gregorio USGS 7.5' quadrangles and a review of other CDFW lists and publications (Shuford and Gardali 2008, Jennings and Hayes 1994, Zeiner et al. 1990).

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Plants				
Blasdale's bent grass <i>Agrostis blasdalei</i>	Rank 1B.2	Coastal bluff scrub, coastal dunes, coastal prairie. Elevation ranges from 0 to 490 feet (0 to 150 meters). Blooms May-Jul.	Moderate Potential. This species has moderate potential to occur on and near coastal bluffs in northern coastal scrub and grassland habitats within the Study Area, not including the Utility Area.	Not Observed. This species was not observed during the April 15 or June 22, 2016 special-status plant species surveys. Project activities are not anticipated to result in impacts to this species, and no further actions are recommended.
Franciscan onion <i>Allium peninsulare</i> var. <i>franciscanum</i>	Rank 1B.2	Cismontane woodland, valley and foothill grassland/clay, volcanic, often serpentine. Elevation ranges from 170 to 980 feet (52 to 300 meters). Blooms (Apr), May-Jun.	Unlikely. The Study Area does not contain volcanic or serpentine clay substrates. Therefore, the Study Area has unlikely potential to support this species.	No further surveys or mitigation measures are recommended.
Bent-flowered fiddleneck <i>Amsinckia lunaris</i>	Rank 1B.2	Coastal bluff scrub, cismontane woodland, valley and foothill grassland. Elevation ranges from 10 to 1640 feet (3 to 500 meters). Blooms Mar-Jun.	Unlikely. This species often occurs on thin, rocky substrates, often serpentine, such substrate is absent from the Study Area. Therefore, the Study Area has unlikely potential to support this species.	No further surveys or mitigation measures are recommended.
Coast rockcress <i>Arabis blepharophylla</i>	Rank 4.3	Broadleaved upland forest, coastal bluff scrub, coastal prairie, coastal scrub/rocky. Elevation ranges from 10 to 3610 feet (3 to 1100 meters). Blooms Feb-May.	Unlikely. The Study Area does not contain suitable habitat such as rocky substrates. Therefore, the Study Area has unlikely potential to support this species.	No further surveys or mitigation measures are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
<p>Montara manzanita <i>Arctostaphylos montaraensis</i></p>	<p>Rank 1B.2</p>	<p>Chaparral (maritime), coastal scrub. Elevation ranges from 260 to 1640 feet (80 to 500 meters). Blooms Jan-Mar.</p>	<p>Unlikely. The Study Area contains suitable habitat such as coastal scrub, but it more typically occurs on hillslopes and ridges, not flat terraces. This species is a woody perennial and was not observed during several site visits in January and February 2016.</p>	<p>No further surveys or mitigation measures are recommended.</p>
<p>Kings Mountain manzanita <i>Arctostaphylos regismontana</i></p>	<p>Rank 1B.2</p>	<p>Broadleaved upland forest, chaparral, north coast coniferous forest/granitic or sandstone. Elevation ranges from 1000 to 2400 feet (305 to 730 meters). Blooms Jan-Apr.</p>	<p>Unlikely. The Study Area does not contain suitable habitat such as broadleaved upland forest, chaparral, north coast coniferous forest or thin, granitic or sandstone substrate. Additionally, this species is a woody perennial and was not observed during several site visits in January and February 2016.</p>	<p>No further surveys or mitigation measures are recommended.</p>
<p>Ocean bluff milk-vetch <i>Astragalus nuttallii</i> var. <i>nuttallii</i></p>	<p>Rank 4.2</p>	<p>Coastal bluff scrub, coastal dunes. Elevation ranges from 10 to 390 feet (3 to 120 meters). Blooms Jan-Nov.</p>	<p>Moderate. The Study Area, not including the Utility Area, contains coastal habitats that may be considered suitable for this species such as coastal dunes and scrub. The nearest documented occurrence is located 6.63 miles from the Study Area in San Gregorio and is from 2007 and presumed extant at that location.</p>	<p>Not Observed. This species was not observed during the April 15 or June 22, 2016 special-status plant species surveys. Project activities are not anticipated to result in impacts to this species, and no further actions are recommended.</p>

