BIOLOGICAL RESOURCES ASSESSMENT
SAN BRUNO MOUNTAIN CATTLE GRAZING PILOT PROGRAM
COUNTY OF SAN MATEO

DATE: DECEMBER 15, 2020
PERMIT TYPE: UNKNOWN
APPLICANT: SAN MATEO COUNTY PARKS DEPARTMENT
PROJECT LEAD: HANNAH ORMSHAW, NATURAL RESOURCE MANAGER
TOTAL PARCEL SIZE: THE SURVEY AREA CONSISTS OF 2 AREAS (SA1 AND SA2) TOTALING 216 ACRES AND INCLUDING PORTIONS OF NUMEROUS PARCELS.
ASSESSOR PARCEL NUMBER: SA1 CONSISTS PRIMARILY OF 005-460-030, 005-470-010, AND 005-510-999 AND SMALL AREAS OF SEVERAL ADJACENT PARCELS. SA2 INCLUDES PRIMARILY 007-180-120, 007-180-290, AND 007-650-130 AND SMALL AREAS OF SEVERAL ADJACENT PARCELS.
PROJECT PROPOSAL DESCRIPTION: GRAZING ON COUNTY PARKS LANDS INCLUDING INSTALLATION OF CATTLE GRAZING INFRASTRUCTURE (FENCING, WATER TROUGHS, ACCESS ETC.)

PREPARED FOR SAN MATEO COUNTY PARKS DEPARTMENT BY:

As a Qualified Biologist, I hereby certify that this Biological Assessment was prepared according to the County Parks' requirements and that the statements furnished in the report and associated maps are true and correct to the best of my knowledge.

<table>
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BIOLOGICAL STUDY CHECKLIST

This Biological Assessment DID NOT provide adequate information to make CEQA findings regarding potentially significant impacts or to develop mitigation measures necessary to mitigate potentially significant project and cumulative impacts.

Additional biology-related information, studies, site plan, or outside agency permits needed to make CEQA findings, develop mitigation measures or to satisfy other regulatory agencies:

- Protocol-level Rare Plant Surveys

A formal wetland delineation has not been conducted for the survey areas, however all potential wetlands will be avoided so a formal wetland delineation is not necessary.

It is anticipated that these additional surveys will be conducted in 2021. However, based on the nature of the project and our understanding of the survey areas, the significance checklist table below was preliminarily completed, and will be finalized once additional information is received.

CHECKLIST OF BIOLOGICAL RESOURCES	PROJECT IMPACTS DEGREE OF EFFECT				CUMULATIVE IMPACT DEGREE OF EFFECT			
	N	LS	PS-M	PS	N	LS	PS-M	PS
Biological Resources					X			
Species			X		X			
Ecological Communities			X		X			
Habitat Connectivity	X				X			

N: No impact
LS: Less than significant impact
PS-M: Potentially significant unless mitigation incorporated
PS: Potentially significant

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SUMMARY

The proposed project involves grazing of cattle and the installation of cattle grazing infrastructure (fencing, water troughs, access etc.) in support of cattle grazing on County Park Lands. Grazing has been proposed at two locations within the San Bruno Mountain Habitat Conservation Plan (SBMHCP) area as a tool for enhancing habitat for federally-endangered butterfly species. The proposed grazing areas are essential habitat for mission blue butterfly (*Icaricia icarioides missionensis*), callippe silverspot butterfly (*Speyeria callippe callippe*), and Bay checkerspot butterfly (*Euphydryas editha bayensis*) and have extensive presence of host plants and nectar plants for all three species. These grassland habitats are threatened by scrub encroachment and overgrowth of non-native annual grasses. These two grazing locations are not contiguous and include the Northeast Ridge Grazing Pilot Area (SA1) and Southeast Slope Grazing Pilot Area (SA2) (Figure 1). The Northeast Ridge Grazing Pilot Area is approximately 91 acres and the Southeast Slope Grazing Pilot Area is approximately 125 acres. Combined, the two grazing pilot areas total approximately 216 acres.

Biologists from Nomad Ecology, LLC, surveyed the grazing pilot areas on March 17, March 18, May 21, May 22, and August 6, 2020 to survey and map butterfly host plants, sample and map vegetation communities, and assess habitat suitability on site for special status species.

Two California Rare Plant Rank species: San Francisco wallflower (*Erysimum franciscanum*, CRPR 4.2) and Scouler's catchfly (*Silene scouleri* subsp. *scouleri*, CRPR 2B.2) were observed in the survey areas. Twenty special status plant species were considered to have the potential to occur within the survey areas. Three species - San Francisco collinsia (*Collinsia multicolor*, CRPR 1B.2), San Francisco gumplant (*Grindelia hirsutula* subsp. *maritima*, CRPR 3.2) and coast iris (*Iris longipetala*, CRPR 4.2) - were determined to have a high potential to occur, four special status plant species were determined to have a moderate potential to occur, and thirteen special-status plant species were considered to have a low potential to occur within the survey areas.

Critical Habitat for the federally threatened bay checkerspot butterfly is present in SA2. Fifteen special status wildlife species were considered to have the potential to occur within the survey areas. Four of these wildlife species are covered by the SBMHCP: mission blue butterfly, Callippe silverspot butterfly, Bay checkerspot butterfly, and San Bruno elfin butterfly (*Callophrys mossii bayensis*). Observations of mission blue and Callippe silverspot have regularly been made within both survey areas and these species have high potential to occur within the survey areas. Bay checkerspot is considered to have a high potential to occur, as reintroductions of this species have been made to various locations on San Bruno Mountain annually since 2017 (Creekside Center for Earth Observation 2021) and it is possible that the population could expand into the survey areas in the future. The San Bruno elfin butterfly is considered to have a moderate potential to occur. No wildlife connectivity features are present in the survey areas.

Sensitive natural communities and potential wetlands were observed in the survey areas.

Potential impacts and minimization measures are addressed in this report.

Section 1. CONSTRUCTION FOOTPRINT DESIGN

Development Proposal Description

The proposed project involves introducing cattle grazing including the installation of cattle grazing infrastructure (fencing, water troughs, access etc.) in support of cattle grazing at two locations within the San Bruno Mountain Habitat Conservation Plan (SBMHCP) area. Grazing will be used as a tool for enhancing habitat for federally-endangered butterfly species. The two locations are not contiguous and include the Northeast Ridge Grazing Pilot Area (SA1) and Southeast Slope Grazing Pilot Area (SA2) (Figure 1). The Northeast Ridge Grazing Pilot Area is approximately 91 acres and the Southeast Slope Grazing Pilot Area is approximately 125 acres. Combined, the two grazing pilot areas total approximately 216 acres. The proposed grazing areas are essential habitat for mission blue, callippe silverspot, and Bay checkspot butterflies and have an abundance of host and nectar plants for all three species. These grassland habitats are threatened by overgrowth of non-native annual grasses, thatch build up, invasive weeds, and native scrub encroachment. The goals are to use controlled livestock (cattle) grazing to 1) control non-native annual grasses and thatch build-up, 2) control invasive weeds, and 3) control scrub encroachment on grassland. These actions will increase the cover and diversity of native species and enhance habitat for mission blue, callippe silverspot, and Bay checkerspot butterflies.

The effects of grazing were analyzed during prior project review and environmental impact analysis. This report provides a more detailed inventory of biological resources on site and addresses impacts associated with the installation of cattle grazing infrastructure including troughs, water infrastructure, fencing, paddocks, and access routes to these features. Project construction activities will include widening, grading and rocking of access roads, pouring of concrete pads for troughs, trenching for installation of a water source for the troughs, and installation of barbed wire fencing. The project is still in the design phase and the exact locations of grazing and grazing infrastructure have not been identified. The final design will incorporate the results of this Biological Resource Assessment and any additional resource surveys to avoid and minimize impacts to biological resources. A Grazing Management Plan will be prepared for the project to ensure grazing is conducted in a manner that promotes stewardship of the survey areas. The Grazing Management Plan will address grazing requirements including the size and number of pastures, timing and duration of grazing events, appropriate monitoring and adaptive management.

Construction Footprint Size

The project is still in the design phase so the exact construction footprint of grazing infrastructure and grazing has not been identified, however the design will incorporate the results of this Biological Resource Assessment and any additional resource surveys to avoid and minimize impacts to biological resources.

Project Design for Impact Avoidance or Minimization

The project is still in the design phase so the exact construction footprint of grazing infrastructure and grazing has not been identified, however the design will incorporate the results

of this Biological Resource Assessment and any additional resource surveys to avoid and minimize impacts to biological resources.

Coastal Zone/Overlay Zones

The survey area is not located in the coastal zone.

Zoning

The APN's comprising the majority of the survey areas were searched using the County of San Mateo Planning Tool. No data was available for these parcels. The project will not change the existing land-use of the project area and it will remain open space managed for species under the SBMHCP.

Elevation

Elevations in SA1 range from 180 feet near Mission Blue Drive to 480 feet in elevation at the top of Callippe Hill and Northeast Ridge. Elevations in SA2 range from 40 feet near Bayshore Blvd. to 800 feet on the ridge top.

Other

Not Applicable.

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Biological Resource Assessment

Legend

Survey Areas - SA1 & SA2

1:10,800

0 450 900

Feet

Figure 1

Project Location

San Bruno Mountain Cattle Grazing Pilot Program

San Mateo County Parks

Source:USGS Ortho Aerial Imagery, San Mateo County, California 2018

San Mateo County, California

Section 2. SURVEY AREA DESCRIPTION AND METHODOLOGY

2.1. SURVEY PURPOSE

Discretionary actions undertaken by public agencies are required to demonstrate compliance with the California Environmental Quality Act (CEQA). The purpose of this Biological Resource Assessment is to gather enough information about the biological resources associated with the proposed project, and their potential to be impacted by the project, to make a CEQA Initial Study significance finding for biological resources. A summary of biological resource regulations in included in Appendix A. In general, Biological Resource Assessments are intended to:

- Provide an inventory of the biological resources on a project site and the values of those resources.
- Determine if a proposed project has the potential to impact any significant biological resources.
- Recommend project redesign to avoid, minimize, or reduce impacts to significant biological resources.
- Recommend additional studies necessary to adequately assess potential impacts and/or to develop adequate mitigation measures.
- Develop mitigation measures, when necessary, in cases where adequate information is available.
- Provide biological resources information sufficient for compliance with CEQA review for the project.

2.2. SURVEY AREA DESCRIPTION

The survey area consists of two non-contiguous parcels, Northeast Ridge Grazing Pilot Area (SA1) and Southeast Slope Grazing Pilot Area (SA2) (Figure 1). The Northeast Ridge Grazing Pilot Area is approximately 91 acres and the Southeast Slope Grazing Pilot Area is approximately 125 acres. Combined, the two grazing pilot areas total approximately 216 acres.

Both SA1 and SA2 are within the boundary of San Bruno Mountain State/County Park. They are within the Canada de Guadalupe Visitacion and Rodeo Viejo Land Grant as shown on the San Francisco South 7.5-minute USGS topographic quadrangle. Both survey areas are located within the Central Coast subregion of the California Floristic Province (Baldwin et al. 2012). As described in the *Ecological Subregions of California* (USDA 1997), the survey areas are located within the San Francisco Peninsula subsection of the Central California Coast Section. The *Ecological Subregions of California* are the basis for describing regional variation in California alliance descriptions in *A Manual of California Vegetation* (Sawyer et al. 2009).

San Francisco Peninsula Subsection

The San Francisco Peninsula subsection is at the north end of a peninsula between the south part of San Francisco Bay and the Pacific Ocean that is characterized by a temperate and sub-humid climate with a significant marine influence (USDA 1997). Located just northeast of the San Andreas fault, this is a subsection of Franciscan rock hills surrounded by a plain of Quaternary marine and dune sand deposits (USDA 1997). Fluvial erosion is the main geomorphic process. Wind is also an active geomorphic agent, especially on the west side of the peninsula (USDA 1997). These soils are largely leached free of carbonates and soils in or near the tidal zone accumulate soluble salts (USDA 1997). Mean annual precipitation for this region ranges from 20 to 25 inches, most all of which is rain (USDA 1997). Mean annual temperature is from 56° to 58° and mean freeze-free period is from 250 to 300 days (USDA 1997). Hydrologically, runoff is rapid from the hills, but slow from the alluvial plains. Streams are dry throughout the summer (USDA 1997).

Locally the climate of the survey areas are characterized as Mediterranean with cool wet, winters and warm to hot, dry summers. Annual average rainfall is approximately 23 to 25 inches (PRISM 2018).

2.2.1 SURVEY AREA 1 (SA1)

Location

SA1 is the 91-acre Northeast Ridge Grazing Pilot Area. It is located in the northeastern section of the SBMHCP area and in the Northeast SBMHCP Management Area. It is accessed from the south via Mission Blue Drive or from the north via Guadalupe Canyon Parkway.

Survey Area Environmental Setting

SA1 is located on the ridgelines and slopes of the Guadalupe Hills which are roughly east-west oriented hills forming the northern slope of the Guadalupe Valley. SA1 is on a steep south and east facing slope. Elevations range from 180 feet near Mission Blue Drive to 480 feet in elevation at the top of Callippe Hill and Northeast Ridge. There are steep north facing road cuts facing Guadalupe Canyon Road.

Vegetation consists primarily of grasslands and coyote brush (*Baccharis pilularis* subsp. *consanguinea*) scrub. Scattered coast live oak (*Quercus agrifolia* var. *agrifolia*) trees are present in coyote brush scrub vegetation particularly on north and east facing slopes. Stands of French broom (*Genista monspessulana*[*]) are present. There are three drainages present in SA1 that appear to be ephemeral and likely only flow immediately after rain events: one is on the north facing slope above Guadalupe Canyon Parkway, one is on the south facing slope, and one is on the east facing slope. Once they leave the site they presumably drain east into the Brisbane Lagoon or the San Francisco Bay.

Two soil mapping units are located within SA1 (USDA 1991). Almost all of SA1 is mapped as Candlestick-Kron-Buriburi complex 30-75 slopes which is a loam soil. There is a small amount

[*] Denotes a species not native to California.

of Orthents, cut and fill-Urban land complex, 5 to 75 percent slopes mapped on the steep north facing road bank slopes immediately adjacent to Guadalupe Canyon Parkway.

The site is undeveloped. There are no hiking trails in SA1, however there are some social trails that lead from the residential housing community to the west into SA1. There is an electrical transmission line that runs north-south across the survey area.

Surrounding Area Environmental Setting

SA1 is bordered by residential developments to the west and southeast, by Guadalupe Canyon Parkway to the north and northeast, and by Mission Blue Drive to the south. Industrial uses are present south of Mission Blue Drive. SA1 is contiguous with the rest of San Bruno Mountain to the north and west. Immediately north of SA1 and Guadalupe Canyon Parkway is the Carter Martin Management Unit of SBMHCP and north of that is more residential development.

Cover

Cover at SA1 is quantified as follows:

41% native vegetation
55% non-native vegetation (including non-native grassland)
1% bare ground/cleared/graded
3% buildings, paved roads, other impervious cover

2.2.2 SURVEY AREA 2 (SA2)

Location

SA2 is the 125-acre Southeast Slope Grazing Pilot Area. It is located in the southeastern-most section of the SBMHCP and in the Southeast Ridge SBMHCP Management Area. It is accessed from the south via Bayshore Blvd or from the northwest via the Ridge Trail on San Bruno Mountain.

Survey Area Environmental Setting

SA2 is located at the eastern terminus of an east-west oriented slope on southeastern facing slopes above Bayshore Boulevard. SA2 is on a steep southeast facing slope. Elevations range from 40 feet near Bayshore Blvd. to 800 feet on the ridge top.

Vegetation consists primarily of grasslands and coyote brush scrub with smaller amounts of other types of herbaceous communities, scrub and woodland. Scattered trees are present in canyons and at the bottom of the slope. There are five drainages present in SA2, all are southeast facing in steep canyons. They are likely ephemeral and flow only in the winter. Once they leave the site they drain southeast into the San Francisco Bay.

Four soil mapping units are located within SA2 (USDA 1991). The majority of the slopes of SA2 are mapped as Barnabe-Candlestick complex, 30 to 75 percent slopes which is a very gravelly sandy loam overlaying unweathered bedrock. There are small amounts of Candlestick-Kron-Buriburi complex 30 to 75 slopes on the ridge top and Candlestick variant loam, 15 to 30 percent slopes in the lower portion of the slope and in the valley bottom. Orthents, cut and fill, 15 to 75 percent slopes is mapped on the northeast slope above Bayshore Blvd where the old quarry used

to be. There is a small amount of Orthents, cut and fill-Urban land complex, 5 to 75 percent slopes mapped on the steep north facing road bank slopes immediately adjacent to Guadalupe Canyon Parkway.

There are no hiking trails in SA2. SA2 is bordered by the Ridge Trail to the north, and there is an old dirt road leading from the billboard on Bayshore Blvd. to the old quarry. There is a radio facility on the ridge top that is surrounded by fencing.