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Coastal marsh milk-vetch <i>Astragalus pycnostachyus</i> var. <i>pycnostachyus</i>	Rank 1B.2	Coastal dunes (mesic), coastal scrub, marshes and swamps (coastal salt, streamside's). Elevation ranges from 0 to 100 feet (0 to 30 meters). Blooms Apr-Oct.	Moderate. The Study Area, not including the Utility Area, contains coastal habitats that may be considered suitable for this species, such as coastal dunes and scrub. The nearest documented occurrence is located 5 miles from the Study Area at Pillar Point and was recorded in 1902 but is presumed extant at that location.	Not Observed. This species was not observed during the April 15 or June 22, 2016 special-status plant species surveys. Project activities are not anticipated to result in impacts to this species, and no further actions are recommended.
Johnny-nip <i>Castilleja ambigua</i> var. <i>ambigua</i>	Rank 4.2	Coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, valley and foothill grassland, vernal pools margins. Elevation ranges from 0 to 1430 feet (0 to 435 meters). Blooms Mar-Aug.	Moderate. The Study Area, not including the Utility Area, contains suitable habitat such as coastal scrub near coastal bluffs.	Not Observed. This species was not observed during the April 15 or June 22, 2016 special-status plant species surveys. Project activities are not anticipated to result in impacts to this species, and no further actions are recommended.
Pappose tarplant <i>Centromadia parryi</i> ssp. <i>parryi</i>	Rank 1B.2	Chaparral, coastal prairie, meadows and seeps, marshes and swamps (coastal salt), valley and foothill grassland (vernally mesic)/often alkaline. Elevation ranges from 0 to 1380 feet (0 to 420 meters). Blooms May-Nov.	Unlikely. The Study Area does not contain suitable habitat such as chaparral, coastal prairie, meadows and seeps, and marshes and swamps. This species often occurs in alkaline substrate, which is absent from the Study Area. Therefore, the Study Area has unlikely potential to support this species.	No further surveys or mitigation measures are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
San Francisco Bay spineflower <i>Chorizanthe cuspidata</i> var. <i>cuspidata</i>	Rank 1B.2	Coastal bluff scrub, coastal dunes, coastal prairie, coastal scrub/sandy. Elevation ranges from 10 to 710 feet (3 to 215 meters). Blooms Apr-Jul (Aug).	Moderate. The Study Area, not including the Utility Area, contains suitable habitat such as sandy coastal scrub and coastal dunes. However, the nearest documented occurrence of this species is greater than 5 miles from the Study Area and is presumed extant at that location.	Not Observed. This species was not observed during the April 15 or June 22, 2016 special-status plant species surveys. Project activities are not anticipated to result in impacts to this species, and no further actions are recommended.
Franciscan thistle <i>Cirsium andrewsii</i>	Rank 1B.2	Broadleaved upland forest, coastal bluff scrub, coastal prairie, coastal scrub/mesic, sometimes serpentine. Elevation ranges from 0 to 490 feet (0 to 150 meters). Blooms Mar-Jul.	Unlikely. The Study Area does not contain suitable habitat such as serpentine substrates and the nearest documented occurrence of this species is greater than 5 miles from the Study Area. Therefore, the Study Area has unlikely potential to support this species.	No further surveys or mitigation measures are recommended.
San Francisco collinsia <i>Collinsia multicolor</i>	Rank 1B.2	Closed-cone coniferous forest, coastal scrub/sometimes serpentine. Elevation ranges from 100 to 820 feet (30 to 250 meters). Blooms (Feb), Mar-May.	Unlikely. The Study Area does not contain serpentine or shale substrates. Additionally, the nearest documented occurrence of this species is greater than 5 miles from the Study Area. Therefore, the Study Area has unlikely potential to support this species.	No further surveys or mitigation measures are recommended.
Clustered lady's-slipper <i>Cypripedium fasciculatum</i>	Rank 4.2	Lower montane coniferous forest, north coast coniferous forest/usually serpentine seeps, and streambanks. Elevation ranges from 330 to 7990 feet (100 to 2435 meters). Blooms Mar-Aug.	Unlikely. The Study Area does not contain suitable habitat such as lower montane coniferous forest, north coast coniferous forest and does not contain serpentine seeps. Therefore, the Study Area has unlikely potential to support this species.	No further surveys or mitigation measures are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Western leatherwood <i>Dirca occidentalis</i>	Rank 1B.2	Broadleaved upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, north coast coniferous forest, riparian forest, riparian woodland/mesic. Elevation ranges from 80 to 1390 feet (25 to 425 meters). Blooms Jan-Mar (Apr).	Unlikely. The Study Area does not contain suitable chaparral, north coast coniferous forest, or riparian forest. Broadleaved forest (eucalyptus) and closed cone coniferous forest (Monterey cypress) within the Study Area are planted or are spreading from the planted trees and are not native habitat. Therefore, the Study Area has unlikely potential to support this species.	No further surveys or mitigation measures are recommended.
California bottle-brush grass <i>Elymus californicus</i>	Rank 4.3	Broadleaved upland forest, cismontane woodland, north coast coniferous forest, riparian woodland. Elevation ranges from 50 to 1540 feet (15 to 470 meters). Blooms May-Aug (Nov).	Unlikely. The Study Area does not contain riparian woodland or north coast coniferous forest. Forested areas within the Study Area are planted or are spreading from plantings and are not native habitat. Therefore, the Study Area has unlikely potential to support this species.	No further surveys or mitigation measures are recommended.
San Mateo woolly sunflower <i>Eriophyllum latilobum</i>	FE, SE, Rank 1B.1	Cismontane woodland (often serpentine, on road cuts). Elevation ranges from 150 to 490 feet (45 to 150 meters). Blooms May-Jun.	Unlikely. This species is known from oak woodland, often on serpentine substrate, and such habitat is absent from the Study Area. Forested areas within the Study Area are planted or are spreading from plantings and are not native habitat. Therefore, the Study Area has unlikely potential to support this species.	No further surveys or mitigation measures are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
San Francisco wallflower <i>Erysimum franciscanum</i>	Rank 4.2	Chaparral, coastal dunes, coastal scrub, valley and foothill grassland/often serpentine or granitic, sometimes roadsides. Elevation ranges from 0 to 1800 feet (0 to 550 meters). Blooms Mar-Jun.	Unlikely. This species typically known from dune scrub or from rocky slopes, often on granitic or serpentine substrate, and such habitat is absent from the Study Area. Therefore, the Study Area has unlikely potential to support this species.	No further surveys or mitigation measures are recommended.
Hillsborough chocolate lily <i>Fritillaria biflora</i> var. <i>ineziana</i>	Rank 1B.1	Cismontane woodland, valley and foothill grassland/serpentine. Elevation ranges from 490 to 490 feet (150 to 150 meters). Blooms Mar-Apr.	No Potential. The Study Area does not contain serpentine substrate.	No further surveys or mitigation measures are recommended.
Marin checker lily <i>Fritillaria lanceolata</i> var. <i>tristulis</i>	Rank 1B.1	Coastal bluff scrub, coastal prairie, coastal scrub. Elevation ranges from 50 to 490 feet (15 to 150 meters). Blooms Feb-May.	Unlikely. While the Study Area contains coastal habitats that may be considered suitable for the species, the nearest documented occurrence is from 1963 and is located 32.9 miles from the Study Area in Stinson Beach. Therefore, the Study Area has unlikely potential to support this species.	No further surveys or mitigation measures are recommended.
Fragrant fritillary <i>Fritillaria liliacea</i>	Rank 1B.2	Cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland/often serpentine. Elevation ranges from 10 to 1350 feet (3 to 410 meters). Blooms Feb-Apr.	Unlikely. The Study Area does not contain serpentine or heavy clay substrates. Therefore, the Study Area has unlikely potential to support this species.	No further surveys or mitigation measures are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
San Francisco gumplant <i>Grindelia hirsutula</i> var. <i>maritima</i>	Rank 3.2	Coastal bluff scrub, coastal scrub, valley and foothill grassland/sandy or serpentine. Elevation ranges from 50 to 1310 feet (15 to 400 meters). Blooms Jun-Sep.	Moderate. The Study Area, not including the Utility Area, contains suitable coastal habitats to support this species. The nearest documented occurrence is over 7 miles north of the Study Area from 1985 and is presumed extant.	Not Observed. This species was not observed during the April 15 or June 22, 2016 special-status plant species surveys. Project activities are not anticipated to result in impacts to this species, and no further actions are recommended.
Short-leaved evax <i>Hesperevax sparsiflora</i> var. <i>brevifolia</i>	Rank 1B.2	Coastal bluff scrub (sandy), coastal dunes, coastal prairie. Elevation ranges from 0 to 710 feet (0 to 215 meters). Blooms Mar-Jun.	Moderate. While the Study Area, not including the Utility Area, contains sandy coastal scrub habitat that may be suitable to support this species, the nearest documented occurrence is from 1970 and is located over 7 miles northeast from the Study Area, and has never been verified at this location.	Not Observed. This species was not observed during the April 15 or June 22, 2016 special-status plant species surveys. Project activities are not anticipated to result in impacts to this species, and no further actions are recommended.
Kellogg's horkelia <i>Horkelia cuneata</i> var. <i>sericea</i>	Rank 1B.1	Closed-cone coniferous forest, chaparral (maritime), coastal dunes, coastal scrub/sandy or gravelly, openings. Elevation ranges from 30 to 660 feet (10 to 200 meters). Blooms Apr-Sep.	Moderate. The Study Area, not including the Utility Area, contains suitable habitat such as coastal scrub. The nearest documented occurrence is from 2000 and was mapped 3 miles northeast of the Study Area on a ridgetop in Half Moon Bay and is presumed extant at that location.	Not Observed. This species was not observed during the April 15 or June 22, 2016 special-status plant species surveys. Project activities are not anticipated to result in impacts to this species, and no further actions are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Point Reyes horkelia <i>Horkelia marinensis</i>	Rank 1B.2	Coastal dunes, coastal prairie, coastal scrub/sandy. Elevation ranges from 20 to 2480 feet (5 to 755 meters). Blooms May-Sep.	Moderate. The Study Area, not including the Utility Area, contains suitable habitat such as coastal scrub. The nearest documented occurrence is from 1962 and is located approximately 11.5 miles from the Study Area in Junipero Serra Park and is presumed extant at that location.	Not Observed. This species was not observed during the April 15 or June 22, 2016 special-status plant species surveys. Project activities are not anticipated to result in impacts to this species, and no further actions are recommended.