Surrounding Area Environmental Setting

SA2 is adjacent to and west of Bayshore Boulevard and Highway 101. To the east of Highway 101 is Oyster Point and the San Francisco Bay. Undeveloped San Bruno Mountain is present to the north and west. The community of Brisbane is located north over the ridge and South San Francisco is located south of SA2.

Cover

Cover at SA2 is quantified as follows:

37% native vegetation
62% non-native vegetation (including non-native grassland)
1% bare ground/cleared/graded
<1% buildings, paved roads, other impervious cover

2.3. METHODOLOGY

2.3.1 REFERENCES

Background information for listed and special status plant and wildlife species, and sensitive natural communities was compiled through a review of the following resources:

U.S. Fish and Wildlife Service (USFWS):

- A list of threatened and endangered species that may occur in the proposed project location, and/or may be affected by the proposed project was generated using the USFWS Information for Planning and Consultation (IPaC) online tool (USFWS 2020a)
- National Wetland Inventory for the San Francisco South Quadrangle (USFWS 2020b)

National Oceanic and Atmospheric Administration Fisheries (NOAA Fisheries):

- Species list for the San Francisco South USGS 7.5-minute topographic quadrangle (NOAA Fisheries 2016).

California Department of Fish and Wildlife (CDFW):

- California Natural Communities List (CDFW 2020a)
- California Natural Diversity Database (CNDDB) Query for the Point Bonita, San Francisco North, San Francisco South, Oakland West, Hunters Point, Montara Mountain, and San Mateo 7.5-minute USGS Quadrangles (CDFW 2020b)
- Special Animals List (CDFW 2020c)

- Special Vascular Plants, Bryophytes, Lichens List (CDFW 2020d)
- State and Federally Listed Endangered, Threatened and Rare Plants of California (CDFW 2020e)
- State and Federally Listed Endangered and Threatened Animals of California (CDFW 2020f)

Other Sources:

- Assessment of the Past 30 Years of Habitat Management and Covered Species Monitoring Efforts Associated with the San Bruno Mountain Habitat Conservation Plan (Creekside Science 2015)
- California Native Plant Society's Inventory of Rare and Endangered Plants of California Query for the Point Bonita, San Francisco North, San Francisco South, Oakland West, Hunters Point, Montara Mountain, and San Mateo 7.5-minute USGS Quadrangles (CNPS 2020a)
- Consortium of California Herbaria (CCH 2020)
- Flora of the Santa Cruz Mountains of California (Thomas 1961)
- A Flora of the San Bruno Mountains San Mateo County, California (McClintock et al. 1990)
- Illustrated Field Guide to the Woody Plants of the Santa Cruz Mountains (Corelli 2005)
- The Jepson Manual, 2nd Edition (Baldwin et al. 2012)
- A Manual of California Vegetation (Sawyer et al. 2009, CNPS 2020b)
- Reintroduction of the Bay Checkerspot Butterfly to San Bruno Mountain. Semi-Annual Report for April 1, 2018-September 30, 2019 (Creekside Science 2019)
- San Bruno Mountain Area Habitat Conservation Plan (SBMHCP Steering Committee 1982)
- San Bruno Mountain Habitat Management Plan (TRA 2008)
- San Mateo County Parks Vegetation Resources (Rana Creek 2002)
- San Mateo County Parks Department, GIS Biology Map Packet (SMCPD 2020)
- 2015 Rare, Threatened, and Endangered Plant Survey: San Bruno Mountain (Naumovich and Niederer 2016)

Botanical taxonomy and nomenclature conforms to *The Jepson Manual, 2nd Edition* (Baldwin et al. 2012) with the exception of recent updates on the *Jepson eFlora* (Jepson Flora Project 2020). Common names of plant species are derived from *The Calflora Database* (Calflora 2020). Land cover types and vegetation described herein conform to the *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986), *California Vegetation* (Holland and Keil 1995), and/or *A Manual of California Vegetation* (Sawyer et al. 2009; CNPS 2020b); wetland and deepwater habitat classifications conform to *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979), where appropriate.

Nomenclature for special status plant species conform to the *Inventory of Rare and Endangered Plants of California* (CNPS 2020a) and *Special Vascular Plants, Bryophytes and Lichens List*

(CDFW 2020d). Nomenclature for common and special status wildlife conforms to the nomenclature used in the *Complete List of Amphibian, Reptile, Bird and Mammal Species in California* (CDFW 2016) and the CNDDB (CDFW 2020b).

2.3.2 PERSONNEL AND FIELD INVESTIGATION

Nomad staff conducted five reconnaissance site visits to document habitats present within the survey area and to determine what, if any, special status plant and wildlife species and sensitive habitats known from the region (and documented during the background literature search) have potential to occur in the survey areas. Table 1 presents the details of the reconnaissance site visit. Photos were also taken of the survey area and the locations of these are depicted in Figure 2 and included in Section 5.

Table 1. Survey Details

SURVEY KEY	SURVEY DATE	SURVEY AREA MAP KEYS	SURVEY TYPE	TIME PERIOD	METHODS/ CONSTRAINTS	GPS	SURVEYORS
SD1	3/17/2020	SA1	BA - Mapping Host Plants	8:00 am – 4 :00 pm	Walking transects. Entire site was accessible.	Application on smartphone, 2 m. accuracy	Erin McDermott (vegetation ecologist) Jaclyn Inkster (botanist)
SD2	3/18/2020	SA2	BA - Mapping Host Plants	8:00 am – 4 :00 pm	Walking transects. Entire site was accessible.	Application on smartphone, 2 m. accuracy	Erin McDermott (vegetation ecologist) Jaclyn Inkster (botanist)
SD3	5/21/2020	SA2	BA - Sampling and Mapping Vegetation	8:00 am – 4 :00 pm	Wandering transects. Entire site was accessible.	Application on smartphone, 2 m. accuracy	Erin McDermott (vegetation ecologist) Jaclyn Inkster (botanist)
SD4	5/22/2020	SA1	BA - Sampling and Mapping Vegetation	8:00 am – 4 :00 pm	Wandering transects. Entire site was accessible.	Application on smartphone, 2 m. accuracy	Erin McDermott (vegetation ecologist) Jaclyn Inkster (botanist)
SD5	8/6/2020	SA1 and SA2	BA - Wildlife Reconnaissance	10:00 am-4:00pm	Wandering transects. Entire site was accessible.	Application on smartphone, 2 m. accuracy	Meghan Bishop (wildlife biologist)

SD = Survey Date

Reconnaissance Site Visits

During reconnaissance-level site visits, Nomad biologists made efforts to document the biological resources present in the survey areas. Those efforts included: searching for plants and animals while walking throughout the survey areas and making observations from stationary observation points. All areas within the survey areas were visited and evaluated for their potential to support sensitive biological resources. Protocol-level surveys for special status plants and animals were not conducted as part of this assessment. All wildlife species observed or recognized by diagnostic sign (e.g., audible call, tracks, scat, carcasses, burrows) were identified and recorded.

Host Plant Mapping

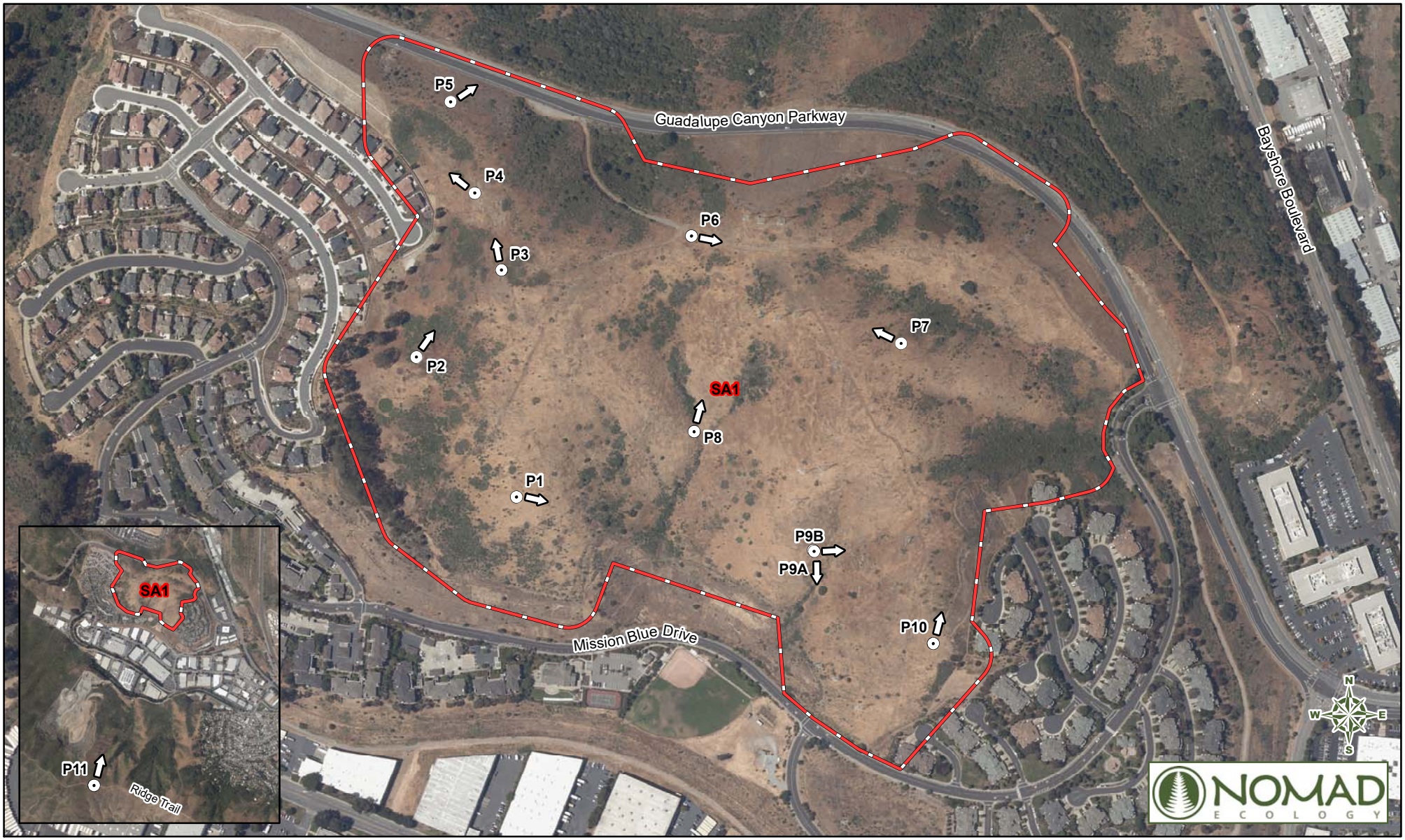
Nomad surveyed for native host plants for four endangered species of butterfly – mission blue butterfly, Callippe silverspot, Bay checkerspot, and the San Bruno elfin (*Callophrys mossii bayensis*) butterflies. Nomad surveyed for host plants including silver bush lupine (*Lupinus albifrons* var. *collinus*), summer lupine (*L. formosus* var. *formosus*), and varied lupine (*L. variicolor*) for the mission blue; johnny jump-up (*Viola pedunculata*) for the callippe silverspot; California plantain (*Plantago erecta*) for Bay checkerspot, and Pacific stonecrop (*Sedum spathulifolium*) for the San Bruno elfin. The non-native English plantain (*Plantago lanceolata*[*]) is also a host plant for Bay checkerspot but this species was not surveyed for or mapped in detail. Native host plants were mapped by walking wandering transects across all suitable habitat in the survey areas. Whenever a host plant was encountered, a point was recorded with a GPS unit and the number of individuals and a radius (in meters) of the population was estimated. The estimated radii were used to buffer each data point to represent the estimated population extent.

Vegetation Sampling and Mapping

Vegetation data was collected using the *CDFW-CNPS Protocol for Combined Vegetation Rapid Assessment and Relevé Field Form* (CNPS 2019). A total of 24 Rapid Assessments and 9 Relevés were collected within the survey areas. All relevés were located in herbaceous vegetation types. A representative set of data for each vegetation type was collected, not all stands of a vegetation type were sampled. Per the protocol (CNPS 2019), vegetation sampling data included the date of sampling, GPS location, environmental characteristics of the sampled stands, vegetation layer information, site history, and a field-assessed vegetation type. In Rapid Assessments, the most dominant or characteristic 20 species were recorded in a plotless area encompassing a homogenous stand of vegetation. In Relevés, all species in the plot were recorded. Percent cover estimates (following the methodology outlined in the protocol) were recorded for all species listed. All data were recorded on paper field forms; spatial information were captured on GPS enabled smartphones. Digital photographs were taken at all sample locations. Field notes and polygons were delineated on the hardcopy maps using the high resolution color aerial photograph flown in 2018 printed on these maps at 1:3,000 scale (1 inch equals 250 feet).

A list of all plant species observed (Appendix B) was compiled from the vegetation sampling data. Floristic surveys were not completed for the site, therefore the plant list is not complete.

[*] Denotes a species not native to California.



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Biological Resource Assessment

Legend
Survey Area
SA1
Photo Points

1:5,400
0 225 450
Feet

Figure 2A

Photo Point Locations

San Bruno Mountain Cattle Grazing Pilot Program
San Mateo County Parks

Source: USGS Ortho Aerial Imagery, San Mateo County, California 2018

San Mateo County, California

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Biological Resource Assessment

Legend
Survey Area
SA2
Photo Points

1:5,400
0 225 450
Feet

Figure 2B

Photo Point Locations

San Bruno Mountain Cattle Grazing Pilot Program
San Mateo County Parks

Source: USGS Ortho Aerial Imagery, San Mateo County, California 2018

San Mateo County, California

Section 3. THE BIOLOGICAL INVENTORY

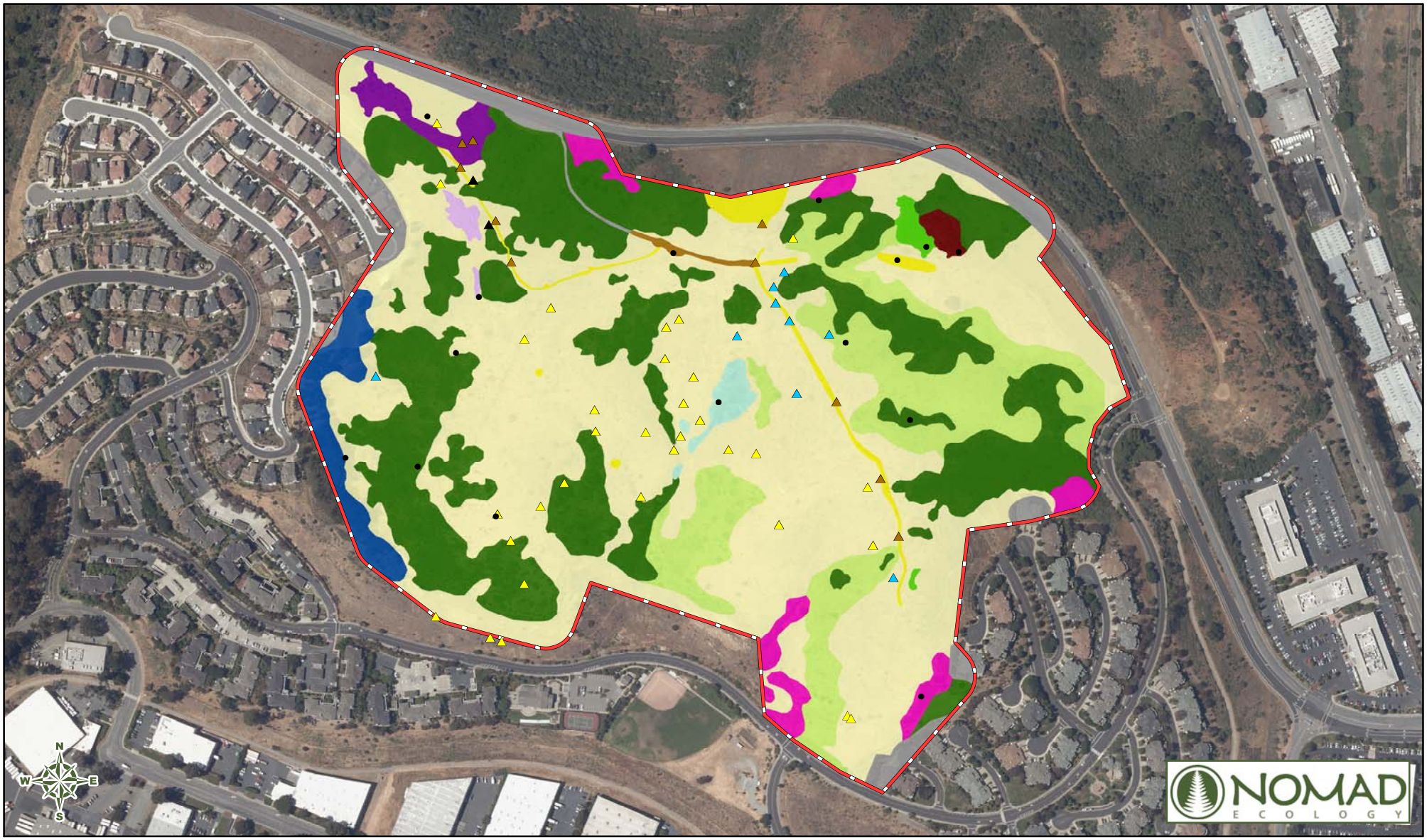
3.1. ECOLOGICAL COMMUNITIES

3.1.1 PLANT COMMUNITIES

A total of 20 vegetation communities were present in the survey area; they are listed in Table 2. Vegetation communities were identified and mapped using Alliance and Association names based on the *Manual of California Vegetation, Second edition* (MCV; Sawyer et al. 2009) and updated vegetation description in the Manual of California Vegetation Online (CNPS 2020b). The MCV is a hierarchy with alliance and association as the two finest levels. The alliance is defined by plant species composition, habitat conditions, physiognomy, and diagnostic species; at least one of the diagnostic species is typically found in the uppermost or dominant stratum (Jennings et al. 2009). The association is the most detailed classification level and reflects more specific characteristics of vegetation such as finer level difference in species composition, topography, soils, substrate, climate, hydrology and disturbance regime (FGDC 2008).