island rock lichen <i>Hypogymnia schizidiata</i>	Rank 1B.3	Closed-cone coniferous forest, chaparral. Elevation ranges from 1180 to 1330 feet (360 to 405 meters).	Unlikely. The Study Area does not contain closed-cone coniferous forest (Monterey cypress stands are historically planted or are volunteers from the planted trees and are not native habitat) or chaparral habitats. All occurrences in the vicinity of the Study Area occur in maritime chaparral habitat (CDFW 2020). Therefore, the Study Area has unlikely potential to support this species.	No further surveys or mitigation measures are recommended.
Coast iris <i>Iris longipetala</i>	Rank 4.2	Coastal prairie, lower montane coniferous forest, meadows and seeps/mesic. Elevation ranges from 0 to 1970 feet (0 to 600 meters). Blooms Mar-May.	Unlikely. The Study Area does not contain suitable habitat such as lower montane coniferous forest, meadows and seeps, and coastal prairie or heavy soils. Therefore, the Study Area has unlikely potential to support this species.	No further surveys or mitigation measures are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Perennial goldfields <i>Lasthenia californica</i> ssp. <i>macrantha</i>	Rank 1B.2	Coastal bluff scrub, coastal dunes, coastal scrub. Elevation ranges from 20 to 1710 feet (5 to 520 meters). Blooms Jan-Nov.	Moderate. The Study Area, not including the Utility Area, contains suitable habitat such as coastal scrub. The nearest documented occurrence from 1921 is located 12.5 miles from the Study Area at Pescadero State Beach is presumed extant.	Not Observed. This species was not observed during the April 15 or June 22, 2016 special-status plant species surveys. Project activities are not anticipated to result in impacts to this species, and no further actions are recommended.
Coast yellow leptosiphon <i>Leptosiphon croceus</i>	SC, Rank 1B.1	Coastal bluff scrub, coastal prairie. Elevation ranges from 30 to 490 feet (10 to 150 meters). Blooms Apr-Jun.	Moderate. The Study Area, not including the Utility Area, contains suitable habitat such as coastal scrub. However, the nearest documented occurrence is from 2015 and is located 10.8 miles from the Study Area in Moss Beach.	Not Observed. This species was not observed during the April 15 or June 22, 2016 special-status plant species surveys. Project activities are not anticipated to result in impacts to this species, and no further actions are recommended.
Rose leptosiphon <i>Leptosiphon rosaceus</i>	Rank 1B.1	Coastal bluff scrub. Elevation ranges from 0 to 330 feet (0 to 100 meters). Blooms Apr-Jul.	Unlikely. The Study Area does not contain coastal bluff scrub and is therefore unlikely to support this species.	No further surveys or mitigation measures are recommended.
Crystal Springs lessingia <i>Lessingia arachnoidea</i>	Rank 1B.2	Cismontane woodland, coastal scrub, valley and foothill grassland/serpentine, often roadsides. Elevation ranges from 200 to 660 feet (60 to 200 meters). Blooms Jul-Oct.	No Potential. The Study Area does not contain serpentine substrate.	No further surveys or mitigation measures are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Woolly-headed lessingia <i>Lessingia hololeuca</i>	Rank 3	Broadleaved upland forests, coastal scrub, lower montane coniferous forest, valley and foothill grassland/clay, serpentine. Elevation ranges from 50 to 1000 feet (15 to 305 meters). Blooms Jun-Oct.	Unlikely. While the Study Area contains coastal scrub, this species is more typical of undisturbed native grassland and serpentine soils. All proximate documented occurrences are associated with higher elevation areas over 5 miles east of the Study Area. Therefore, the Study Area has unlikely potential to support this species.	No further surveys or mitigation measures are recommended.
Ornduff's meadowfoam <i>Limnanthes douglasii</i> ssp. <i>ornduffii</i>	Rank 1B.1	Meadows and seeps/agricultural fields. Elevation ranges from 30 to 70 feet (10 to 20 meters). Blooms Nov-May.	Unlikely. The Study Area does not contain suitable habitat such as meadows and seeps/ agricultural fields. Therefore, the Study Area has unlikely potential to support this species.	No further surveys or mitigation measures are recommended.
San Mateo tree lupine <i>Lupinus arboreus</i> var. <i>eximius</i>	Rank 3.2	Chaparral, coastal scrub. Elevation ranges from 300 to 1800 feet (90 to 550 meters). Blooms Apr-Jul.	Moderate. The Study Area, not including the Utility Area, contains coastal scrub habitat and sandy soils that may be suitable for this species. There limited occurrence information for this species.	Not Observed. This species was not observed during the April 15 or June 22, 2016 special-status plant species surveys. Project activities are not anticipated to result in impacts to this species, and no further actions are recommended.
Indian Valley bush-mallow <i>Malacothamnus aboriginum</i>	Rank 1B.2	Chaparral, cismontane woodland/rocky, granitic, often in burned areas. Elevation ranges from 490 to 5580 feet (150 to 1700 meters). Blooms Apr-Oct.	No Potential. The Study Area does not contain rocky, granitic substrates, or burned areas. Therefore, the Study Area has unlikely potential to support this species.	No further surveys or mitigation measures are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Arcuate bush-mallow <i>Malacothamnus arcuatus</i>	Rank 1B.2	Chaparral, cismontane woodland. Elevation ranges from 50 to 1160 feet (15 to 355 meters). Blooms Apr-Sep.	Unlikely. The Study Area does not contain chaparral habitat. Forested areas within the Study Area are planted or are spreading from plantings and are not native habitat. Therefore, the Study Area has unlikely potential to support this species.	No further surveys or mitigation measures are recommended.
Davidson's bush-mallow <i>Malacothamnus davidsonii</i>	Rank 1B.2	Chaparral, cismontane woodland, coastal scrub, riparian woodland. Elevation ranges from 610 to 2810 feet (185 to 855 meters). Blooms Jun-Jan.	Moderate. The Study Area, not including the Utility Area, contains suitable habitat such as sandy coastal scrub. The nearest documented occurrence is from Crystal Spring Reservoir from 1912.	Not Observed. This species was not observed during the April 15 or June 22, 2016 special-status plant species surveys. Project activities are not anticipated to result in impacts to this species, and no further actions are recommended.
Hall's bush-mallow <i>Malacothamnus hallii</i>	Rank 1B.2	Chaparral, coastal scrub. Elevation ranges from 30 to 2490 feet (10 to 760 meters). Blooms May-Sep (Oct).	Unlikely. The Study Area contains suitable habitat such as coastal scrub. However, the nearest documented occurrence is from 1993 and is located 29.8 miles from the Study Area in San Jose and is possibly extirpated. Therefore, the Study Area has unlikely potential to support this species.	No further surveys or mitigation measures are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Marsh microseris <i>Microseris paludosa</i>	Rank 1B.2	Closed-cone coniferous forest, cismontane woodland, coastal scrub, valley and foothill grassland. Elevation ranges from 20 to 1160 feet (5 to 355 meters). Blooms Apr-Jun (Jul).	Moderate. The Study Area, not including the Utility Area, contains suitable habitat such as coastal scrub. The nearest documented occurrence is from 2004 and is located 14 miles from the Study Area in Pescadero State Beach.	Not Observed. This species was not observed during the April 15 or June 22, 2016 special-status plant species surveys. Project activities are not anticipated to result in impacts to this species, and no further actions are recommended.
Woodland woollythreads <i>Monolopia gracilens</i>	Rank 1B.2	Broadleaved upland forest (openings), chaparral (openings), cismontane woodland, north coast coniferous forest (openings), valley and foothill grassland/serpentine. Elevation ranges from 330 to 3940 feet (100 to 1200 meters). Blooms (Feb), Mar-Jul.	Unlikely. This species often occurs on thin soils on serpentine substrate, and such substrate is absent from the Study Area. Therefore, the Study Area has unlikely potential to support this species.	No further surveys or mitigation measures are recommended.
White-rayed pentachaeta <i>Pentachaeta bellidiflora</i>	FE, SE, Rank 1B.1	Cismontane woodland, valley and foothill grassland (often serpentine). Elevation ranges from 110 to 2030 feet (35 to 620 meters). Blooms Mar-May.	Unlikely. This species typically occurs on serpentine substrate, often on dry, rocky slopes, and such habitat is absent from the Study Area. Therefore, the Study Area has unlikely potential to support this species.	No further surveys or mitigation measures are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
<p>Choris' popcorn flower <i>Plagiobothrys chorisianus</i> var. <i>chorisianus</i></p>	<p>Rank 1B.2</p>	<p>Chaparral, coastal prairie, coastal scrub/mesic. Elevation ranges from 50 to 520 feet (15 to 160 meters). Blooms Mar-Jun.</p>	<p>Present. Choris' popcornflower was observed during a protocol-level special-status plant survey within the Study Area, not including the Utility Area, on April 15, 2016. It was observed in northern coastal scrub, coyote brush/western rush scrub, seasonal wetland, and coastal wetland habitats. Based on 2016 survey estimates, the Study Area, not including the Utility Area, contains approximately 43,000 individuals of Choris' popcorn flower within 7.5 acres.</p> <p>In addition, Choris' popcorn flower has high potential to occur in seasonal wetland habitat within the Utility Area.</p>	<p>Observed. Approximately 7.5 acres or 43,000 individual plants were observed throughout the Study Area. Project activities will result in impacts to approximately 0.37 acre or 2,400 individual plants. Measures to mitigate for these potential impacts include seed collection prior to Project construction to revegetate decommissioned trails. See Section 5.2 for details.</p>
<p>Oregon polemonium <i>Polemonium carneum</i></p>	<p>Rank 2B.2</p>	<p>Coastal prairie, coastal scrub, lower montane coniferous forest. Elevation ranges from 0 to 6000 feet (0 to 1830 meters). Blooms Apr-Sep.</p>	<p>Moderate. The Study Area, not including the Utility Area, contains suitable habitat such as coastal scrub. The nearest documented occurrence is from 1916 and is located 7.23 miles from the Study Area in Pilarcitos Dam and is presumed extant at that location.</p>	<p>Not Observed. This species was not observed during the April 15 or June 22, 2016 special-status plant species surveys. Project activities are not anticipated to result in impacts to this species, and no further actions are recommended.</p>

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Hickman's cinquefoil <i>Potentilla hickmanii</i>	FE, SE, Rank 1B.1	Coastal bluff scrub, closed-cone coniferous forest, meadows and seeps (vernally mesic), marshes and swamps (freshwater). Elevation ranges from 30 to 490 feet (10 to 149 meters). Blooms Apr-Aug.	Moderate. The Study Area, not including the Utility Area, contains suitable coastal bluff habitat by sea cliffs. The nearest documented occurrence of this species is from 2008 over 7.8 miles north from the Study Area at Moss Beach.	Not Observed. This species was not observed during the April 15 or June 22, 2016 special-status plant species surveys. Project activities are not anticipated to result in impacts to this species, and no further actions are recommended.
Scouler's catchfly <i>Silene scouleri</i> ssp. <i>scouleri</i>	Rank 2B.2	Coastal bluff scrub, coastal prairie, valley and foothill grassland. Elevation ranges from 0 to 1970 feet (0 to 600 meters). Blooms (Mar-May)Jun-Aug(Sep).	Unlikely. This species is known in San Mateo County from thin, rocky soils, and such substrate is absent from the Study Area.	No further surveys or mitigation measures are recommended.
San Francisco campion <i>Silene verecunda</i> ssp. <i>verecunda</i>	Rank 1B.2	Coastal bluff scrub, chaparral, coastal prairie, coastal scrub, valley and foothill grassland/sandy. Elevation ranges from 100 to 2120 feet (30 to 645 meters). Blooms (Feb), Mar-Jun (Aug).	Moderate. Suitable coastal scrub habitat is present within the Study Area, not including the Utility Area. The nearest documented occurrence is from 1994 and is located 6.6 miles from the Study Area on Montara Mountain and is presumed extant at that location.	Not Observed. This species was not observed during the April 15 or June 22, 2016 special-status plant species surveys. Project activities are not anticipated to result in impacts to this species, and no further actions are recommended.
San Francisco owl's-clover <i>Triphysaria floribunda</i>	Rank 1B.2	Coastal prairie, coastal scrub, valley and foothill grassland/usually serpentine. Elevation ranges from 30 to 520 feet (10 to 160 meters). Blooms Apr-Jun.	Unlikely. In the vicinity of the Study Area, this species is known from serpentine substrate, which is absent from the Study Area. Therefore, the Study Area has unlikely potential to support this species.	No further surveys or mitigation measures are recommended.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Coastal triquetrella <i>Triquetrella californica</i>	Rank 1B.2	Coastal bluff scrub, coastal scrub/soil. Elevation ranges from 30 to 330 feet (10 to 100 meters).	Unlikely. This species occurs on thin, often gravelly soils with little competition from other herbs in openings in coastal scrub, and such habitat is absent from the Study Area.	No further surveys or mitigation measures are recommended.
Mammals				
fringed myotis <i>Myotis thysanodes</i>	WBWG	Associated with a wide variety of habitats including mixed coniferous-deciduous forest and redwood/sequoia groves. Buildings, mines and large snags are important day and night roosts.	Unlikely. The Monterey cypress in the northern and southern portions of the Study Area do not contain snags or analogous cavities capable of providing roosting habitat for this species. Fringed myotis may occasionally forage over the Study Area.	No further actions are recommended for this species.
big free-tailed bat <i>Nyctinomops macrotis</i>	SSC, WBWG	Occurs rarely in low-lying arid areas. Requires high cliffs or rocky outcrops for roosting sites.	No Potential. The Study Area does not contain any high cliffs or rock outcroppings suitable for roosting. This species may migrate over the Study Area.	No further actions are recommended for this species
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	SC, SSC, WBWG	Primarily found in rural settings in a wide variety of habitats including oak woodlands and mixed coniferous-deciduous forest. Day roosts highly associated with caves and mines. Building roost sites must be cave like. Very sensitive to human disturbance.	Unlikely. The Monterey cypress in the Study Area do not contain snags or analogous cavities capable of providing roosting habitat for this species. This species may occasionally forage over the Study Area.	No further actions are recommended for this species