Table 2 relates MCV vegetation types identified within the survey area to vegetation types described in the SBMHCP (TRA 2008 HMP) and other commonly used vegetation classification systems including *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986), *CNPS Inventory of Rare and Endangered Plants of California* (CNPS 2001, 2020a), and *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979). The spatial distribution of vegetation types within the survey area are depicted in Figure 3. The locations of Rapid Assessments and Relevés are shown in Figure 3.

Of the 20 vegetation communities present in the survey areas, nine are locally important or rare plant (Table 2). These include coast live oak woodland which is locally important and protected by the California Oak Woodlands Conservation Act. Eight other plant communities are considered to be Sensitive Natural Communities because they have been assigned a Subnational Conservation Status Rank of S3 (CDFW 2020a). A Subnational Conservation Status Rank of S3 indicates a vegetation type is “Vulnerable” in the State meaning it is at moderate risk of extinction or elimination due to a restricted range, relatively few populations, recent and widespread declines, or other factors (NatureServe 2020).



December 2020

Biological Resource Assessment

Legend

Survey Area
SA1

Vegetation Sample Locations
Rapid Assessment or Releve

Native Grass Stand Point Locations
California oat grass
Hall's bentgrass
blue wildrye
purple needlegrass

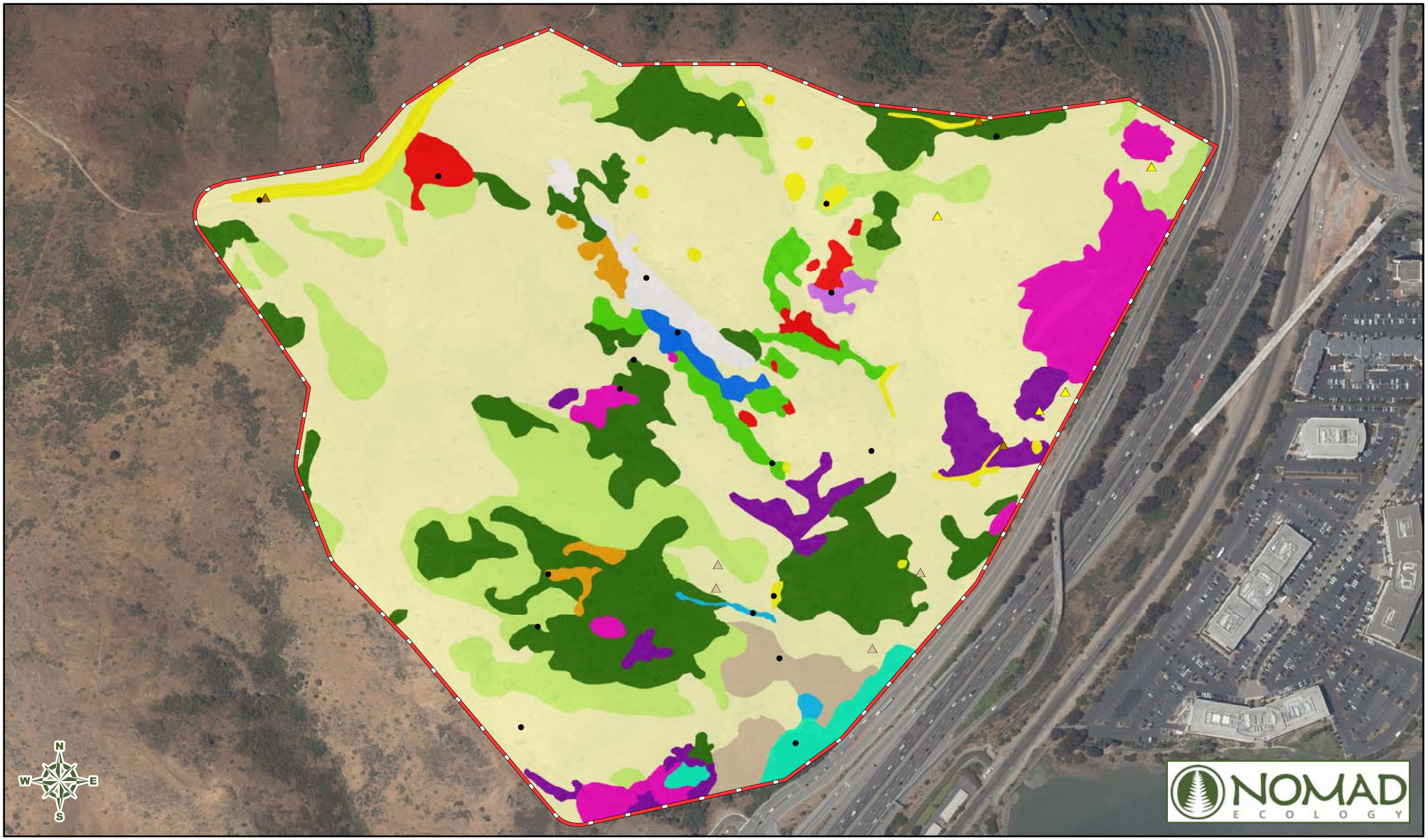
Plant Communities
Avena spp. – Bromus spp. Semi-Natural Herbaceous Alliance - PC1
Danthonia californica Grassland Association - PC2
Heterotheca sessiliflora Herbaceous Association - PC4
Stipa pulchra Grassland Association - PC7
Baccharis pilularis Shrubland Association - PC8
Baccharis pilularis / Annual grass – herb Shrubland Association - PC9
Baccharis pilularis – Artemisia californica Shrubland Association - PC10
Broom (Genista monspessulana) Shrubland Semi-Natural Association - PC13
Heteromeles arbutifolia Shrubland Association - PC14
Toxicodendron diversilobum Shrubland Alliance - PC17
Eucalyptus spp. Woodland Semi-Natural Association - PC19
Quercus agrifolia Woodland Alliance - PC20
Urban

1:5,400
0 225 450
Feet

Figure 3A
Plant Communities
San Bruno Mountain
Cattle Grazing Pilot Program
San Mateo County Parks

Source: USGS Ortho Aerial Imagery, San Mateo County, California 2018

San Mateo County, California



December 2020

Biological Resource Assessment

Legend

Survey Area
SA2

Vegetation Sample Locations
Rapid Assessment or Releve

Native Grass Stand Point Locations
California oat grass
creeping wildrye
purple needlegrass

Plant Communities
Avena spp. – Bromus spp. Semi-Natural Herbaceous Alliance - PC1
Elymus triticoides Herbaceous Association - PC3
Juncus mexicanus Herbaceous Association - PC5
Salvia spathacea Provisional Herbaceous Association - PC6
Stipa pulchra Grassland Association - PC7
Baccharis pilularis Shrubland Association - PC8
Baccharis pilularis / Annual grass – herb Shrubland Association - PC9
Diplacus aurantiacus Shrubland Alliance - PC11
Eriodictyon californicum Shrubland Alliance - PC12
Broom (Genista monspessulana) Shrubland Semi-Natural Association - PC13
Heteromeles arbutifolia Shrubland Association - PC14
Prunus ilicifolia Shrubland Association - PC15
Salix lasiolepis Shrubland Alliance - PC16
Toxicodendron diversilobum Shrubland Alliance - PC17
Aesculus californica Woodland Alliance - PC18
Urban

1:5,400
0 225 450
Feet

Figure 3B
Plant Communities
San Bruno Mountain
Cattle Grazing Pilot Program
San Mateo County Parks

Source: USGS Ortho Aerial Imagery, San Mateo County, California 2018

San Mateo County, California

Table 2. Plant Communities

Map Key	Vegetation Community and Wetland Classification Systems					Status[6, 7]	Condition[8]	Acres Total	
	Manual Of California Vegetation[1]	SBM HCP Vegetation Type[2]	Terrestrial Communities[3]	CNPS Inventory[4]	Wetlands & Deepwater Habitats[5]			SA1	SA2
Herbaceous Communities									
PC1	*Avena* spp. – *Bromus* spp. Semi-Natural Herbaceous Alliance (Wild Oats and Annual Brome Grasslands) (42.027.00)	Non-Native Grasslands Non-Native Grassland with some Needle Grass	Non-Native Grassland (42200)	Valley and Foothill Grassland	Upland	None	Intact and Disturbed	45.03	70.32
PC2	*Danthonia californica* Grassland Association (California Oat Grass Prairie) (41.050.00)	Coastal Terrace Prairie Non-Native Grassland with elements of Coastal Prairie	Coastal Terrace Prairie (41100)	Coastal Prairie	Upland	SNC (S3)[6]	Disturbed	0.18	--
PC3	*Elymus triticoides* Herbaceous Association (Creeping Wildrye Grassland) (41.081.01)	Valley Wildrye Grassland	Valley Wildrye Grassland (42140)	Valley and Foothill Grassland	Upland	SNC (S3)[6]	Intact	--	2.51
PC4	*Heterotheca sessiliflora* Herbaceous Association (Goldenaster Patches) (42.230.02)	Coastal Prairie	Coastal Terrace Prairie	Coastal Prairie	Upland	SNC (S3)[6]	Intact	0.30	--
PC5	*Juncus mexicanus* Herbaceous Association (Mexican Rush Marshes) (45.562.07)	Seasonal Wetland	Freshwater Seep (45400)	Meadows and Seeps	Palustrine non-persistent emergent wetlands	None	Intact	--	0.24
PC6	*Salvia spathacea* Provisional Herbaceous Association (Hummingbird sage stands)	Coastal Prairie	Coastal Terrace Prairie	Coastal Prairie	Upland	None	Intact	--	1.39
PC7	*Stipa pulchra* Grassland Association (Purple Needle Grass Grassland) (41.150.04)	Valley Needle Grass Grassland	Valley Needle Grass Grassland (42110)	Valley and Foothill Grassland	Upland	SNC (S3)[6]	Intact and Disturbed	1.34	1.81

Table 2. Plant Communities

Map Key	Vegetation Community and Wetland Classification Systems					Status[6, 7]	Condition[8]	Acres Total	
	Manual Of California Vegetation[1]	SBM HCP Vegetation Type[2]	Terrestrial Communities[3]	CNPS Inventory[4]	Wetlands & Deepwater Habitats[5]			SA1	SA2
Shrub Dominated Communities									
PC8	*Baccharis pilularis* Shrubland Association (Coyote Brush Scrub) (32.060.23)	Northern Coastal Scrub	Northern Coyote Brush Scrub (32110)	Coastal Scrub	Upland	None	Intact	24.22	17.68
PC9	*Baccharis pilularis* / Annual grass – herb Shrubland Association (Coyote brush – Annual Grassland Scrub) (32.060.20)	Northern Coastal Scrub	Northern Coyote Brush Scrub (32110)	Coastal Scrub	Upland	None	Intact	10.44	15.21
PC10	*Baccharis pilularis – Artemisia californica* Shrubland Association (Coyote Brush – California Sagebrush Scrub) (32.060.05)	Northern Coastal Scrub	Northern Coyote Brush Scrub (32110)	Coastal Scrub	Upland	None	Intact	0.61	--
PC11	*Diplacus aurantiacus* Shrubland Alliance (Bush Monkeyflower Scrub) (32.082.01)	Northern Coastal Scrub	Northern Coyote Brush Scrub (32110)	Coastal Scrub	Upland	SNC (S3?)[6]	Intact	--	0.80
PC12	*Eriodictyon californicum* Shrubland Alliance (California Yerba Santa Scrub) (37.080.00)	Northern Coastal Scrub	Northern Coyote Brush Scrub (32110)	Coastal Scrub	Upland	None	Intact	--	1.43
PC13	Broom (*Genista monspessulana*) Shrubland Semi-Natural Association (Broom Patches) (32.180.01)	Broom/Gorse Shrubland	Ruderal (Holland & Keil 1995)	Coastal Scrub	Upland	None	Disturbed	1.99	5.51
PC14	*Heteromeles arbutifolia* Shrubland Association (Toyon Chaparral) (37.912.01)	Northern Coastal Scrub	Northern Coyote Brush Scrub (32110)	Coastal Scrub or Chaparral	Upland	SNC (S3)[6]	Intact and Disturbed	1.05	3.37
PC15	*Prunus ilicifolia* Shrubland Association (Holly Leaf Cherry Chaparral) (37.910.03)	Northern Coastal Scrub	Northern Coyote Brush Scrub (32110)	Coastal Scrub or Chaparral	Upland	SNC (S3)[6]	Intact	--	0.33
PC16	*Salix lasiolepis* Shrubland Alliance (Arroyo Willow Thickets) (61.201.00)	Central Coast Riparian Scrub	Central Coast Riparian Scrub (63200)	Riparian Scrub	Upland	None	Intact	--	1.44

Table 2. Plant Communities

Map Key	Vegetation Community and Wetland Classification Systems					Status[6, 7]	Condition[8]	Acres Total	
	Manual Of California Vegetation[1]	SBM HCP Vegetation Type[2]	Terrestrial Communities[3]	CNPS Inventory[4]	Wetlands & Deepwater Habitats[5]			SA1	SA2
PC17	*Toxicodendron diversilobum* Shrubland Alliance (Poison Oak Scrub) (37.940.00)	Northern Coastal Scrub	Poison Oak Chaparral (37F00)	Chaparral	Upland	None	Intact	0.36	2.21
Tree Dominated Communities									
PC18	*Aesculus californica* Woodland Alliance (California Buckeye Groves) (75.100.00)	Coast Live Oak Woodland	California Buckeye Groves (Not Described)	Cismontane Woodland	Upland	SNC[6]	Intact	--	0.66
PC19	*Eucalyptus* spp. Woodland Semi-Natural Association (Eucalyptus Groves) (79.100.02)	Eucalyptus Forest	Urban Mix (Holland and Keil 1995)	Not Described	Upland	None	Disturbed	2.04	--
PC20	*Quercus agrifolia* Woodland Alliance (Coast Live Oak Woodland) (71.060.00)	Coast Live Oak Woodland	Coast Live Oak Woodland (71160)	Cismontane Woodland	Upland	Cal OWCA[7]	Intact	0.34	--
Non-Vegetation Land Cover Categories									
NA	Urban	Urban	Urban	Not Described	Upland	None	Intact	3.58	0.03
							Total	**91**	**125**

[1] A Manual of California Vegetation (Sawyer et al. 2009) and California Natural Community List (CDFW 2020a)
[2] San Bruno Mountain Habitat Management Plan (TRA 2008) and San Mateo County Parks Vegetation Resources (Rana 2002)
[3] Terrestrial Natural Communities of California (Holland 1986)
[4] CNPS Inventory of Rare and Endangered Plants of California Habitat Types (CNPS 2001)
[5] Classification of Wetlands & Deepwater Habitats of the U.S. (Cowardin et al. 1979)
[6] Natural Communities with ranks of S1-S3 are considered Sensitive Natural Communities (SNC) to be addressed in the environmental review processes of CEQA and its equivalents (CDFW 2020a, NatureServe 2020).
[7] The California Oak Woodland Act, Section 21083.4 of the Public Resources Code protects oak woodlands.
[8] As defined in the Standards for Biological Studies and Assessments (San Mateo County Parks 2015)

Herbaceous Dominated Types

Avena spp. - Bromus spp. Herbaceous Semi-Natural Alliance (Wild oats and annual brome grasslands)

As described (CNPS 2020b), wild oats* and annual brome* is dominant or co-dominant with other non-natives in the herbaceous layer. Emergent trees and shrubs may be present at low cover. Herbs are generally less than 4 feet (1.2 meters) in height and cover is open to continuous (CNPS 2020b). According to membership rules for grasslands to be classified as wild oats and annual brome grassland, oats or bromes must have greater than 50% relative cover and native herbs less than 10% relative cover in the herbaceous layer. Habitat for this vegetation community in California includes foothills, waste places, rangelands, and openings in woodlands between 0 and 7,218 feet (0-2200 meters) in elevation (CNPS 2020b).