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
pallid bat <i>Antrozous pallidus</i>	SSC, WBWG	Occupies a variety of habitats at low elevation including grasslands, shrublands, woodlands, and forests. Roost sites include crevices in rocky outcrops and cliffs, caves, mines, trees and various human structures such as bridges, barns, and buildings (including occupied buildings). Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	Unlikely. The Monterey cypress in the Study Area do not contain snags or analogous cavities capable of providing roosting habitat for this species. No buildings or rocky outcrops are present. This species may occasionally forage over the Study Area.	No further actions are recommended for this species.
western red bat <i>Lasiurus blossevillii</i>	SSC, WBWG	This species is highly migratory and is typically solitary, roosting primarily in the foliage of trees or shrubs. It is associated with broad-leaved tree species including cottonwoods, sycamores, alders, and maples. Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas.	Moderate Potential. The Study Area does not contain broad-leaved riparian trees typical of roosting sites for western red bat. The dense willows in the riparian habitat are unlikely to be used for roosting by this species; however, the Monterey cypress may be used for roosting by this species. This species may occasionally forage or migrate over the Study Area.	Avoidance of Monterey cypress stands, work windows, or pre-construction surveys.
hoary bat <i>Lasiurus cinereus</i>	WBWG Medium	Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.	Moderate Potential. The Monterey Cypress stands and willows in the riparian habitat may provide suitable roosting habitat for the species. This species may occasionally forage or migrate over the Study Area.	Avoidance of Monterey cypress stands and riparian habitat, work windows, or pre-construction surveys.
saltmarsh harvest mouse <i>Reithrodontomys raviventris</i>	FE, SE, CFP	Occurs in pickleweed habitats in tidal, muted-tidal, and diked areas.	No Potential. The Study Area does not contain saltmarsh habitat and is outside the range for this species.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
San Francisco dusky-footed woodrat <i>Neotoma fuscipes annectens</i>	SSC	Typically occurs in forest habitats of moderate canopy and moderate to dense understory. Also found in chaparral habitats. Feeds mainly on woody plants, such as live oak, maple, coffeeberry, alder, and elderberry.	Moderate Potential. The riparian habitat is suitable for this species. The Monterey cypress is unlikely to support this species because it lacks understory. Eucalyptus groves along Redondo Beach Road may provide sufficient litter and understory for the construction of houses. No houses were observed during the January 14, 2020 site visit.	Avoidance of willow-riparian habitat or pre-construction surveys in riparian habitat and areas with dense understory/building materials. See Section 5.0 for a description of avoidance and minimization measures.
American badger <i>Taxidea taxus</i>	SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable, uncultivated soils. Prey on burrowing rodents.	Unlikely. Urban development and habitat fragmentation have extirpated badger from the northern San Francisco Peninsula (CDFW 2016). The Study Area also lacks suitable dry habitat and receives a high level of disturbance from humans and off-leash pets.	No further actions are recommended for this species.
Guadalupe fur seal <i>Arctocephalus townsendi</i>	FT, ST, CFP, LCP	Breed on Isla de Guadalupe off the coast of Mexico, occasionally found on San Miguel, San Nicolas, and San Clemente islands. Prefers shallow, nearshore island water with cool and sheltered rocky areas for haul-outs.	No Potential. The Study Area does not contain shore or ocean habitat.	No further actions are recommended for this species.
southern sea otter <i>Enhydra lutris nereis</i>	FT, CFP, MMC, SSC, LCP	Nearshore marine environments from about Año Nuevo, San Mateo County. To Point Sal, Santa Barbara County. Needs canopies of giant kelp and bull kelp for rafting and feeding. Prefers rocky substrates with abundant invertebrates.	No Potential. The Study Area does not contain shore or ocean habitat.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Birds				
California brown pelican <i>Pelecanus occidentalis californicus</i>	FD, SD, CFP, LCP	Nests colonially on coastal islands of small to moderate size which afford immunity from attack by ground-dwelling predators. Does not breed north of the Channel Islands. Winter visitor and post-breeding disperser to San Francisco Bay region.	Unlikely. Does not breed in the region, but may roost in or be observed flying over areas adjacent to the Study Area.	No further actions are recommended for this species.
white-tailed kite <i>Elanus leucurus</i>	CFP, LCP	Year-long resident of coastal and valley lowlands. Preys on small diurnal mammals and occasional birds, insects, reptiles, and amphibians.	Moderate Potential. Much of the Study Area is open grassland which is the preferred foraging habitat for the species. The Monterey cypress and tall shrubs in the Study Area are suitable for nesting. Additionally, this species was observed foraging in the Study Area during the January 27, 2016 and January 14, 2020 site visits.	Work windows or pre-construction nesting bird survey within 14 days of initiation of Project activities.
northern harrier <i>Circus cyaneus</i>	SSC, LCP	Coastal salt and freshwater marsh. Nest and forage in grasslands, from salt grass in desert sink to mountain cienagas. Nests on ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas.	Unlikely. A majority of the Study Area does not contain grassland of suitable height for nesting by this species, and there is a high level of disturbance from humans and off-leash pets which reduce the potential for nesting by this species in the Study Area. This species likely nests in nearby habitats, and this species was observed foraging in the Study Area on the January 27, 2016 and January 14, 2020 site visits.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
golden eagle <i>Aquila chrysaetos</i>	CFP, BGEPA, LCP	Year-round resident in rolling foothills with open grasslands, scattered trees, and cliff-walled canyons.	Unlikely. The Study Area lacks suitable nesting sites for this species but this species may be observed foraging over the grassland habitat.	No further actions are recommended for this species.
bald eagle <i>Haliaeetus leucocephalus</i>	FD, SE, CFP, BGEPA, LCP	Frequents ocean shores, lake margins, and rivers for both nesting and wintering. Requires abundant fish and adjacent snags or other perches. Nests in large, old-growth, or dominant live tree with open branch-work. Shows a preference for ponderosa pine. Roosts communally in winter.	Unlikely. The Monterey cypress trees in the Study Area are not suitable nest sites for bald eagles, and no foraging habitat is present. This species may on rare occasion fly over the Study Area.	No further actions are recommended for this species.
peregrine falcon <i>Falco peregrinus</i>	FD, SD, CFP, LCP	Resident and winter visitor to region. Occurs near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures. Nest consists of a scrape on a depression or ledge in an open site.	Unlikely. The Study Area lacks cliffs, banks or tall buildings suitable of supporting nesting peregrines, and no foraging habitat is present. This species may occasionally fly over the Study Area.	No further actions are recommended for this species.
California Ridgway's (clapper) rail <i>Rallus obsoletus</i> <i>[longirostris] obsoletus</i>	FE, SE, CFP	Associated with tidal salt marsh and brackish marshes supporting emergent vegetation, upland refugia, and incised tidal channels.	No Potential. There is no salt marsh habitat in the Study Area, and is outside the documented range of this species.	No further actions are recommended for this species.
California black rail <i>Laterallus jamaicensis coturniculus</i>	ST, CFP, LCP	Occurs in tidal salt marsh with dense stands of pickleweed as well as freshwater to brackish marshes.	No Potential. There is no marsh habitat in the Study Area. The Study Area is outside the documented range of this species.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
western snowy plover <i>Charadrius nivosus (alexandrinus) nivosus</i>	FT, SSC,	Federal listing applies only to the Pacific coastal population. Found on sandy beaches, salt pond levees, and shores of large alkali lakes. Requires sandy, gravelly, or friable soils for nesting.	No Potential. The Study Area does not contain suitable beaches, salt ponds, or alkali flats capable of supporting this species. The adjacent beach habitat is not known to support nesting by this species.	No further actions are recommended for this species.
California least tern <i>Sterna antillarum browni</i>	FE, SE, CFP, LCP	Nests along the coast from San Francisco bay south to northern Baja California. Colonial breeder on bare or sparsely vegetated, flat substrates: sand beaches, alkali flats, landfills, or paved areas.	No Potential. The Study Area does not contain suitable beaches, salt ponds, or alkali flats. Additionally the Study Area is outside the documented nesting range of this species.	No further actions are recommended for this species.
short-tailed albatross <i>Diomedea albatrus</i>	FE	Nests on Japanese islands. Very rare winter visitor to offshore California waters.	No Potential. This Study Area is not located within the known breeding range of this species and is inset from the coast where they primarily forage.	No further actions are recommended for this species.
Xantu's murrelet <i>Synthliboramphus hypoleucus</i>	SSC	Generally rare post-breeding disperser to the region. Pelagic, breeding on offshore islands in rock crevices or under bushes. Does not breed north of the Channel Islands.	No Potential. This Study Area is not located within the known breeding range of this species and is inset from the coast where they primarily forage.	No further actions are recommended for this species.
Cassin's auklet <i>Ptychoramphus aleuticus</i>	SSC	Pelagic species, nesting colonially in burrows on coastal and offshore islands.	No Potential. This Study Area is not located within the known breeding range of this species and is inset from the coast where they primarily forage.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
marbled murrelet <i>Brachyramphus marmoratus</i>	FT, SE	Breed in old-growth redwood stands containing platform-like branches along the coast. Winters in coastal waters.	Unlikely. This Study Area does not contain old-growth redwood or fir habitats capable of providing nesting for marbled murrelets. Foraging occurs off-shore, though this species may fly-over the Study Area during daily commute between foraging and nesting grounds.	No further actions are recommended for this species.
burrowing owl <i>Athene cunicularia</i>	SSC, LCP	Year-round resident and winter visitor. Occurs in open, dry grasslands and scrub habitats with low-growing vegetation, perches and abundant mammal burrows. Preys upon insects and small vertebrates. Nests and roosts in old mammal burrows, most commonly those of ground squirrels.	Unlikely. The Study Area does not contain suitable burrow habitat and no ground squirrels or ground squirrel burrows were observed on the January 27 site visit. Burrowing owls are not known to breed in coastal San Mateo County (Shuford and Gardali 2008), but may winter where suitable burrows exist.	No further actions are recommended for this species.
short-eared owl <i>Asio flammeus</i>	SSC, LCP	Resident and mostly winter visitor to the region. Found in swamp lands, both fresh and salt; lowland meadows; irrigated alfalfa fields. Tule patches/tall grass needed for nesting/daytime seclusion. Nests on dry ground in depression concealed in vegetation.	No Potential. Short-eared owls are not known to breed in coastal San Mateo County (Shuford and Gardali 2008). Grasslands within the Study Area do not provide vegetation tall enough for nesting sites or cover from predators and the Study Area receives a high level of disturbance from humans and off-leash pets.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
olive-sided flycatcher <i>Contopus cooperi</i>	SSC	Summer resident. Typical breeding habitat is montane coniferous forests. At lower elevations, also occurs in wooded canyons and mixed forests and woodlands. Often associated with forest edges. Arboreal nest sites located well off the ground.	Moderate Potential. This species does not typically nest in such close proximity to the coast; however, the Monterey cypress in the Study Area provide suitable nesting habitat for olive-sided flycatchers.	Avoidance of Monterey cypress woodlands, work windows, or pre-construction nesting bird survey within 14 days of initiation of Project activities.
little willow flycatcher <i>Empidonax traillii brewsteri</i>	SE	Summer resident in the Sierra Nevada and Cascades, breeding in extensive thickets of low, dense willows adjacent to wet meadows, ponds, or backwaters at 2,000 to 8,000 feet elevation. Current breeding population small and declining.	Unlikely. The Study Area is outside of the known breeding range of this species. This species may be observed during migration.	No further actions are recommended for this species.
purple martin <i>Progne subis</i>	SSC	Inhabits woodlands and low elevation coniferous forests. Nests in old woodpecker cavities and human-made structures. Nest is often located in tall, isolated tree or snag.	Unlikely. The Monterey cypress in the Study Area provide insufficient cavities to support breeding purple martins. Breeding in San Mateo County is localized to mid-elevation coastal woodlands. This species may occasionally be seen within the Study Area during migration or as pre and post-breeding dispersers.	No further actions are recommended for this species.
bank swallow <i>Riparia riparia</i>	ST	Migrant in riparian and other lowland habitats in western California. Colonial nester in riparian areas with vertical cliffs and banks with fine-textured or fine-textured sandy soils near streams, rivers, lakes or the ocean.	No Potential. The Study Area has no cliffs or suitable riparian areas that would provide banks for nesting.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
loggerhead shrike <i>Lanius ludovicianus</i>	SSC	Prefers open habitats with scattered shrubs, trees, posts, or other perches. Eats mostly large insects.	Moderate Potential. Trees and shrubs in the Study Area provide suitable nesting and foraging habitat for loggerhead shrikes. Though suitable habitat is present, no loggerhead shrikes were observed during the January 27, 2016 or January 14, 2020 site visit.	Work windows or pre-construction nesting bird survey within 14 days of initiation of Project activities. See Section 5.0 for measures.
San Francisco (saltmarsh) common yellowthroat <i>Geothlypis trichas sinuosa</i>	SSC	Resident of San Francisco bay region fresh and salt water marshes. Requires thick, continuous cover down to water surface for foraging, tall grasses, tule patches, willows for nesting.	Moderate Potential. The willow riparian habitat in the Study Area is suitable to support nesting common yellowthroats. Though suitable habitat is present, no common yellowthroats were observed during the January 27, 2016 and January 14, 2020 site visit.	Avoidance of riparian habitat, work windows, or pre-construction nesting bird survey within 14 days of initiation of Project activities.
yellow-breasted chat <i>Icteria virens</i>	SSC	Summer resident; inhabits riparian thickets of willow and other brushy tangles near watercourses. Nests in low, dense riparian thickets consisting of willow, blackberry, wild grape	No Potential. The Study Area is outside the documented breeding range of this species (Shuford and Gardali 2008).	No further actions are recommended for this species.
yellow warbler <i>Dendroica petechia</i>	SSC	Summer resident in the region. Nests in riparian stands of aspens, sycamores, and alders with a dense understory of willows. Also nests in montane shrubbery in open conifer forests.	Moderate Potential. The willow riparian habitat in the Study Area is suitable to support nesting yellow warblers.	Avoidance of riparian habitat, work windows, or pre-construction nesting bird survey within 14 days of initiation of Project activities.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
grasshopper sparrow <i>Ammodramus savannarum</i>	SSC	Frequents dense tall, dry or well-drained grasslands, especially native grasslands with mixed grasses and forbs for foraging and nesting. Nests on ground at base of overhanging clumps of vegetation.	Unlikely. The Study Area contains extremely limited suitable dry, tall grassland habitat and the area receives a high level of disturbance from humans and off-leash pets. It is unlikely this species nests in the Study Area.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Bryant's savannah sparrow <i>Passerculus sandwichensis laudinus</i>	SSC	Year-round resident associated with the coastal fog belt, primarily between Humboldt and northern Monterey Counties. Occupies low tidally influenced habitats and adjacent areas; often found where wetland communities merge into grassland. May also occur in drier grasslands. Nests near the ground in taller vegetation, including along roads, levees, and canals.	High Potential. The Study Area contains grassland and wetland habitats capable of supporting nesting and foraging savannah sparrows. This species was observed during the January 27, 2016 site visit, and has a high potential to nest within the Study Area.	Work windows or pre-construction nesting bird survey within 14 days of initiation of Project activities.
Alameda song sparrow <i>Melospiza melodia pusillula</i>	SSC	Year-round resident in tidal-influenced marshes along the eastern and southern portions of San Francisco Bay.	No Potential. Alameda song sparrows are known to occur in marshes associated with the southern San Francisco Bay. This subspecies is not documented to occur on the Pacific Coast side of the San Francisco Peninsula.	No further actions are recommended for this species.
tricolored blackbird <i>Agelaius tricolor</i>	SSC	Usually nests over or near freshwater in dense cattails, tules, or thickets of willow, blackberry, wild rose or other tall herbs. Nesting area must be large enough to support about 50 pairs.	Unlikely. The Study Area does not contain riparian or marsh habitat typical for tricolored blackbird nesting. The willow riparian habitat does not contain open water habitat in or near the willows which is preferred for nesting colonies to provide ample prey items (Shuford and Gardali 2008).	No further actions are recommended for this species.
Reptiles and Amphibians				