This vegetation type made up a majority of the acreage in the survey areas and varied from areas highly impacted by non-native and invasive species to areas with less disturbance that retained some native integrity. Dense patches of native grasses, not large enough to be mappable units, were present throughout non-native grasslands. Dominant species in this vegetation type include slender wild oats (*Avena barbata**), rattlesnake grass (*Briza maxima**), ripgut brome (*Bromus diandrus**), brome fescue (*Festuca bromoides**), soft chess (*Bromus hordeaceus**), sheep sorrel (*Rumex acetosella**), hill morning glory (*Calystegia subacaulis* subsp. *subacaulis*), hummingbird sage (*Salvia spathacea*), purple needle grass (*Stipa pulchra*), Italian ryegrass (*Festuca perennis**), and soaproot (*Chlorogalum pomeridianum*) among others. This vegetation type within the survey area is considered intact in some areas due to the low level of anthropogenic impacts and the presence of native species, but also considered disturbed in places due to its dominance by nonnative species including invasive weeds.

Scattered individuals of shrubs such as coyote brush, poison oak (*Toxicodendron diversilobum*), and toyon (*Heteromeles arbutifolia*), and trees such as coast live oak were also present. These species were not mapped as shrublands or woodlands where they were considered a component of the larger grassland matrix and comprised less than 5% cover.

Danthonia californica Grassland Association (California oat grass prairie)

As described (CNPS 2020b), this plant community is dominated or co-dominated in the herbaceous layer by California oat grass with other native and non-native species present. Emergent trees and shrubs may be present at low cover, including coyote brush. Herb height is generally less than 3.3 feet (1 meter) and cover is open to intermittent (CNPS 2020b). According to membership rules for grasslands to be classified as California oat grass prairie, California oat grass must have greater than 50% relative cover in the herbaceous canopy, or greater than 25% absolute cover in the herbaceous layer. Habitat for this vegetation community in California includes coastal bluffs, valley bottoms, floodplains, terraces, slopes, and ridge tops (Sawyer et al. 2009).

California oat grass prairie is considered of high inventory priority as it has a Subnational Conservation Rank of S3, indicating it is “Vulnerable” and at moderate risk of extinction or elimination due to a restricted range, relatively few populations, recent and widespread declines, or other factors (NatureServe 2020).

Within the survey areas, California oat grass prairie is restricted to SA1 where it is found along a dirt and gravel road and in the immediately adjacent areas. Dominant species in this vegetation type include California oat grass (*Danthonia californica*), purple needle grass (*Stipa pulchra*), rattlesnake grass*, slender wild oats*, Italian wildrye*, sheep sorrel*, soft chess*, and rose clover (*Trifolium hirtum**) among others. This community is considered disturbed within the survey area because it is bisected by a two-track road and has high cover of non-native species.

Elymus triticoides Herbaceous Association (Creeping wildrye grassland)

As described (CNPS 2020b), creeping wildrye is dominant or co-dominant in the herbaceous layer with other native or non-native forbs and grasses. Emergent trees and shrubs may be present at low cover. Herbaceous species are less than 5 feet (1.5 meters) in height and cover is open to continuous (CNPS 2020b), according to membership rules creeping wildrye must comprise greater than 50% relative cover in the herbaceous layer. Habitat for this vegetation community in California includes poorly drained floodplains playas, drainage and valley bottoms, mesic flat to sloping topography, and marsh margins between 0 and 9,843 feet (0-3,000 meters) (Sawyer et al. 2009)..

Creeping wildrye grassland is considered of high inventory priority as it has a Subnational Conservation Rank of S3, indicating it is "Vulnerable" and at moderate risk of extinction or elimination due to a restricted range, relatively few populations, recent and widespread declines, or other factors (NatureServe 2020).

Within the survey areas, creeping wildrye grassland was present only in SA2 in two polygons towards the base of the slope where it flattens out into a valley bottom. The dominant species is creeping wildrye (*Elymus triticoides*) with other species present in lower numbers including Italian thistle (*Carduus pycnocephalus* subsp. *pycnocephalus**), bristly ox-tongue (*Helminthotheca echioides**), and brome fescue* among others. Within the survey area, this community is considered intact due to it being dominated by native species.

Heterotheca sessiliflora Herbaceous Association (Goldenaster patches)

As described (CNPS 2020b), goldenaster (*Heterotheca sessiliflora*) is dominant or codominant in the herbaceous layer with other native and/or non-native herbaceous species. Herbaceous species tend to be less than 3 feet (1 meter) in height and cover is sparse to intermittent (Sawyer et al. 2009). According to membership rules, goldenaster must be greater than 30% relative cover in the herbaceous layer, or greater than 50% relative cover. In California, this vegetation community inhabits sandy and cobbled gravel bars in floodplains, along riparian terraces and stream banks, flats, or slopes adjacent to riparian areas, dunes and headlands near the coast, and other seasonally disturbed areas.

Goldenaster patches is considered of high inventory priority as it has a Subnational Conservation Rank of S3, indicating it is "Vulnerable" and at moderate risk of extinction or elimination due to a restricted range, relatively few populations, recent and widespread declines, or other factors (NatureServe 2020).

Goldenaster patches occur as a plant community in two locations in SA1 on rocky outcrops. These areas have low overall cover (30% absolute cover) and are dominated by Bolander's

goldenaster *Heterotheca sessiliflora* subsp. *bolanderi*), rattlesnake grass*, and hair grass (*Aira caryophyllea**). They also contain other natives including bluff lettuce (*Dudleya farinosa*), coast buckwheat (*Eriogonum latifolium*), one-sided bluegrass (*Poa secunda* subsp. *secunda*), California acaena (*Acaena pinnatifida* var. *californica*), Ithuriel's spear (*Triteleia laxa*), and San Francisco leafy fleabane (*Erigeron foliosus* var. *franciscensis*). Bolander's goldenaster plants occur in other locations in the SA's as a component of scrub.

Juncus mexicanus Herbaceous Association (Mexican rush marshes)

As described (CNPS 2020b), Mexican rush (*Juncus mexicanus*) is dominant or co-dominant in the herbaceous layer with other, mostly native, herbaceous species. Emergent trees and shrubs may be present at low cover. Herbs are generally less than 3.3 feet (1 meter) in height and cover is intermittent to continuous (Sawyer et al. 2009). According to membership rules, Mexican rush must have either greater than 25% relative cover in the herbaceous layer or greater than 50% relative cover in the herbaceous layer. Habitat for this vegetation community in California includes wet and mesic meadows; along stream banks, rivers, lakes, ponds, fens, and sloughs; as well as freshwater, brackish, and alkaline marshes (Sawyer et al. 2009).

Mexican rush marshes are present only in SA2 in where it is represented by only two polygons towards the base of the slope where it flattens out into a valley bottom. These areas are characterized by patches of *Juncus* spp. and *Carex* sp. growing in swale bottoms. Dominant species are Mexican rush (*Juncus mexicanus*), sedges (*Carex* sp.), and umbrella sedge (*Cyperus eragrostis*). Within the survey area, this community is considered intact due to it being dominated by native species.

This plant community may meet the definition of a wetland and may be regulated by the regulatory agencies.

Salvia spathacea Provisional Herbaceous Association (Hummingbird sage stands)

Hummingbird sage (*Salvia spathacea*) is not a described vegetation type in either Holland (1986) or Sawyer et al (2009). It was mapped in the survey areas as it formed distinct, large, stands within SA2. It is dominated by hummingbird sage. The herbaceous layer has a high level of native integrity including narrow leaved mule ears (*Wyethia angustifolia*), Bolander's goldenaster, blue wildrye (*Elymus glaucus* subsp. *glaucus*), brownie thistle (*Cirsium quercetorum*), and coast buckwheat, as well as non-native species including brome fescue*, Italian wildrye*, slender wild oats*, Italian thistle*, and fennel*, among others. Coyote brush and golden yarrow (*Eriophyllum confertiflorum* var. *confertiflorum*) are also present at low cover values. Due to the high level of native species cover, this vegetation community is considered intact within the survey area.

Stipa pulchra Grassland Association (Needle grass grassland)

As described (CNPS 2020a), purple needle grass is dominant or characteristically present in the herbaceous layer with other perennial grasses and herbs. Emergent trees and shrubs may be present at low cover. Herbs are generally less than 3.3 feet (1 meters) in height and cover is open to continuous (Sawyer et al. 2009). According to membership rules for grasslands to be classified as needle grass grassland, purple needle grass must meet one of the following criteria: 1) comprise greater than 5% absolute cover as a characteristic to dominant species of the

herbaceous layer, 2) comprise greater than 10% relative cover of the herbaceous layer, 3) be characteristically present in the herbaceous layer with at least 2% absolute cover, or 4) have a clear presence in the stand with greater than 5% absolute cover in the herbaceous layer. Habitat for this vegetation community in California includes all topographic locations. Soils may be deep with high clay content, loamy, sandy, or silty soils derived from mudstone, sandstone, or serpentine substrates (Sawyer et al. 2009).

Needle grass grassland patches is considered of high inventory priority as it has a Subnational Conservation Rank of S3, indicating it is "Vulnerable" and at moderate risk of extinction or elimination due to a restricted range, relatively few populations, recent and widespread declines, or other factors (NatureServe 2020).

Needle grass grassland was mapped in both SA1 and SA2. Within the survey area, needle grass grasslands tend to be impacted by non-native species but retain moderate to high levels of native integrity and characteristic dominance by purple needle grass. Herbaceous species include purple needle grass, rattlesnake grass*, purple false brome (*Brachypodium distachyon**), slender wild oats*, soft chess*, Bolander's goldenaster, and California oatgrass among others. Within the survey area, this community is considered intact due to characteristic presence of native species. In addition to stands of this plant community, point locations were recorded where this species formed small patches that were too small to map as a polygon.

Shrub Dominated Vegetation Types

Baccharis pilularis Shrubland Association (Coyote brush scrub)

As described (CNPS 2020a), coyote brush is dominant to co-dominant in the shrub canopy with other native shrub species. Emergent trees may be present at low cover including Bishop pine, Douglas-fir, coast live oak or California bay. The membership rules in MCV are coyote brush > 15% shrub cover over grassy understory and relative cover > 50% absolute cover in the shrub layer. Within California, coyote brush scrub inhabits river mouths, stream sides, terraces, stabilized dunes of coastal bars, spits along the coastline, coastal bluffs, open slopes, and ridges. Soils are variable, sandy to relatively heavy clay (Sawyer et al. 2009). It occurs from 0-4,900 feet (0-1,500 meters) in elevation.

Coyote brush scrub is widespread throughout the survey areas, where it is invading grassland habitat in many areas. It is dominated by coyote brush but also contains small amounts of annual grasses and herbs, California sagebrush (*Artemisia californica*), poison oak, or bush monkeyflower. Other species include toyon (*Heteromeles arbutifolia*), slender wild oats*, brome fescue*, French broom (*Genista monspessulana**), rattlesnake grass*, California bee plant (*Scrophularia californica*), soft chess*, hair grass*, and fennel (*Foeniculum vulgare**), among others. Emergent trees are very sparse in this community. Within the survey area, this community is considered intact due to characteristic presence of native species in the shrub layer.

Baccharis pilularis / Annual grass - herb Shrubland Association (Coyote brush – annual grassland scrub)

Coyote brush is dominant to co-dominant in the shrub canopy with characteristic open interspaces dominated by annual grasses and native and non-native forbs. The membership rules

in MCV are coyote brush is greater than 15% shrub cover over grassy understory and relative cover is greater than 50% absolute cover in the shrub layer.

Coyote brush – annual grassland scrub occurs throughout SA1 and SA2. It occurred in areas where young coyote brush shrubs are encroaching in grassland habitats. Coyote brush shrubs were scattered and comprised 10-15% cover and herbaceous species comprised 60-70 percent cover. Characteristic herbaceous species include rattlesnake grass*, wild oats*, sheep sorrel*, soaproot, blue wildrye, and bracken fern (*Pteridium aquilinum* subsp. *pubescens*). This community is considered intact within the survey area due to a dominance of characteristic native species.

Baccharis pilularis – Artemisia californica Shrubland Association (Coyote brush – California sagebrush scrub)

Coyote brush is co-dominant in the shrub canopy with California sagebrush. The membership rules in MCV are coyote brush is greater than 15% shrub cover over grassy understory and relative cover is greater than 50% absolute cover in the shrub layer.

Within the survey areas, this plant community was only mapped in SA1 in a drainage on a south facing slope. It was characterized by California sagebrush being codominant with coyote brush. Other species included poison oak, toyon, and monkeyflower. Herbaceous species include false brome*, rattlesnake grass*, and hill morning glory. This community is considered intact within the survey area due to a dominance of characteristic native species.

Diplacus aurantiacus Shrubland Alliance (Bush monkeyflower scrub)

As described (CNPS 2020b), bush monkeyflower is dominant in the shrub canopy with other native shrub species present. Emergent trees may be present at low cover. Shrubs are less than 6.6 feet (2 meters) in height with an open to intermittent and two-tiered canopy. Herbaceous layer is open to intermittent. According to membership rules, bush monkeyflower is greater than 50% relative cover in the shrub layer. In California, this community occurs on somewhat steep northerly slopes with typically shallow loam soils (Sawyer et al. 2009).

Bush monkeyflower scrub is considered of high inventory priority as it has a Subnational Conservation Rank of S3, indicating it is “Vulnerable” and at moderate risk of extinction or elimination due to a restricted range, relatively few populations, recent and widespread declines, or other factors (NatureServe 2020).

Bush monkeyflower scrub occurs in SA2. It is dominated by bush monkeyflower and also contains coyote brush, poison oak, toyon, bracken fern, and slender oats*. This community is considered intact within the survey area due to a dominance of characteristic native species.

Eriodictyon californicum Shrubland Alliance (California yerba santa scrub)

As described (CNPS 2020b), California yerba santa is dominant in the shrub canopy with other native shrubby species present. Emergent trees may be present at low cover. Shrubs are less than 8.2 feet (2.5 meters) in height and the canopy is open to intermittent. Herbaceous layer tends to be grassy and is open to continuous (Sawyer et al. 2009). According to membership rules, California yerba santa must be greater than 50% relative cover in the shrub canopy with low to

moderate cover. This vegetation community is found in California on lower to middle slopes of serpentine, metavolcanics, and plutonic substrates with loamy soils.

California yerba santa scrub occurs in SA2 on rocky slopes. It is dominated by yerba santa and also includes hummingbird sage, toyon, poison oak, coyote brush, and San Francisco coyote mint (*Monardella villosa* subsp. *franciscana*). The herbaceous understory is dominated by soft chess* and brome fescue*. This community is considered intact within the survey area due to a dominance of characteristic native species.

Broom (*Genista monspessulana*) Shrubland Semi-Natural Alliance (Broom patches)

As described, French broom is dominant in the shrub canopy. Emergent trees may be present at low cover. According to membership rules, French broom must comprise greater than 15% absolute cover and greater than 60% relative cover in the shrub layer. Within California, this vegetation community occurs in roadsides, disturbed places, eroding slopes, riverbanks, disturbed grasslands, shrublands, and forest openings (Sawyer et al. 2009).

Broom patches occur in both SA1 and SA2. They were dominated by dense French broom*. They also contained poison oak, coyote brush, fennel*, ripgut brome*, slender wild oats*, summer mustard (*Hirschfeldia incana**), brome fescue*, and soft chess*, among others. Within the survey area, this vegetation community is considered disturbed due to the dominance of non-native species in both the shrub and herbaceous layers.

Heteromeles arbutifolia Shrubland Association (Toyon chaparral)

As described, toyon is dominant or co-dominant in the shrub canopy with other native shrub species. Emergent trees may be present at low cover. Shrubs are generally less than 49.2 feet (15 meters) in height with an open to continuous canopy. Herbaceous layer is sparse to continuous (Sawyer et al. 2009). According to membership rules, toyon is greater than 50% relative cover in the shrub canopy. Habitat for this vegetation community in California includes slopes that are often steep and north-facing with soils derived from bedrock or colluvium.

Toyon chaparral is considered of high inventory priority as it has a Subnational Conservation Rank of S3, indicating it is “Vulnerable” and at moderate risk of extinction or elimination due to a restricted range, relatively few populations, recent and widespread declines, or other factors (NatureServe 2020).

Within the survey areas, toyon chaparral was mapped only in SA2 and appeared to be comprised of toyon encroaching into grassland. This community is dominated by scattered toyon with low cover in a grassland matrix of slender wild oats*, false brome*, rattlesnake grass*, brome fescue*, and soft chess*. This community is considered disturbed within the survey due to a high cover of non-native species because the understory is dominated by non-native grassland.

Prunus ilicifolia Shrubland Alliance (Holly-leaf cherry chaparral)

As described (CNPS 2020b), holly-leaf cherry (*Prunus ilicifolia*) is dominant or co-dominant in the shrub canopy with other native shrub species. Emergent trees may be present at low cover. Shrubs are generally less than 49.2 feet (15 meters) in height with an open to continuous canopy. Herbaceous layer is sparse to continuous (Sawyer et al. 2009). According to membership rules,

holly-leaf cherry must be greater than 30% relative cover in the shrub canopy with species such as toyon as co-dominants; or holly-leaf cherry is greater than 50% relative cover in the shrub canopy. Habitat for this vegetation community in California includes slopes that are often steep and north-facing with soils derived from bedrock or colluvium.