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Western pond turtle <i>Actinemys marmorata</i>	SSC	Occurs in perennial ponds, lakes, rivers and streams with suitable basking habitat (mud banks, mats of floating vegetation, partially submerged logs) and submerged shelter.	No Potential. There is no suitable aquatic habitat within the Study Area. The drainage in the Study Area does not provide a permanent water source for this species and it is not known in the vicinity.	No further actions are recommended for this species.
San Francisco garter snake <i>Thamnophis sirtalis tetrataenia</i>	FE, SE, CFP, LCP	Vicinity of freshwater marshes, ponds, and slow moving streams in San Mateo County and extreme northern Santa Cruz County. Prefers dense cover and water depths of at least one foot. Upland areas near water are also very important.	Unlikely. The Study Area does not contain suitable aquatic habitat. The drainage in the Study Area does not provide a permanent water source for this species or its prey items and it is not known in the vicinity. The nearest potential habitat is 0.5 mile east of the Study Area across Highway 1.	No further actions are recommended for this species.
California red-legged frog <i>Rana draytonii</i>	FT, SSC, LCP	Associated with quiet perennial to intermittent ponds, stream pools, and wetlands. Prefers shorelines with extensive vegetation. Documented to disperse through upland habitats after rains.	Unlikely. The Study Area does not contain suitable aquatic habitat. The drainage, seasonal wetlands, and irrigation ditches within the Study Area do not provide a permanent water source for this species. No seasonal features are of suitable depth to support CRLF breeding, though they may occasionally be used by dispersing individuals from nearby occupied habitat. The nearest potential breeding habitat is over 600 feet from the Study Area and suitable burrows were not observed; therefore the Study Area does not support upland refugia of CRLF.	Implement prescribed avoidance and mitigation measures discussed in Section 5.0.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Fish				
river lamprey <i>Lampetra ayresi</i>	SSC	Lower Sacramento River, San Joaquin River and Russian River. May occur in coastal streams north of San Francisco Bay. Adults need clean, gravelly riffles, ammocoetes need sandy backwaters or stream edges, good water quality and temps < 25 degrees C.	No Potential. None of the aquatic features within the Study Area are anadromous or perennial. The Study Area is also outside of the range of this species.	No further actions are recommended for this species.
green sturgeon <i>Acipenser medirostris</i>	FT, SSC	Spawn in the Sacramento River and the Klamath River. Spawn at temperatures between 8-14 degrees C. Preferred spawning substrate is large cobble, but can range from clean sand to bedrock.	No Potential. None of the aquatic features within the Study Area are anadromous or perennial. The Study Area is also outside of the spawning range of this species.	No further actions are recommended for this species.
Pacific herring <i>Clupea pallasii</i>	None	Pacific herring is a coastal marine fish that uses large estuaries for spawning and early rearing habitat.	No Potential. None of the aquatic features within the Study Area are anadromous or perennial. The Study Area is also outside of the spawning range of this species.	No further actions are recommended for this species.
tidewater goby <i>Eucyclogobius newberryi</i>	FE, SSC	Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County to the mouth of the Smith River. Found in shallow lagoons and lower stream reaches, they need fairly still but not stagnant water and high oxygen levels.	No Potential. None of the aquatic features within the Study Area are anadromous or perennial. They are therefore unsuitable to support any life stage of tidewater goby.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
longfin smelt <i>Spirinchus thaleichthys</i>	FC, ST	Found in open waters of estuaries, mostly in the middle or bottom of the water column. This species prefers salinities of 15 to 30 ppt, but can be found in completely freshwater to almost pure seawater.	No Potential. None of the aquatic features within the Study Area are anadromous or perennial.	No further actions are recommended for this species.
Delta smelt <i>Hypomesus transpacificus</i>	FT, SE	Lives in the Sacramento-San Joaquin estuary in areas where salt and freshwater systems meet. Occurs seasonally in Suisun Bay, Carquinez Strait and San Pablo Bay.	No Potential. The Study Area lacks suitable estuarine habitat and is outside of the range of this species.	No further actions are recommended for this species.
steelhead - Central CA Coast ESU <i>Oncorhynchus mykiss irideus</i>	FT	Occurs from the Russian River south to Soquel Creek and Pajaro River, San Francisco and San Pablo Bay Basins. Populations in the Sacramento and San Joaquin Rivers and their tributaries. Adults migrate upstream to spawn in cool, clear, well-oxygenated streams. Juveniles remain in fresh water for 1 or more years before migrating downstream to the ocean.	No Potential. None of the aquatic features within the Study Area are anadromous or perennial. They are therefore unsuitable to support any life stage of steelhead.	No further actions are recommended for this species.
Chinook salmon – Sacramento winter-run ESU <i>Oncorhynchus tshawytscha</i>	FE, SE, RP	Occurs in the Sacramento River below Keswick Dam. Spawns in the Sacramento River but not in tributary streams. Adults migrate upstream to spawn in cool, clear, well-oxygenated streams. Juveniles typically migrate to the ocean soon after emergence from the gravel.	No Potential. None of the aquatic features within the Study Area are anadromous or perennial, and the Study Area is outside the spawning range of this species.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Chinook salmon - central valley spring-run ESU <i>Oncorhynchus tshawytscha</i>	FT, ST	Populations spawning in the Sacramento and San Joaquin Rivers and their tributaries. Adults migrate upstream to spawn in cool, clear, well-oxygenated streams. Juveniles remain in fresh water for 1 or more years before migrating downstream to the ocean.	No Potential. None of the aquatic features within the Study Area are anadromous or perennial, and the Study Area is outside the spawning range of this species.	No further actions are recommended for this species.
Chinook salmon - central valley fall/late fall-run ESU <i>Oncorhynchus tshawytscha</i>	SSC, RP	Populations spawning in the Sacramento and San Joaquin Rivers and their tributaries. Adults migrate upstream to spawn in cool, clear, well-oxygenated streams. Juveniles remain in fresh water for 1 or more years before migrating downstream to the ocean.	No Potential. None of the aquatic features within the Study Area are anadromous or perennial, and the Study Area is outside the spawning range of this species.	No further actions are recommended for this species.
Coho salmon - Central CA Coast ESU <i>Oncorhynchus kisutch</i>	FE, SE	Federal listing includes populations between Punta Gorda and San Lorenzo River. State listing includes populations south of San Francisco Bay only. Occurs inland and in coastal marine waters. Requires beds of loose, silt-free, coarse gravel for spawning. Also needs cover, cool water and sufficient dissolved oxygen.	No Potential. None of the aquatic features within the Study Area are anadromous or perennial. They are therefore unsuitable to support any life stage of coho salmon.	No further actions are recommended for this species.
Invertebrates				