Toyon chaparral is considered of high inventory priority as it has a Subnational Conservation Rank of S3, indicating it is "Vulnerable" and at moderate risk of extinction or elimination due to a restricted range, relatively few populations, recent and widespread declines, or other factors (NatureServe 2020).

Within the survey areas, this plant community is uncommon and is present in only one location in SA2 on a rocky outcrop. This community is dominated by holly-leaf cherry with poison oak, bush monkeyflower, toyon, and California sagebrush in the shrub layer. Herbaceous species include soap root, naked buckwheat (*Eriogonum nudum* var. *nudum*), purple false brome*, hummingbird sage, and California bee plant, among others. This community is considered intact within the survey due to a high cover of native species.

Salix lasiolepis Shrubland Alliance (Arroyo willow thickets)

As described (CNPS 2020b), arroyo willow (*Salix lasiolepis*) is dominant or co-dominant in the tall shrub or low tree canopy with mugwort (*Artemisia douglasiana*), coyote brush, mule fat (*Baccharis salicifolia*), California rose (*Rosa californica*), California blackberry, and other shrubs. As a shrubland, emergent trees may be present at low cover. Plants are less than 30 feet (10 meters) in height, the canopy is open to continuous. The herbaceous layer is variable. The membership rules are arroyo willow is greater than 50% relative cover in the shrub or tree canopy and at least 25% absolute cover in the shrub or tree canopy. Within California, arroyo willow thickets alliance inhabits stream banks and benches, slope seeps, and stringers along drainages. It occurs from 0-7,100 feet (0-2,170 meters) in elevation.

This community is restricted to the southern portion of SA2 at the base of the slope where a drainage flows into the valley bottom. It is dominated by arroyo willow in the shrub layer with poison oak and toyon present in very low cover. The herbaceous layer is very sparse and consists of Italian thistle*, rattlesnake grass*, slender wild oats*, and bitter lettuce (*Lactuca virosa**) among others. This community had a thick layer of litter under the canopy. This community is considered intact within the survey area.

Toxicodendron diversilobum Shrubland Alliance (Poison oak scrub)

As described (CNPS 2020b), poison oak is dominant in the shrub canopy with California sagebrush, coyote brush, bush monkeyflower, and other shrubs. Emergent trees may be present at low cover, including California black walnut (*Juglans hindsii*) or coast live oak. Shrubs are less than 13 feet (4 meters) in height, the canopy is intermittent to continuous and two-tiered. The herbaceous layer is variable. The membership rules are poison oak is greater than 50% relative cover in the shrub canopy. Within California, poison oak scrub is present on the immediate coast in mesic hollows receiving salt-laden fog to interior sheltered mesic and disturbed dry slopes. It occurs from 0-2,350 feet (0-720 meters) in elevation.

Poison oak scrub was mapped in both SA1 and SA2. It is dominated by poison oak with coyote brush, toyon, and French broom* present in the shrub layer in low cover. Herbaceous species

include rattlesnake grass*, Italian thistle*, slender wild oats*, California bee plant, California melic (*Melica californica*), and ripgut brome*, among others. This vegetation community within the survey area is characterized by largely impenetrable thickets with generally low species richness and few grassy openings. Within the survey areas, this vegetation community is considered intact as it is dominated by native species in the shrub layer.

Tree Dominated Types

Aesculus californica Woodland Alliance (California buckeye groves)

As described (CNPS 2020b), California buckeye is dominant or co-dominant in the tree canopy. Shrubs are common in the shrub layer. Trees are less than 32.8 feet (10 meters) in height. Herbaceous layers tend to be sparse or grassy (Sawyer et al. 2009). According to membership rules, California buckeye must be greater than 50-60% relative cover or conspicuous in the tree canopy. Habitat for this vegetation community in California includes varied slopes and topographies where soils is shallow and moderately to excessively drained.

California buckeye groves is considered of high inventory priority as it has a Subnational Conservation Rank of S3, indicating it is "Vulnerable" and at moderate risk of extinction or elimination due to a restricted range, relatively few populations, recent and widespread declines, or other factors (NatureServe 2020).

Within the survey area, California buckeye groves are restricted to SA2 in the bottom of a drainage. Small, multi-stemmed California buckeyes are dominant in the tree canopy. Coyote brush and poison oak are present in the shrub layer, while the herbaceous layer is comprised of California bee plant, Italian thistle*, bracken fern, rattlesnake grass*, and ripgut brome*, among others. Within the survey area, this community is considered intact due to a high level of native integrity and dominance by native species in the tree and shrub layer.

Eucalyptus spp. Woodland Semi-Natural Alliance (Eucalyptus groves)

As described (CNPS 2020b), eucalyptus groves are described as eucalyptus [less than 165 feet (50 meters) tall] being dominant in the tree canopy. The canopy is in intermittent to continuous and the shrub layer and herbaceous layer is sparse to intermittent. The membership rules for this alliance require eucalyptus to be is greater than 80% relative cover in the tree layer. It has been planted as trees, groves, and windbreaks; and is naturalized on uplands and stream courses (Sawyer et al. 2009). It occurs from 0-6,200 feet (0-1,900 meters) elevation.

Within the survey areas, this vegetation type is restricted to the western boundary of SA1 adjacent to a residential neighborhood. It consists of mostly smaller (less than10" dbh) blue gum (*Eucalyptus globulus*) trees with few larger trees scattered throughout. No other species are present in the tree canopy. The shrub layer is dominated Scotch broom (*Cytisus scoparius**) with coyote brush, poison oak, and toyon present in lower cover. The herbaceous layer is sparse with slender wild oats*, creeping wildrye, ripgut brome*, and English*, among others. Within the survey area, this community is considered disturbed due to the dominance by non-native species in the tree, shrub, and herbaceous layers.

***Quercus agrifolia* Woodland and Forest Alliance (Coast live oak woodland and forest)**

As described (CNPS 2020b), coast live oak is dominant or co-dominant in the tree canopy with big leaf maple, boxelder (*Acer negundo*), California buckeye (*Aesculus californica*), madrone (*Arbutus menziesii*), California black walnut (*Juglans californica*), Coulter pine (*Pinus coulteri*), California sycamore, Fremont's cottonwood, blue oak (*Quercus douglasii*), Engelmann oak (*Quercus engelmannii*), black oak (*Quercus kelloggii*), valley oak, island live oak (*Quercus tomentella*), red willow, and/or California bay. Trees are less than 100 feet (30 meters) tall in height and the canopy is open to continuous. Shrub layer is sparse to intermittent. The herbaceous layer is sparse or grassy. The membership rules in the MCV are coast live oak is greater than 50% relative cover in the tree canopy. If California bay is present it must be less than 33% relative cover, otherwise the stand is placed in the California bay forest Alliance. Within California, coast live oak woodland inhabits alluvial terraces, canyon bottoms, stream banks, slopes, and flats. It occurs from 0-3,900 feet (0-1,200 meters) in elevation.

Coast live oak woodland and forest is present in the northern section of SA1. It is dominated by coast live oak in the tree canopy, with sparse shrub cover consisting of bush monkeyflower, coyote brush, and poison oak. The herbaceous layer is sparse and comprised of rattlesnake grass*, goldback fern (*Pentagramma triangularis*), brome fescue*, and hair grass*, among others. Within the survey area, this community is considered intact due to the dominance in the tree canopy and shrub layer by native species.

3.1.2 PHYSICAL FEATURES

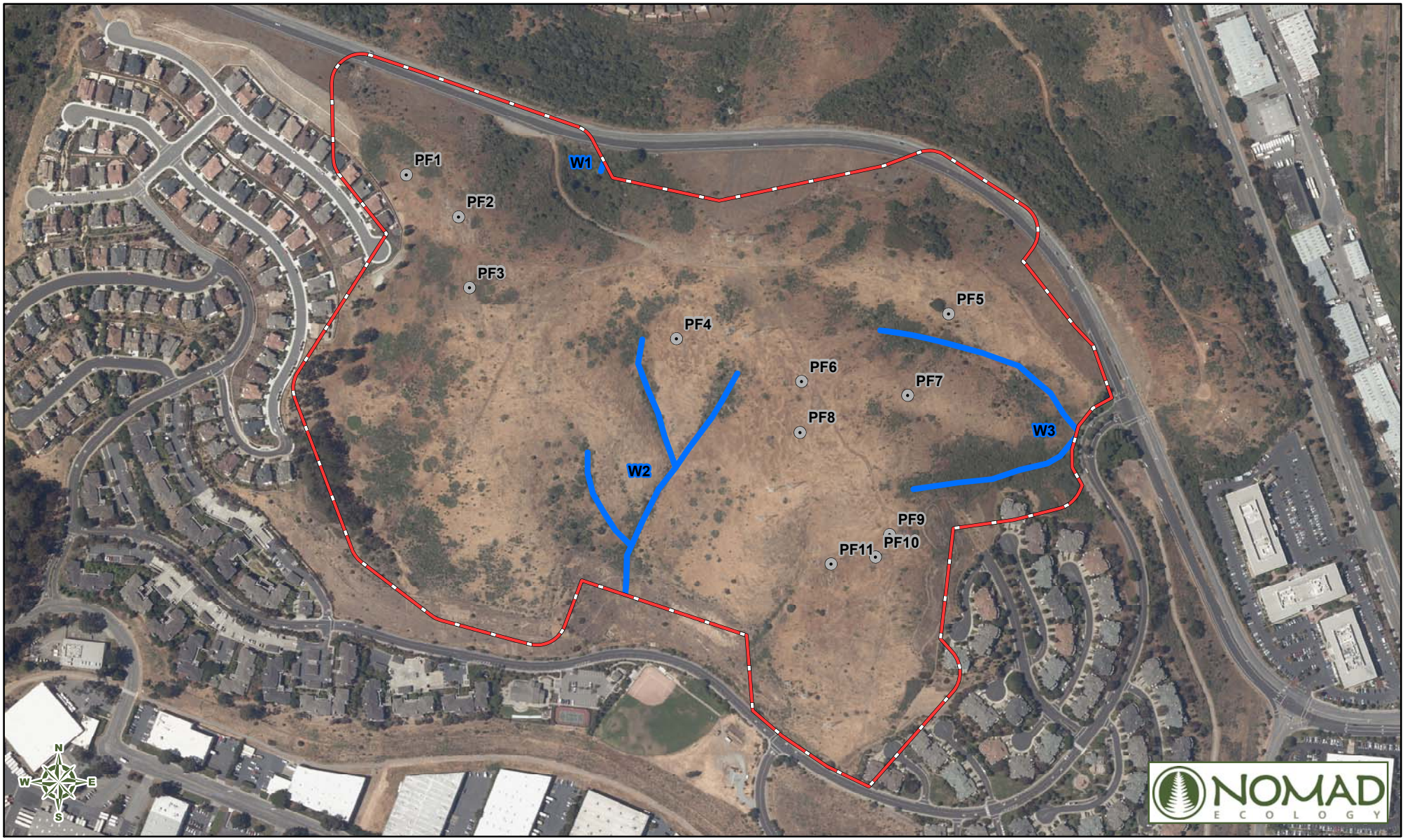
Several rock outcrop physical features were observed in the survey areas (Table 3 and Figure 4).

Table 3. Physical Features

MAP KEY	LOCATION	PHYSICAL FEATURE	COMMENTS
PF1-PF11	SA1	Rock outcrop	Suitable roosting habitat for pallid bat and fringed myotis.
PF12-PF24	SA2	Rock outcrop	Suitable roosting habitat for pallid bat and fringed myotis.

3.1.3 WATERS AND WETLANDS

A formal wetland delineation was not conducted as part of the surveys. However, seven streams were identified in the SMCPD GIS database (Table 4) which may qualify as Waters of the U.S. or State regulated by the regulatory agencies. Several mapped plant communities within the Survey Areas may also qualify as wetlands (Table 4). All of the mapped streams and other potential wetlands were dry at the time of the site visits and appear to be ephemeral or seasonal in nature and fed by precipitation and natural runoff.



December 2020 Biological Resource Assessment

Legend
Survey Area
SA1
Physical Features - PF
Rock Outcrops
Wetlands and Riparian Zones
Riverine - W*

No wetlands were observed in SA1.
*As shown in the San Mateo County Parks Department GIS Biology Map Packet.

1:5,400
0 225 450
Feet

Figure 4A
Wetlands, Waters and Physical Features
San Bruno Mountain Cattle Grazing Pilot Program
San Mateo County Parks

Source: USGS Ortho Aerial Imagery, San Mateo County, California 2018

San Mateo County, California

December 2020

Biological Resource Assessment

Legend

Survey Area

SA2

Physical Features - PF

Rock Outcrops

Wetlands and Riparian Zones

Riverine - W*

No wetlands were observed in SA1.
*As shown in the San Mateo County Parks Department GIS Biology Map Packet.

1:5,400
0 225 450
Feet

Figure 4B

Wetlands, Waters and Physical Features

San Bruno Mountain Cattle Grazing Pilot Program

San Mateo County Parks

Source: USGS Ortho Aerial Imagery, San Mateo County, California 2018

San Mateo County, California

Table 4. Waters and Wetlands

Map Key	Wetland Type	Wetland Name	Wetland Status	Wetland Size (Acre)[1]	Hydrologic Status	Primary Water Source	Distance From Project	Comments
W1	Stream/drainage	Unnamed	Unknown	0.019	Dry during site visits	Natural runoff	In SA1	Is not a tributary to any named stream. On a northeast facing slope. Flows downhill to Guadalupe Canyon Parkway. Presumably drains east into the Brisbane Lagoon or the San Francisco Bay.
W2	Stream/drainage	Unnamed	Unknown	0.755	Dry during site visits	Natural runoff	In SA1	Is not a tributary to any named stream. On a south facing slope. Flows downhill to Mission Blue Drive. Presumably drains east into the Brisbane Lagoon or the San Francisco Bay.
W3	Stream/drainage	Unnamed	Unknown	0.618	Dry during site visits	Natural runoff	In SA1	Is not a tributary to any named stream. On a south facing slope. Flows downhill to Mission Blue Drive. Presumably drains east into the Brisbane Lagoon or the San Francisco Bay.
W4	Stream/drainage	Unnamed	Unknown	0.185	Dry during site visits	Natural runoff	In SA2	Is not a tributary to any named stream. On a southeast facing slope. Flows downhill to Basyshore Blvd. Presumably drains east the San Francisco Bay.
W5	Stream/drainage	Unnamed	Unknown	0.143	Dry during site visits	Natural runoff	In SA2	Is not a tributary to any named stream. On a southeast facing slope. Flows downhill to Basyshore Blvd. Presumably drains east the San Francisco Bay.
W6	Stream/drainage	Unnamed	Unknown	1.336	Dry during site visits	Natural runoff	In SA2	Is not a tributary to any named stream. On a southeast facing slope. Flows downhill to Basyshore Blvd. Presumably drains east the San Francisco Bay.
W7	Stream/drainage	Unnamed	Unknown	1.080	Dry during site visits	Natural runoff	In SA2	Is not a tributary to any named stream. On a southeast facing slope. Flows downhill to Basyshore Blvd. Presumably drains east the San Francisco Bay.
W8	Stream/drainage	Unnamed	Unknown	1.043	Dry during site visits	Natural runoff	In SA2	Is not a tributary to any named stream. On a southeast facing slope. Flows downhill to Basyshore Blvd. Presumably drains east the San Francisco Bay.

Map Key	Wetland Type	Wetland Name	Wetland Status	Wetland Size (Acre)[1]	Hydrologic Status	Primary Water Source	Distance From Project	Comments
W9	*Juncus mexicanus* Herbaceous Association (Mexican Rush Marshes)	Unnamed. Associated with W6.	Unknown	0.116	Dry during site visits	Natural runoff	In SA2	Mexican rush marsh on banks and in channel of W5.
W10	*Salix lasiolepis* Shrubland Alliance (Arroyo Willow Thickets)	Unnamed	Unknown	0.192	Dry during site visits	Natural runoff	In SA2	Arroyo willow thicket on banks above channel of W3.
W11	*Elymus triticoides* Herbaceous Association (Creeping Wildrye Grassland)	Unnamed	Unknown	0.868	Dry during site visits	Natural runoff	In SA2	Creeping wildrye turf in level area between W3 and W4 where water may pond.
W12	*Elymus triticoides* Herbaceous Association (Creeping Wildrye Grassland)	Unnamed. Associated with W6	Unknown	1.638	Dry during site visits	Natural runoff	In SA2	Creeping wildrye turf in flat valley bottom where channel of W5 becomes unpronounced and water may pond.
W13	*Juncus mexicanus* Herbaceous Association (Mexican Rush Marshes)	Unnamed. Associated with W6	Unknown	0.121	Dry during site visits	Natural runoff	In SA2	Mexican rush marsh in flat valley bottom where channel of W5 becomes unpronounced and water may pond.
W14	*Salix lasiolepis* Shrubland Alliance (Arroyo Willow Thickets)	Unnamed. Associated with W4, W5, W6	Unknown	1.243	Dry during site visits	Natural runoff	In SA2	Arroyo willow thicket on banks above channel where W3, W4, and W5 become unpronounced and water may pond.