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
white abalone <i>Haliotes sorenseni</i>	FE	White abalone is the first marine invertebrate to be listed under the ESA and are reported to be most abundant between 25-30 m (80-100 ft depth).	No Potential. The Study Area does not contain shoreline or ocean habitats.	No further actions are recommended for this species.
black abalone <i>Haliotes cracherodii</i>	FE	Ranges from Cabo San Lucas to Mendocino County. Found in intertidal and shallow subtidal areas.	No Potential. The Study Area does not contain shoreline or ocean habitats.	No further actions are recommended for this species.
San Bruno elfin butterfly <i>Callophrys mossii bayensis</i>	FE, LCP	Limited to the vicinity of San Bruno Mountain, San Mateo County. Colonies are located on in rocky outcrops and cliffs in coastal scrub habitat on steep, north-facing slopes within the fog belt. Species range is tied to the distribution of the larval host plant, <i>Sedum spathulifolium</i> .	No Potential. The Study Area is out of the known range of this species and does not contain its larval host plant.	No further actions are recommended for this species.
Myrtle's silverspot butterfly <i>Speyeria zerene myrtleae</i>	FE	Restricted to the foggy, coastal dunes/hills of the Point Reyes peninsula; extirpated from coastal San Mateo County. Larval foodplant thought to be <i>Viola adunca</i> .	No Potential. No suitable habitat is present, and the Study Area is outside of the current range for this species. Extirpated from San Mateo County (CNDDDB 2016).	No further actions are recommended for this species.
Bay checkerspot butterfly <i>Euphydryas editha bayensis</i>	FT	Restricted to native grasslands on outcrops of serpentine soil in the vicinity of San Francisco Bay. <i>Plantago erecta</i> is the primary host plant; <i>Orthocarpus densiflorus</i> and <i>O. purpurascens</i> are the secondary host plants.	No Potential. No serpentine or suitable habitat is present for this species. This species was extirpated from San Mateo County (USFWS 2009), and the only known population in San Mateo County is from a reintroduction plan at Edgewood County Park started in 2011.	No further action recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
monarch butterfly <i>Danaus plexippus</i>	winter roosts monitored by CDFW	Winter roost sites located in wind-protected tree groves (Eucalyptus, Monterey pine, cypress), with nectar and water sources nearby.	Unlikely. The trees within the Study Area do not comprise groves typical of winter roost sites for this species. Groves tend to be set in more protected areas from the immediate coastline and no monarch butterflies were observed in the Study Area or adjacent eucalyptus groves on the January 27 site visit. Though monarchs have been observed foraging in adjacent areas, roost sites are unlikely to establish on the Study Area.	No further action recommended for this species.
vernal pool fairy shrimp <i>Branchinecta lynchi</i>	FT, RP	Endemic to the grasslands of the central valley, central coast mountain, and south coast mountains. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	No Potential. The Study Area does not contain vernal pool or suitable habitat for this species.	No further actions are recommended for this species.
longhorn fairy shrimp <i>Branchinecta longiantenna</i>	FE, RP	Endemic to the eastern margin of the central coast mountains in seasonally astatic grassland vernal pools. Inhabit small, clear-water depressions in sandstone and clear-to-turbid clay/grass-bottomed pools in shallow swales.	No Potential. The Study Area does not contain vernal pool or suitable habitat for this species.	No further actions are recommended for this species.
San Francisco tree lupine moth <i>Grapholita edwardsiana</i>	LCP	Occurs only on sandy northern peninsula sites. Tree lupine (<i>Lupinus arboreus</i>) host the larvae of this species. This species is addressed in the City of Half Moon Bay LCP.	Unlikely. No tree lupine observed near the Study Area.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
mimic tryonia (California brackish water snail) <i>Tryonia imitator</i>	LCP	Occurs in brackish water, such as Pescadero Marsh. This species is addressed in the City of Half Moon Bay LCP.	Unlikely. The Study Area does not contain brackish water or marsh habitat suitable for this species.	No further actions are recommended for this species.
globose dune beetle <i>Coelus globosus</i>	LCP	Inhabitant of coastal sand dune habitat, from Bodega Head in Sonoma County south to Ensenada, Mexico. Inhabits foredunes and sand hummocks; it burrows beneath the sand surface and is most common beneath dune vegetation. This species is addressed in the City of Half Moon Bay LCP.	Unlikely. No dune habitat within the proposed Project.	No further action recommendations for this species.