[1] Acreage of stream/drainage features was calculated using the County GIS shapefile. Acreage of potential wetland vegetation communities was calculated using GIS to determine the entire area of the mapped vegetation polygon.

3.2. SPECIES

3.2.1 OBSERVED SPECIES

During the site visits, two California Rare Plant Rank species: San Francisco wallflower (*Erysimum franciscanum*, CRPR 4.2) and Scouler's catchfly (*Silene scouleri* subsp. *scouleri*, CRPR 2B.2) were observed in the survey areas. Approximately 100 plant species were recorded in the survey areas during vegetation mapping surveys. Of these, 40% were non-native species (Appendix B). A total of 25 species are listed as invasive by the California Invasive Plant Council (Cal-IPC) and/or the California Department of Food and Agriculture (CDFA). Floristic surveys were not completed for the site, therefore the plant list is not considered complete.

During the August 6, 2020 site visit, no special status wildlife species were observed. A total of ten wildlife species were observed in the survey areas (Appendix B).

3.2.2 PROTECTED TREES

The San Mateo County Heritage Tree Ordinance (SMC Section 13.52.020), defines a heritage tree as:

> Any bay (*Umbellularia californica*), buckeye (*Aesculus* spp.), oak (*Quercus* spp.), cedar (*Cedrus*) or redwood (*Sequoia*) tree that has a diameter of ten (10) inches or more measured at forty-eight (48) inches above natural grade;
> (2) Any tree or stand of trees designated by resolution of the City Council to be of special historical value or of significant community benefit;
> (3) A stand of trees, the nature of which makes each dependent on the others for survival;
> (4) Any other tree with a trunk diameter of sixteen (16) inches or more, measured at forty-eight (48) inches above natural grade.

The San Mateo County Heritage Tree Ordinance (SMC Section 12,012), defines a significant tree as:

> Any live woody plant rising above the ground with a single stem or trunk of a circumference of thirty-eight inches (38") or more measured at four and one half feet (4 1/2') vertically above the ground or immediately below the lowest branch, whichever is lower, and having the inherent capacity of naturally producing one main axis continuing to grow more vigorously than the lateral axes

Because the project does not involve removal of any trees, protected or heritage trees were not identified or mapped within the survey areas.

3.2.3 SPECIAL STATUS PLANT SPECIES

Special status plant species were observed and other species have a moderate or high potential to occur within the survey areas. A total of 93 special status plant species are known to occur in the

project vicinity.[1] Based on habitats within the survey areas, a review of available databases and literature (USFWS 1999; CDFW 2020b,d,e; CNPS, 2001, 2020a; CCH 2020; Baldwin et al. 2012), and familiarity with the regional flora, 36 species were considered as part of this assessment. Two California Rare Plant Rank species: San Francisco wallflower (*Erysimum franciscanum*, CRPR 4.2) and Scouler's catchfly (*Silene scouleri* subsp. *scouleri*, CRPR 2B.2) were observed in the survey areas.

Twenty special status plant species were considered to have the potential to occur within the survey areas. Of these, three species were determined to have high potential to occur, four species were determined to have a moderate potential to occur, and thirteen species were determined to have a low potential to occur within the grazing pilot areas.

A list of species considered as part of this assessment, their regulatory status, habitat requirements, habitat suitability, local distribution, and potential for occurrence are listed in Table 5. Special status plant species recorded in the project vicinity from the CNDDB are depicted in Figure 5. Special status plant species known to occur on San Bruno Mountain in the vicinity of the survey areas (based on San Mateo County GIS data) are shown in Figure 6. A list of special status species with CNDDB occurrences within five miles of the survey areas (CDFW 2020b) are included in Appendix C.

Federal and/or State Listed and California Rare Species

Of the 93 special status plant species known from the vicinity, 8 are federal and/or state listed. Based on field investigations, review of available databases and literature, familiarity with local flora, on site habitat suitability, and results of field studies in 2020, a total of 3 of these 8 federal and/or state listed species were determined to have a potential to occur within the survey areas. While potentially suitable vegetation associations were present for these 3 species, they were determined to have a low potential to occur due to lack of preferred substrates, local extirpations, and/or familiarity with regional flora. The remaining 5 taxa were ruled out based on lack of suitable habitat, lack of preferred substrates, or local extirpations. No federal and/or state listed plant species were observed during the 2020 site visits.

California Rare Plant Rank Species

Of the 93 special status plant species known from the vicinity, all 93 are included in the California Native Plant Society Rare Plant Inventory (2020). Based on habitats within the survey areas, a review of available databases and literature (USFWS 1999; CDFW 2020b,d,e; CNPS, 2001, 2020a; CCH 2020; Baldwin et al. 2012), and familiarity with the regional flora, 36 species were included as part of this assessment. Of these 36 California Rare Plant Rank species, two were observed within the study areas and twenty were considered to have the potential to occur within the survey areas.

Two California Rare Plant Rank species - San Francisco wallflower (*Erysimum franciscanum*, CRPR 4.2) and Scouler's catchfly (*Silene scouleri* subsp. *scouleri*, CRPR 2B.2) - were observed

[1] Vicinity is defined as the area included within the seven U.S. Geological Survey (USGS) 7.5-minute topographic quadrangles that are centered on the survey area, including Point Bonita, San Francisco North, San Francisco South, Oakland West, Hunters Point, Montara Mountain, and San Mateo.

in the survey areas. Three individuals of Scouler's catchfly were observed on a rocky outcrop in the northwest portion of SA1. A total of 73 individuals of San Francisco wallflower were observed in the northern portion of SA2 near the ridge top.

Three species - San Francisco collinsia (*Collinsia multicolor*, CRPR 1B.2), San Francisco gumplant (*Grindelia hirsutula* subsp. *maritima*, CRPR 3.2) and coast iris (*Iris longipetala*, CRPR 4.2) - were determined to have a high potential to occur within the survey areas. San Francisco collinsia has a high potential due to presence of preferred vegetation associations and suitable substrates, as well as the presence of a CNDDB occurrences in SA2.

San Francisco gumplant (with possible hybrids) was mapped on San Bruno Mountain in at least seventeen locations where anywhere between one and tens of plants were observed (Naumovich and Niederer 2016). These plants were well distributed on SBM and often were not simple to identify (Naumovich and Niederer 2016). Several occurrences were shown on maps as occurring in SA2 (Naumovich and Niederer 2016). During Nomad's surveys in 2020, the gumweed species *Grindelia hirsutula* was observed. These plants were determined to not be the rare variety *Grindelia hirsutula* var. *maritima* due to their hairy involucres, hairy and recurved phyllaries, and fruit characteristics. Nomad botanists have observed *Grindelia hirsutula* var. *maritima* on the SFPUC Peninsula Watershed, and the San Bruno Mountain *Grindelia* in the survey areas have morphology consistent with the common *G. hirsutula*.

Coast iris was mapped on San Bruno Mountain in at least 41 locations and it is likely that the San Bruno Mountain population is between 2,000 and 5,000 plants (Naumovich and Niederer 2016). Several occurrences are shown on maps as occurring in both SA1 and SA2 (Naumovich and Niederer 2016). During Nomad's surveys in 2020, numerous individuals of the genus *Iris* were observed in both SA1 and SA2. The *Iris* individuals in SA1 and SA2 did not present diagnostic features of *I. longipetala*, i.e. a two lobed stigma. Instead the stigma of these individuals was triangular, although they did present crenate edges which Munz (1968) includes in its treatment of *I. longipetala*. Due to the presence of both triangular shaped stigmas with crenate edges, the individuals in the study areas were determined to be hybrids between Douglas iris (*Iris douglasiana*) and coast iris.

Four California Rare Plant Rank species were determined to have a moderate potential to occur within the survey area due to presence of preferred vegetation associations and suitable substrates (Table 5). Thirteen California Rare Plant Rank species were considered to have a low potential to occur within the survey area due to lack of preferred substrates, lack of preferred microhabitat, local extirpations, and/or our familiarity with regional flora (Table 5). The other species were ruled out entirely.

Table 5. Observed and Potentially Occurring Special Status Plant Species[1]

Survey/ Source	Scientific Name	Common Name	Species Status[2]	Potential to Occur	Habitat Requirements	Adequate Habitat Onsite	Adequate Habitat Present	Acreage Impacted	Comments
Federal/State Listed, Proposed, Candidate and/or Fully Protected Species									
CNDDB	*Arctostaphylos imbricata*	San Bruno manzanita	SE, CRPR 1B.1	Absent, would have been observed.	Chaparral, coastal prairie, coastal scrub, and ultramafic.	Suitable vegetation associations occur onsite.	Yes	N/A	The nearest occurrence (EONDX #220222) is a non-specific area .45 miles to west of SA2 reported in 1981. This species was mapped on SBM near the summit primarily in the Devil's Arroyo management unit during 2015 rare plant surveys (Naumovich and Niederer 2016). This species was not observed in SA1 or SA2 during 2020 surveys.
CNDDB	*Arctostaphylos pacifica*	Pacific manzanita	SE, CRPR 1B.2	Absent, would have been observed.	Chaparral and coastal scrub.	Suitable vegetation associations occur onsite. Species not observed during 2019 survey.	Yes	N/A	The nearest occurrence (EONDX #3253) is a non-specific area 0.9 southwest of the survey area reported in 2007. This species was mapped in one location on SBM near Pacific Rock during 2015 rare plant surveys (Naumovich and Niederer 2016). This species was not observed in SA1 or SA2 during 2020 surveys.
CNDDB	*Chorizanthe robusta* var. *robusta*	robust spineflower	FE, CRPR 1B.1	None	Broadleaved upland forest, coastal bluff scrub, and coastal dunes.	No. Suitable habitat not present.	N/A	N/A	The nearest occurrence (EONDX #30377) is a specific point 2.6 miles southwest of the Northeast Ridge Grazing Pilot Area 3.15 miles west of the survey area reported in 1913. This species was not observed in SA1 or SA2 during 2020 surveys.
CNDDB	*Lessingia germanorum*	San Francisco lessingia	FE, SE, CRPR 1B.1	None	Coastal scrub.	No. Suitable habitat not present.	N/A	N/A	The nearest occurrence (EONDX #55) is a specific point 2.0 miles west northwest of SA1 reported in 1999. The one known population was located and mapped during the Creekside 2015 surveys (Naumovich and Niederer 2016). The plants were restricted to loose sandy soils. This species was not observed in SA1 or SA2 during 2020 surveys.

Survey/ Source	Scientific Name	Common Name	Species Status[2]	Potential to Occur	Habitat Requirements	Adequate Habitat Onsite	Adequate Habitat Present	Acreage Impacted	Comments
CNDDB	*Pentachaeta bellidiflora*	white-rayed pentachaeta	FE, SE, CRPR 1B.1	Low	Ultramafic, valley, and foothill grassland.	Although potentially suitable vegetation associations occur onsite, preferred substrates are absent. Historical records of this species outside of the Woodside quadrangle have been lost to development.	Yes	TBD	The nearest occurrence (EONDX #16681) is a non-specific area <0.1 miles north of SA2. This record is undated. White-rayed pentachaeta was not found during the 2015 surveys (Naumovich and Niederer 2016). This species was not observed in SA1 or SA2 during 2020 surveys.
CNDDB	*Plagiobothrys diffusus*	San Francisco popcornflo-wer	SE, CRPR 1B.1	Low	Coastal prairie, and valley and foothill grassland.	Potentially suitable vegetation associations occur onsite.	Yes	TBD	The nearest occurrence (EONDX #45398) is a specific point 14.8 miles east-northeast of SA1reported in 1997. This species was not observed in SA1 or SA2 during 2020 surveys.
CNDDB	*Suaeda californica*	California seablite	FE, CRPR 1B.1	None	Freshwater marsh, marsh/swamp, and wetland.	No. Suitable habitat not present.	N/A	N/A	The nearest occurrence (EONDX #5295) is a non-specific area 10.1 miles east of SA2 reported in 1943. This species was not observed in SA1 or SA2 during 2020 surveys.
CNDDB	*Trifolium amoenum*	two-fork clover	FE, CRPR 1B.1	Low	Coastal bluff scrub and, ultramafic, valley, and foothill grassland.	Although suitable vegetation associations are present, this species primarily occurs on moist, heavy soils which are absent in the survey area.	Yes	TBD	The nearest occurrence (EONDX #84559) is a specific point 2.6 miles west of the survey area reported in 1907. This species was not observed in SA1 or SA2 during 2020 surveys.
Sensitive and Locally Rare Species									
CNDDB	*Amsinckia lunaris*	bent-flowered fiddleneck	CRPR 1B.1	Moderate	Chaparral, and ultramafic, valley, and foothill grassland.	Potentially suitable vegetation associations occur onsite.	Yes	TBD	The nearest occurrence (EONDX #49038) is a non-specific area 1.25 miles west of SA1 reported in 1963. This species was not observed on SBM during 2015 rare plant surveys (Naumovich and Niederer 2016). This species was not observed in SA1 or SA2 during 2020 surveys.

Survey/ Source	Scientific Name	Common Name	Species Status[2]	Potential to Occur	Habitat Requirements	Adequate Habitat Onsite	Adequate Habitat Present	Acreage Impacted	Comments
CNDDB	*Arabis blepharophylla*	coast rockcress	CRPR 4.3	Moderate	Broadleafed upland forest, Coastal bluff scrub, Coastal prairie, Coastal scrub.	Potentially suitable vegetation associations occur onsite.	Yes	TBD	This species was mapped in 17 locations on SBM during 2015 rare plant surveys (Naumovich and Niederer 2016). This species was not observed in SA1 or SA2 during 2020 surveys.
CNDDB	*Arctostaphylos montaraensis*	Montara manzanita	CRPR 1B.2	Absent, would have been observed.	Chaparral and coastal scrub.	Suitable vegetation associations occur onsite.	Yes	N/A	The nearest occurrence (EONDX #220208) is a specific point 0.9 southwest of SA1 reported in 2010. This species was mapped on SBM near the summit in the Devil's Arroyo management unit during 2015 rare plant surveys (Naumovich and Niederer 2016). This species was not observed in SA1 or SA2 during 2020 surveys.
CNDDB	*Calochortus umbellatus*	Oakland star tulip	CRPR 4.2	None	Broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, and valley and foothill grassland.	Although stuiable vegetation associations are present this species is not known to occur in this part of San Mateo County.	Yes	N/A	This species was not observed in SA1 or SA2 during 2020 surveys.
CCNDDB	*Carex comosa*	bristly sedge	CRPR 2B.1	None	Coastal prairie, marshes and swamps (lake margins), valley and foothill grassland.	No suitable ponded water or tidal habitat present in the survey areas.	Yes	N/A	The nearest occurrence (EONDX #67429) is a non-specific area 4 miles north-northwest of SA1 reported in 1866. This species was not observed in SA1 or SA2 during 2020 surveys.
CNDDB	*Carex praticola*	northern meadow sedge	CRPR 2B.2	None	Meadows and seeps (mesic).	Although vegetation associations occur in the survey areas, this species has not been vouchered from San Mateo County and the single observation from La Honda is questionable and likely a mis-identification for this species that occurs at higher elevations.	Yes	N/A	The nearest occurrence (EONDX #99855) is a non-specific area approximately 12 miles north of the Northeast Ridge Grazing Pilot Area reported in 1967. This species was not observed in SA1 or SA2 during 2020 surveys.

Survey/ Source	Scientific Name	Common Name	Species Status[2]	Potential to Occur	Habitat Requirements	Adequate Habitat Onsite	Adequate Habitat Present	Acreage Impacted	Comments
CNDDB	*Castilleja ambigua* var. *ambigua*	johnny-nip	CRPR 4.2	None	Coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, valley and foothill grassland, and vernal pools margins.	Although suitable vegetation associations occur onsite this species occurs on the margins of tidal habitats.	Yes	N/A	This species was not observed in SA1 or SA2 during 2020 surveys.
CNDDB	*Chorizanthe cuspidata* var. *cuspidata*	San Francisco Bay spineflower	CRPR 1B.2	None	Coastal bluff scrub, coastal dunes, coastal prairie, and coastal scrub.	No. Suitable habitat not present.	N/A	N/A	The nearest occurrence (EONDX #56) is a specific point 2.0 miles west of SA1 reported in 1992. This species was mapped in the Daly City Dunes and adjacent sandy areas during 2015 rare plant surveys (Naumovich and Niederer 2016). This species was not observed in SA1 or SA2 during 2020 surveys.
CNDDB	*Collinsia multicolor*	San Francisco collinsia	CRPR 1B.2	High	Closed-cone coniferous forest, and coastal scrub.	Potentially suitable vegetation associations occur onsite.	Yes	TBD	The nearest occurrence (EONDX #56889) is a non-specific area within SA2 reported in 1988. Two occurrences of this plant were located on SBM 2015 rare plant surveys (Naumovich and Niederer 2016). This species was not observed in SA1 or SA2 during 2020 surveys.
CNDDB	*Dirca occidentalis*	western leatherwood	CRPR 1B.2	Low	Broadleafed upland forest, Closed-cone coniferous forest, Chaparral, Cismontane woodland, North Coast coniferous forest, Riparian forest, Riparian woodland.	Potentially suitable vegetation associations occur onsite.	Yes	TBD	The nearest occurrence (EONDX # 51525) is a specific point 4.5 miles southwest of SA2 reported in 2016. This species was not observed in SA1 or SA2 during 2020 surveys.
CNDDB	*Erysimum franciscanum*	San Francisco wallflower	CRPR 4.2	**Observed**	Chaparral, coastal dunes, coastal scrub, and valley and foothill grassland.	Suitable habitat is present.	Yes	TBD	This species is known to occur north of SA2 on north facing slopes above Brisbane. It is well distributed on SBM (Naumovich and Niederer 2016). This species was observed in SA2 along the Ridge Trail and just downslope during 2020 surveys. Approximately 74 individuals were counted and mapped.
CNDDB	*Fritillaria liliacea*	fragrant fritillary	CRPR 1B.2	Low	Cismontane woodland, coastal prairie, coastal scrub, and ultramafic, valley and foothill grassland.	Although potentially suitable vegetation associations occur onsite, preferred substrates are absent.	Yes	TBD	The nearest occurrence (EONDX #6264) is a non-specific area 8.2 miles south of SA2 reported in 1931. This species was not observed in SA1 or SA2 during 2020 surveys.

Survey/ Source	Scientific Name	Common Name	Species Status[2]	Potential to Occur	Habitat Requirements	Adequate Habitat Onsite	Adequate Habitat Present	Acreage Impacted	Comments
CNDDB	*Gilia millefoliata*	dark eyed gilia	CRPR 1B.2	None	Stabilized coastal dunes.	No. Suitable habitat not present.	N/A	N/A	The nearest CNDDB occurrence (EONDX #102965) is a non-specific area 1.26 miles west of SA1 reported in 1903. This species was not observed in SA1 or SA2 during 2020 surveys.
CNDDB	*Grindelia hirsutula* subsp. *maritima*	San Francisco gumplant	CRPR 3.2	High	Coastal bluff scrub, coastal scrub, and ultramafic, valley, and foothill grassland.	Suitable habitat is present.	Yes	TBD	The nearest occurrence (EONDX #16948) is a non-specific area 1.25 miles west of SA1 reported in 1961. San Francisco gumplant (with possible hybrids) was mapped in at least 17 locations where anywhere between 1 and tens of plants were observed (Naumovich and Niederer 2016). These plants were well distributed on SBM and often were not simple to identify (Naumovich and Niederer 2016). Several occurrences were mapped in SA2 (Naumovich and Niederer 2016). This species was not observed in SA1 or SA2 during 2020 surveys. During surveys in 2020, Nomad botanists observed patches of the common gumweed species *Grindelia hirsutula.*
CNDDB	*Helianthella castanea*	Diablo helianthella	CRPR 1B.2	Moderate	Broadleaved upland forest, chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland.	Potentially suitable vegetation associations occur onsite.	Yes	TBD	The nearest occurrence (EONDX #368) is a specific point ~0.15 miles northwest of the survey area reported in 2012. This species was observed during Creekside 2015 surveys in 4 distinct areas on north facing slopes (Naumovich and Niederer 2016). This species was not observed in SA1 or SA2 during 2020 surveys.
CNDDB	*Hemizonia congesta* subsp. *congesta*	congested-headed tarplant	CRPR 1B.2	Low	Valley and foothill grassland.	Although potentially suitable vegetation associations occur onsite, this species is known in San Mateo county from a single collection in 1909 which has probably been extirpated due to development.	Yes	TBD	The nearest occurrence (EONDX #73833) is a non-specific area 2.75 miles southwest of the survey area reported in 1909. This species was not observed in SA1 or SA2 during 2020 surveys.

Survey/ Source	Scientific Name	Common Name	Species Status[2]	Potential to Occur	Habitat Requirements	Adequate Habitat Onsite	Adequate Habitat Present	Acreage Impacted	Comments
CNDDB	*Hesperevax sparsiflora* var. *brevifolia*	short-leaved evax	CRPR 1B.2	None	Coastal bluff scrub, coastal dunes, and coastal prairie.	No. Suitable habitat not present.	N/A	N/A	The nearest occurrence (EONDX #60194) is a non-specific area 2 miles north-northwest of the survey area. This species was not observed in SA1 or SA2 during 2020 surveys.
CNDDB	*Horkelia cuneata* var. *sericea*	Kellog's horkelia	CRPR 1B.1	Low	Chaparral, closed-cone coniferous forest, coastal dunes, and coastal scrub.	Although potentially suitable vegetation associations occur onsite, preferred substrates are absent.	Yes	TBD	The nearest occurrence (EONDX #2578) is a non-specific area 2.16 miles west of SA1 reported in 1989. This species was not observed in SA1 or SA2 during 2020 surveys.
CNDDB	*Horkelia marinensis*	Point Reyes horkelia	CRPR 1B.2	None	Coastal dunes, coastal prairie, and coastal scrub.	No. Suitable habitat not present.	N/A	N/A	The nearest occurrence (EONDX #99735) is a non-specific area 2.5 miles west-southwest of SA1 reported in 1909. This species was not observed in SA1 or SA2 during 2020 surveys.
CNDDB	*Iris longipetala*	coast iris	CRPR 4.2	High	Coastal prairie, lower montane coniferous forest, and meadows and seeps.	Potentially suitable vegetation associations occur onsite.	Yes	TBD	Coast iris was mapped on San Bruno Mountain in at least 41 locations and it is likely that the San Bruno Mountain population is between 2,000 and 5,000 plants (Naumovich and Niederer 2016). Several occurrences were shown on maps as occurring in both SA1 and SA2 (Naumovich and Niederer 2016). During Nomad's surveys in 2020, numerous individuals for the genus *Iris* were observed in both SA1 and SA2. The Iris individuals in SA1 and SA2 did not present diagnostic features of coast iris, and were determined to be hybrids between Douglas iris (*Iris douglasiana*) and coast iris. This species was not observed in SA1 or SA2 during 2020 surveys.
CNDDB	*Lupinus arboreus* var. *eximius*	San Mateo tree lupine	CRPR 3.2	Low	Chaparral, and coastal scrub.	Potentially suitable vegetation associations occur onsite.	Yes	TBD	This species was not observed in SA1 or SA2 during 2020 surveys.
CNDDB	*Malacothamnus arcuatus*	arcuate bush-mallow	CRPR 1B.2	Moderate	Chaparral, and cismontane woodland.	Potentially suitable vegetation associations occur onsite.	TBD	TBD	The nearest occurrence (EONDX #55935) is a specific point 4.75 miles southwest of SA2 reported in 2000. This species was not observed in SA1 or SA2 during 2020 surveys.

Survey/ Source	Scientific Name	Common Name	Species Status[2]	Potential to Occur	Habitat Requirements	Adequate Habitat Onsite	Adequate Habitat Present	Acreage Impacted	Comments
CNDDB	*Plagiobothrys chorisianus* var. *chorisianus*	Choris' popcorn flower	CRPR 1B.2	Low	Chaparral, coastal prairie, and coastal scrub.	Potentially suitable vegetation associations occur onsite.	Yes	TBD	The nearest occurrence (EONDX #94302) is a specific point 1.0 mile southwest of SA1 survey area reported in 1961. Choris's popcorn flower was not found in 2015 (Naumovich and Niederer 2016). This species was not observed in SA1 or SA2 during 2020 surveys.
CNDDB	*Polemonium carneum*	Oregon polemonium	CRPR 2B.2	Low	Coastal prairie, coastal scrub, and lower montane coniferous forest.	Potentially suitable vegetation associations occur onsite.	Yes	TBD	The nearest occurrence (EONDX #73956) is a non-specific area 8.7 miles south of the Southeast Slope Grazing Area reported in 1916. This species was not observed in SA1 or SA2 during 2020 surveys.
CNDDB	*Senecio aphanactis*	chaparral ragwort	CRPR 2B.2	Low	Chaparral, cismontane woodland, and coastal scrub.	Potentially suitable vegetation associations occur onsite.	Yes	TBD	The nearest occurrence (EONDX #107762) is 12.5 miles south-southeast of SA2 reported in 1973. This species was not observed in SA1 or SA2 during 2020 surveys.
CNDDB	*Silene scouleri* subsp. *scouleri*	Scouler's catchfly	CRPR 2B.2	**Observed**	Coastal bluff scrub, coastal prairie, valley and foothill grassland.	Suitable habitat is present.	Yes	TBD	The nearest occurrence (EONDX #111660) is a non-specific area located within SA2 reported in 1965. This species was mapped in several locations along Ridge Trail in 2015 (Naumovich and Niederer 2016). This species was observed at 37.69694, -122.41602 in SA1.
CNDDB	*Silene verecunda* subsp. *verecunda*	San Francisco campion	CRPR 1B.2	Low	Chaparral, coastal bluff scrub, coastal prairie, coastal scrub, and ultramafic, valley, and foothill grassland.	Although potentially suitable vegetation associations occur onsite, preferred substrates are absent.	Yes	TBD	The nearest occurrence (EONDX #21266) is a specific point 0.17 miles northwest of the survey area reported in 2001. This species was mapped in 2016 south of the Summit parking lot (Naumovich and Niederer 2016). This species was not observed in SA1 or SA2 during 2020 surveys.
CNDDB	*Triphysaria floribunda*	San Francisco owl's clover	CRPR 1B.2	Low	Coastal prairie, coastal scrub, and ultramafic, valley, and foothill grassland.	Although suitable vegetation associations are present, the preferred substrates are absent.	Yes	TBD	The nearest occurrence (EONDX #17744) is a non-specific area 0.67 miles west of the survey area reported in 1963. San Francisco owl's clover was not found during the 2015 surveys (Naumovich and Niederer 2016). This species was not observed in SA1 or SA2 during 2020 surveys.

Survey/ Source	Scientific Name	Common Name	Species Status[2]	Potential to Occur	Habitat Requirements	Adequate Habitat Onsite	Adequate Habitat Present	Acreage Impacted	Comments

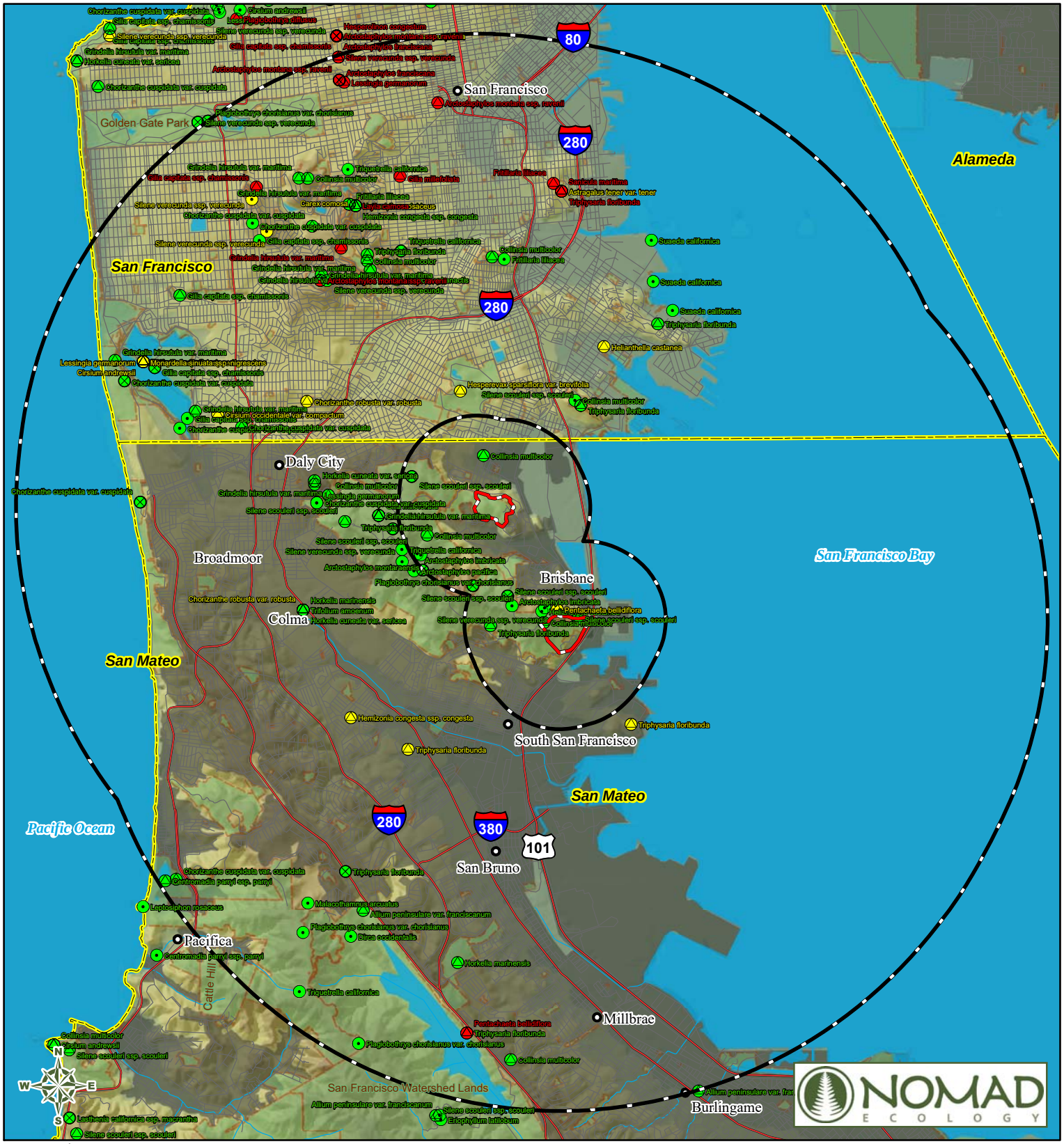
[1]This table includes all special status plants known to occur in the vicinity. Vicinity is defined as the area included within the seven U.S. Geological Survey (USGS) 7.5-minute topographic quadrangles that are centered on the survey area, including Point Bonita, San Francisco North, San Francisco South, Oakland West, Hunters Point, Montara Mountain, and San Mateo.

[2]**Explanation of Listing Codes**

Federal Listing Codes:
FE Federally listed as Endangered

California Listing Codes:
SE State listed as Endangered

CRPR California Native Plant Society Rare Plant Rank Listing Codes:
1B: Plants that are rare, Threatened, or Endangered in California and elsewhere;
2: Plants that are rare, Threatened, or Endangered in California, but are more numerous elsewhere;
4: Plants of limited distribution (a watch list).
.1: Seriously Endangered in California (over 80% of occurrences Threatened / high degree and immediacy of threat)
.2: Fairly Endangered in California (20-80% occurrences Threatened)
.3: Not very Endangered in California (<20% of occurrences Threatened or no current threats known)



December 2020

Biological Resource Assessment

Legend

- Study Area Location
- County Boundaries
- Distance Radii - 1 & 5 Miles
- Public Land and Easements
- Water Bodies
- Waterways

CNDDB Occurences Accuracy

- specific location
- within 0.2 - 5 miles
- non-specific location

CNDDB Occurences Presence

- Presumed Extant
- Possibly Extirpated
- Extirpated

1:110,880

0 0.875 1.75

Miles

Figure 5

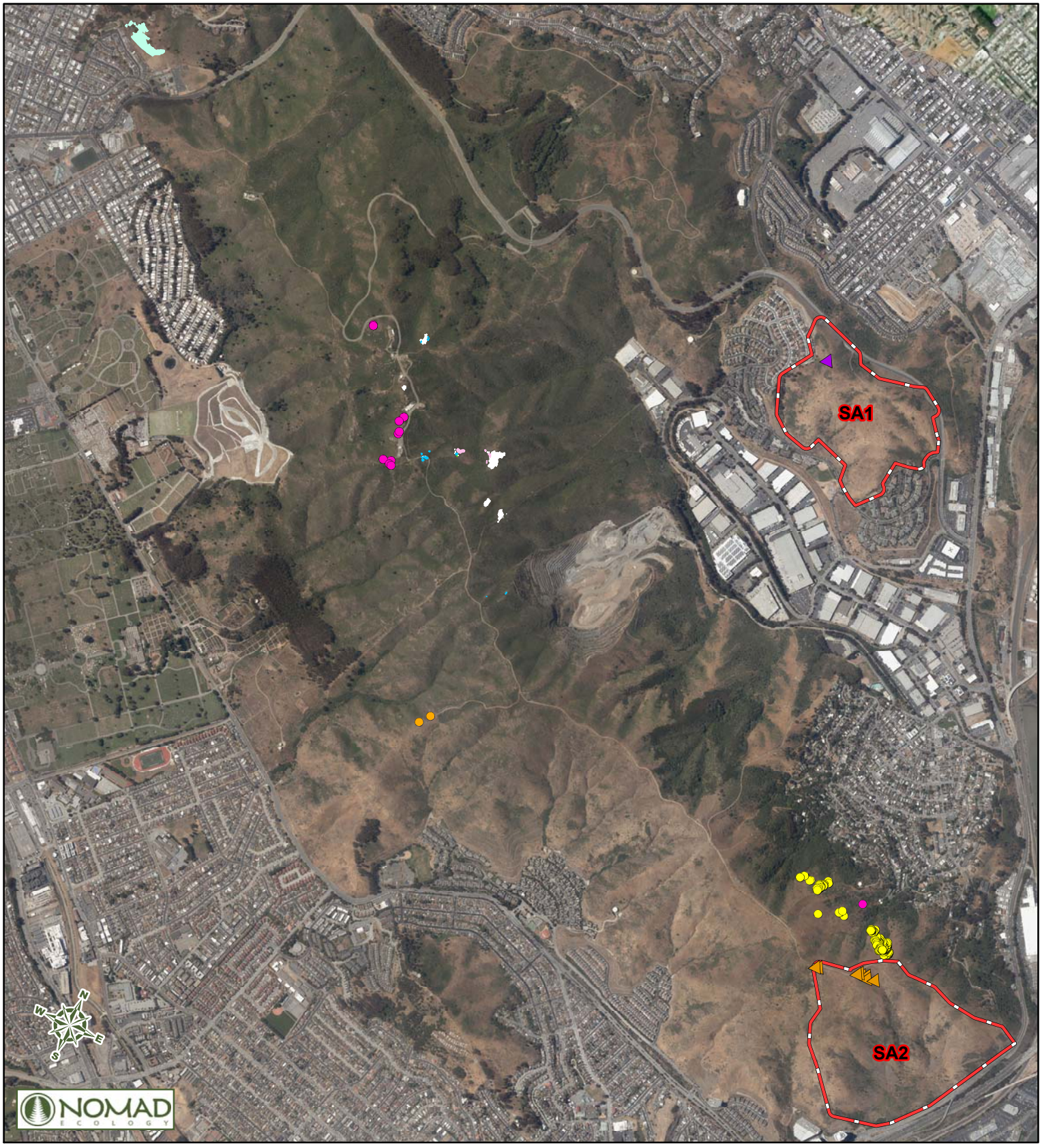
California Natural Diversity Database Special Status Plant Species Occurrences within the Vicinity

San Bruno Mountain Cattle Grazing Pilot Program

San Mateo County Parks

Sources: ESRI, California Spatial Information Library, Bay Area Open Space Council, California Department of Fish and Game.