*** Key to status codes:**

BGEPA	Bald and Golden Eagle Protection Act
CFP	California Department of Fish and Wildlife (CDFW) Fully Protected Animal
FC	Federal Candidate
FE	Federal Endangered
FT	Federal Threatened
LCP	City of Half Moon Bay Local Coastal Program Rare, Endangered, or Unique Species
SE	State Endangered
SC	State Candidate
SSC	California Department of Fish and Wildlife (CDFW) Species of Special Concern
ST	State Threatened
Rank 1A	California Native Plant Society (CNPS) Rank 1A: Plants presumed extirpated in California and rare or extinct elsewhere
Rank 1B.1	California Native Plant Society (CNPS) Rank 1B.1: Plants rare, threatened or endangered in California and elsewhere (seriously threatened in California)
Rank 1B.2	California Native Plant Society (CNPS) Rank 1B.2: Plants rare, threatened, or endangered in California and elsewhere (moderately threatened in California)
Rank 2B.2	California Native Plant Society (CNPS) Rank 2B.2: Plants rare, threatened, or endangered in California, but more common elsewhere (moderately threatened in California)
Rank 4.3	California Rare Plant Rank 4.3: Plants of Limited Distribution - A Watch List (not very threatened in California)
WBWG	Western Bat Working Group High Priority Species

****Potential species occurrence definitions:**

Present. Species was observed on the site during site visits or has been recorded (i.e. CNDDDB, other reports) on the site recently.

High Potential. All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.

Moderate Potential. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.

Unlikely. Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species has a low probability of being found on the site.

No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

APPENDIX F
STUDY AREA PHOTOGRAPHS

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View of one of the many developed/disturbed areas from informal trails that traverse the Study Area. Photo taken in northwest corner of Study Area, with northern coastal scrub depicted on the right.



View of Eucalyptus grove in southeast corner of Study Area.



View of Monterey cypress stand near the southeast corner of the Study Area.



View of representative vegetation in non-native grassland in the northwest portion of the Study Area.



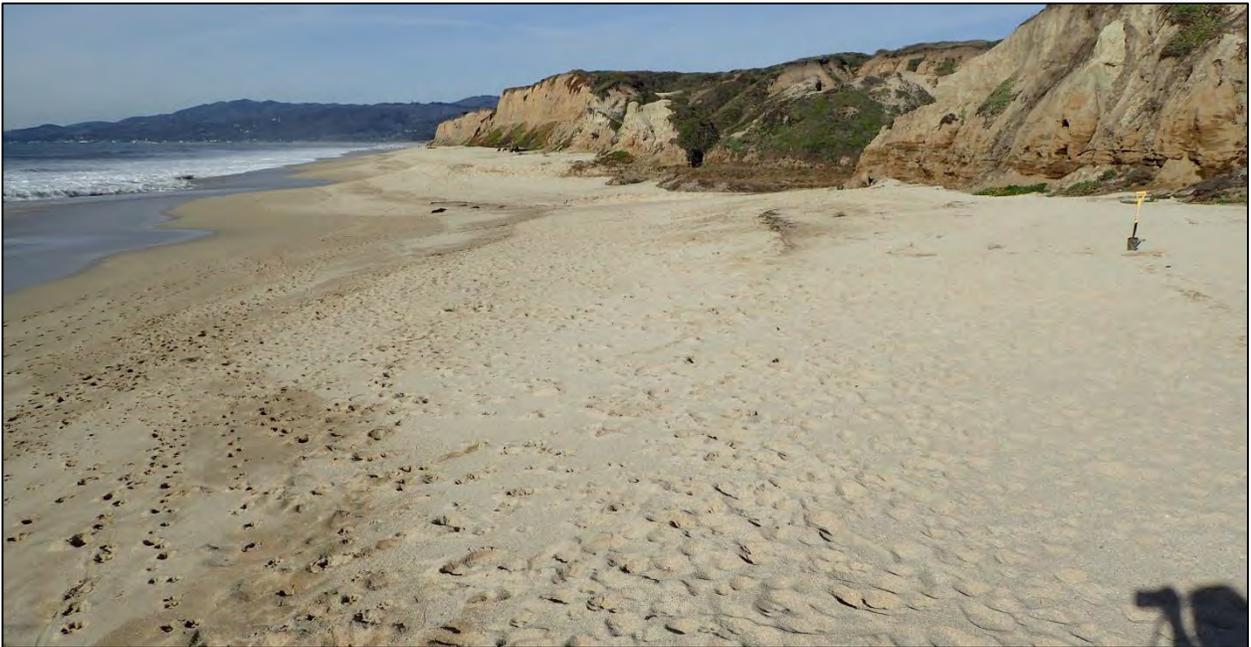
View of dense ice plant mats along sea cliffs in western portion of the Study Area.



Representative view of northern coastal scrub in habitat central portion of the Study Area.



View of Sample Point 20 in coyote brush/western rush scrub located in north central portion of Study Area.



View of sea cliffs in southwest portion of the Study Area.



View of main ravine with unnamed intermittent to perennial drainage in southwest portion of Study Area.



View of high tide line from the beach.



View of ravine with central coast riparian scrub facing northeast from the top of southern slope.



View of ravine with central coast riparian scrub facing east from the top of its northern slope.



View of SP 7 located in central coast riparian scrub habitat within ravine in southwestern portion of Study Area.



View of ordinary high water mark for non-wetland waters associated with unnamed intermittent to perennial drainage.



View of intermittent to perennial drainage connection to tidal waters from the beach.



View of existing trail crossing through central coast riparian scrub in eastern portion of Study Area.



View of seasonal wetland depression SW 1, associated with Sample Point 1. Photograph taken on January 26, 2016



View of coastal seasonal swale, SW33, where Sample Point 3 was taken on January 26, 2016.



View of a seasonal wetland marsh dominated by located in the north-central portion of the Study Area, associated with Sample Point 16.



View of a seasonal wetland depression, SW 38, on January 26, 2016.



View of algal growth in seasonal wetland depression, SW 38.



View of seasonal wetland swale, SW44, taken on January 27, 2016.



Representative view of algal matting and surface water present at in seasonal wetland depression, SW 93, taken on January 27, 2016.



Representative view of seasonal wetland marsh, SW 104, in southern portion of Study Area on January 27, 2016.



View facing west of surface water present in seasonal wetland depression SW 101 on January 27, 2016.



View facing west of seasonal wetland depression SW 101 on February 9, 2016.



View of algal growth within SW 101 taken on February 9, 2016.



View of chorus frog egg masses and algal growth observed at seasonal wetland depression, SW 67.



View of larger seasonal wetland depression, SW 67, taken on January 27, 2016.



View of representative soil profile taken from upland adjacent to SW 67 associated with Sample Point 15.



Representative view of coastal seasonal wetland depressions during the January 27, 2016 site visit. SW 83 pictured.



View facing north of coastal seasonal wetland depressions SW 77, SW 78, and SW 79, observed with no surface water and no high water table on the February 8, 2016 site visit.



View of algal growth within seasonal wetland marsh SW 19, taken on February 16, 2016.



View of Sample Point 22, taken within SW 19, with representative species dominated by brown headed rush (*Juncus phaeocephalus*, FACW).



Redoximorphic concentrations observed within depleted matrix, observed at Sample Point 22 on February 16, 2016.



Representative view of upland Sample Point 23.



Representative view of coastal seasonal wetland meadow, SW 7, dominated by popcorn flower (*Plagiobothrys chorisianus*, OBL).



Representative view of coastal seasonal wetland meadow, SW 28, dominated by Monterey sedge (*Carex harfordii*, OBL) and bristly ox-tongue (*Helminthotheca echioides*, FACU).



A portion of the Utility Area, showing Redondo Beach Road and adjacent eucalyptus grove on both sides of the road and ruderal/developed on the left in the background. View facing west.