San Mateo County, California



December 2020

Biological Resource Assessment

Legend

Survey Areas
SA1 & SA2

Rare Plants from 2020 Surveys
Erysimum franciscanum
Silene scouleri var. scouleri

Rare Plant Occurences*
Erysimum franciscanum
Silene verecunda
Helianthella castanea

Arctostaphylos imbricata
Arctostaphylos montaraensis
Arctostaphylos pacifica
Arctostaphylos uva-ursi
Helianthella castanea
Lessingia germanorum

*Known rare plant occurences from San Mateo County Parks Department GIS sources.

1:24,600
0 1,025 2,050
Feet

Figure 6
Rare Plant Occurences on San Bruno Mountain
San Bruno Mountain Cattle Grazing Pilot Program
San Mateo County Parks

Sources: USGS Ortho Aerial Imagery, San Mateo County, California 2018; San Mateo County Parks Department GIS Program

San Mateo County, California

3.2.4 SPECIAL STATUS WILDLIFE SPECIES AND NESTS

Special status wildlife species have been observed and have a moderate to high potential to occur within the survey areas. Habitat suitable for nests of birds protected under the Migratory Bird Treaty Act exists within the survey areas.

Based on the field investigation, review of literature, species lists generated by the databases listed in the methodology section (of species known to occur in the vicinity or that should be considered under Section 7 of the Endangered Species Act[2]), familiarity with local fauna, and on site habitat suitability, a total of 47 special status fish and wildlife species were initially considered as part of this assessment (USFWS 2020; CDFW 2020b). Of these, three species were determined to have high potential to occur, seven species were determined to have a moderate potential to occur, and five species were determined to have a low potential to occur within the grazing pilot areas. The remaining taxa were ruled out based on the lack of suitable habitat, local extirpations, lack of connectivity between areas of suitable and occupied habitat, incompatible land use, and habitat degradation. Table 6 lists information for all special status wildlife species included on the USFWS species list for the project (USFWS 2020a), those with CNDDB occurrences within 5 miles of the survey area (CDFW 2020b), and any other special status wildlife species that were considered to have potential to occur based on range and the presence of suitable habitat. Special status wildlife species recorded in the project vicinity from the CNDDB are depicted in Figure 7. Critical habitat is shown in Figure 8. A list of special status species with CNDDB occurrences within five miles of the survey areas are included in Appendix C.

Several species of marine mammal, sea turtle, anadromous fish, marine invertebrate, and associated critical habitats and Essential Fish Habitats are identified by NOAA Fisheries as having potential to occur within the South San Francisco quad (NOAA Fisheries 2016). Because this project is located well inland and has no coastal elements, species and habitats under NOAA Fisheries jurisdiction have no potential to occur and are not discussed further in this report.

[2] Vicinity is defined as the area included within the seven U.S. Geological Survey (USGS) 7.5-minute topographic quadrangles that are centered on the survey area, including Point Bonita, San Francisco North, San Francisco South, Oakland West, Hunters Point, Montara Mountain, and San Mateo. The species that should be considered under the Section 7 Endangered Species Act are determined by generating an 'Official Species List' on the U.S. Fish and Wildlife Service IPaC online tool ((USFWS 2020a, Appendix D).

Table 6. Observed and Potentially Occurring Special Status Animal Species[1]

Survey/ Source	Scientific Name	Common Name	Species Status[2]	Potential to Occur	Habitat Requirements	Adequate Habitat Onsite	Adequate Habitat Size	Acreage Impacted	Comments
Federal/State Listed, Proposed, Candidate and/or Fully Protected Species									
Invertebrates:									
CNDDB	*Bombus occidentalis*	western bumble bee	SCE	Moderate	Occupies a diverse range of habitats, including mixed woodlands, farmlands, urban areas, montane meadows and into the western edge of the prairie grasslands. Like many bumble bees, it typically nests underground in abandoned rodent burrows or within hollows in decaying wood (COSEWIC 2014).	Yes, suitable habitat present	Yes	TBD	The nearest occurrence (EONDX # 100343) is a specific point ~1.25 miles west of the northeast ridge area near the summit of San Bruno Mountain, recorded in 1968.
CNDDB, SMCPD 2018	*Callophrys mossii bayensis*	San Bruno elfin butterfly	FE, CH Xerces-CI	Moderate	A small brownish butterfly that occurs in the vicinity of its larval host plant the stonecrop (*Sedum spathulifolium*). Flight period is late February to April. Range is restricted to small populations on north facing slopes in the fog belt in the coastal hills of the northern San Francisco Peninsula.	Yes, host plant absent but found nearby.	Yes	TBD	Known population on San Bruno Mountain. Observed at a permanent monitoring plot south and west of the grazing plots along the ridgeline of San Bruno Mountain as recently as 2018 (SMCPD 2018). The nearest occurrence (EONDX #23061) is ~0.6 mile to the southwest of the northeast ridge grazing plot and 0.8 miles west of the southeast slope grazing plot along the ridgeline of San Bruno Mountain, most recently recorded in 2016. Host plant not present, but could occur as a vagrant due to close proximity to suitable habitat on San Bruno Mountain.

Survey/ Source	Scientific Name	Common Name	Species Status[2]	Potential to Occur	Habitat Requirements	Adequate Habitat Onsite	Adequate Habitat Size	Acreage Impacted	Comments
CNDDB, SMCPD 2018	*Euphydryas editha bayensis*	bay checkerspot butterfly	FT, CH, Xerces-CI	High	A California endemic butterfly restricted to serpentine and similar habitats. Host plant is the dwarf plantain (*Plantago erecta*) (Steiner 1990). Secondary host plants include Indian paintbrush (*Castilleja affinis* subsp. *affinis*) and purple owl's clover (*Castilleja exserta* subsp. *exserta*). Restricted to six localities in San Francisco (San Bruno Mountain State & County Park), San Mateo (Edgewood County Park and El Corte de Madera) and Santa Clara (Kirby, Metcalf, San Felipe & Silver Creek Hills) counties (USFWS 1998).	Yes, host plants and nectar plants present.	Yes	TBD	Species was extirpated from San Bruno Mountain sometime after a wildfire in 1986. Several thousand larvae were reintroduced to the ridgeline of San Bruno Mountain annually from 2017 to 2021, and adults were observed during butterfly counts in 2018 and 2019 (SMCPD 2018, Creekside Science 2019). The nearest two CNDDB occurrences (EONDX #22988 and #14464) lie 0.35 miles north and west of SA2. The northern occurrence is centered in an area of dense residential development and is noted as having been extirpated sometime prior to 1980. The western occurrence is a polygon within San Bruno Mountain Park and was extirpated after a fire in 1986. SA2 almost entirely overlaps with designated Critical Habitat. Host and nectar plants are present and this species has a high potential to occur within the survey areas.

Survey/ Source	Scientific Name	Common Name	Species Status[2]	Potential to Occur	Habitat Requirements	Adequate Habitat Onsite	Adequate Habitat Size	Acreage Impacted	Comments
CNDDB, SMCPD 2018	*Icaricia icarioides missionensis*	mission blue butterfly	FE, CH Xerces-CI	High	A small butterfly measuring 1½ inches. The larval host plants include three species of lupine (*Lupinus albifrons*, *L. formosus* and *L. variicolor*). Secondary food plants include bluedicks (*Dichelostemma capitatum*), false goldenaster (*Heterotheca villosa*) and coast buckwheat (*Eriogonum latifolium*). The flight season occurs from March through July. Remaining populations are restricted to Twin Peaks in San Francisco, Fort Baker in Marin County, San Bruno Mountain, and Crystal Springs Watershed in San Mateo County.	Yes, suitable habitat and host plants present.	Yes	TBD	Known population on San Bruno Mountain. Observed during surveys within both of the grazing pilot areas as recently as 2017 (SMCPD 2018). Two CNDDB occurrences overlap with the survey areas. The first CNDDB occurrence (EONDX #23004) is a large polygon roughly encompassing the eastern half of San Bruno Mountain, with the species most recently recorded in 2000. The polygon includes the entire southeast slope grazing pilot area. An additional CNDDB occurrence (EONDX #23005) is a large polygon that encompasses the entire northeast ridge grazing pilot area, from 2004. Host plants are present in both grazing pilot areas.

Survey/ Source	Scientific Name	Common Name	Species Status[2]	Potential to Occur	Habitat Requirements	Adequate Habitat Onsite	Adequate Habitat Size	Acreage Impacted	Comments
CNDDB, SMCPD 2018	*Speyeria callippe callippe*	Callippe silverspot butterfly	FE, Xerces-CI	High	A medium-sized butterfly that is endemic to native grasslands with the host plant Johnny jump-up (*Viola pedunculata*). Violas typically grow on hilltops. The active adult period occurs between May and July. Current distribution is restricted to seven localities in San Mateo, Sonoma, and Alameda Counties.	Yes, suitable habitat and host plants present.	Yes	TBD	Known population on San Bruno Mountain. Observed within both grazing pilot survey areas as recently as 2018 (SMCPD 2018). The nearest CNDDB occurrence (EONDX #14466) is a large polygon roughly encompassing nearly all of San Bruno Mountain, with the species most recently recorded in 2004. The boundary of the polygon overlaps with the northeast slope grazing pilot area. Host plant is present in both grazing pilot areas.
CNDDB	*Speyeria zerene myrtleae*	Myrtle's silverspot butterfly	FE, Xerces-CI	None	This subspecies is restricted to northern Marin and Sonoma Counties. Inhabit coastal dunes, coastal prairies, and coastal grasslands where their host plant, western dog violet (*Viola adunca*) occurs.	No, suitable habitat and host plants absent.	N/A	N/A	There are no occurrences of this species within five miles of the survey area. Survey area is outside of species' known range.
Fish:									
CNDDB	*Eucyclogobius newberryi*	tidewater goby	FE, SSC	None	A California endemic fish that inhabits brackish coastal lagoons, estuaries and marshes. Range extends from the Smith River in Del Norte County to Agua Hedionda Lagoon in San Diego County.	No, no suitable habitat present.	N/A	N/A	There are no occurrences of this species within five miles of the survey area.

Survey/ Source	Scientific Name	Common Name	Species Status[2]	Potential to Occur	Habitat Requirements	Adequate Habitat Onsite	Adequate Habitat Size	Acreage Impacted	Comments
CNDDB	*Hypomesus transpacificus*	delta smelt	FT, SE	None	Inhabits brackish water in the Sacramento-San Joaquin Delta. Known from Sacramento/San Joaquin Delta, Sacramento River as high as the confluence with the Feather River, Mokelumne River, Cache Slough, Montezuma Slough, San Pablo Bay, Suisun Bay, Suisun Marsh, Carquinez Strait, and Napa River and Marsh. Spawns in freshwater habitat from February to August in shallow water areas with submerged aquatic vegetation, suitable substrates and refugia.	No, no suitable habitat present.	N/A	N/A	There are no occurrences of this species within five miles of the survey area.
CNDDB	*Spirinchus thaleichthys*	longfin smelt	FC, ST	None	Longfin smelt generally spawn in freshwater and then move downstream to brackish water to rear. Juvenile and adult longfin smelt have been found throughout the year in salinities ranging from pure freshwater to pure seawater, although once past the juvenile stage, they are typically collected in waters with salinities ranging from 14 to 28 parts per thousand (ppt) (Baxter 1999). The known range of the longfin smelt extends from the San Francisco Bay-Delta in California northward to the Cook Inlet in Alaska.	No, no suitable habitat present.	N/A	N/A	The nearest CNDDB occurrence (EONDX # 90720) is a large polygon encompassing all of San Francisco Bay south of Hunter's Point, with the species most recently recorded in 1995. The boundary of the polygon runs approximately 0.1 mile east of the survey area.

Survey/ Source	Scientific Name	Common Name	Species Status[2]	Potential to Occur	Habitat Requirements	Adequate Habitat Onsite	Adequate Habitat Size	Acreage Impacted	Comments
Amphibians:									
CNDDB	*Rana boylii*	foothill yellow-legged frog	SE	None	A medium-sized frog that inhabits rocky, cascading streams in woodland, chaparral and coniferous forests from the Oregon border to San Luis Obispo County and the western foothills of the Sierra Nevada below 6000 feet.	No, no suitable aquatic habitat present.	N/A	N/A	The nearest occurrence (EONDX #111921) is a historic extirpated occurrence from the San Andreas Lake area, approximately 5 miles south of the survey areas. The state listing status of foothill yellow-legged frog is dependent on the clade it is within. The survey areas are within the west/Central coast clade, which is listed as endangered.
CNDDB	*Rana draytonii*	California red-legged frog	FT, CH, SSC	None	A medium-sized frog that inhabits lowlands & foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation up to 4,921 feet (1,500 meters) in elevation (Jennings and Hayes 1994, Bulger et al. 2003, Stebbins 2003). Range extends from Redding to Baja California. Designated critical habitat encompasses 1,636,609 acres in 20 counties and is grouped into 4 regions: Central Valley, Southern San Joaquin, East Bay and Central Coast (75 FR 12816).	Marginally suitable habitat is present in small wetland areas and ephemeral ravines in the survey areas. Species has never been recorded from the San Bruno Mountain area and is isolated from all other known populations by dense urban development.	N/A	N/A	The nearest occurrence (EONDX #12149) is a specific area ~3 miles south of the survey area reported in multiple years, most recently being 2018. The sightings were made on the San Francisco Airport property between San Antonio Avenue and Hwy 101.

Survey/ Source	Scientific Name	Common Name	Species Status[2]	Potential to Occur	Habitat Requirements	Adequate Habitat Onsite	Adequate Habitat Size	Acreage Impacted	Comments
Reptiles:									
CNDDB	*Chelonia mydas*	green sea turtle	FT	None	Occasional visitor to oceanic waters off the California coast.	No, no suitable habitat present.	N/A	N/A	There are no occurrences of this species within five miles of the survey area.
CNDDB	*Thamnophis sirtalis tetrataenia*	San Francisco garter snake	FE, SE, FP	None	A colorful aquatic garter snake endemic to the San Francisco Bay Area. Distributed along the peninsula from the southern San Francisco County border south to Waddell Lagoon south of Año Nuevo. Occurs sympatrically with its primary prey, California red-legged frog. Species may hibernate near coast in fossorial mammal burrows and other refuges or remain active year-round weather permitting.	Species has never been recorded from the San Bruno Mountain area and is isolated from all other known populations by dense urban development.	N/A	TBD	The nearest occurrence (EONDX #93159) was recorded in 1975 in Colma Creek, approximately 0.5 miles south of the survey area. This occurrence is centered in an area of dense urbanization and is noted as having been extirpated.
Birds:									
CNDDB	*Brachyrhamphus marmoratus*	marbled murrelet	FT, SE	None	A small coastal seabird that nests in coastal trees in mature/old-growth coniferous forests. Also nests on coastal cliffs or on the ground under vegetation. Breeding begins in April (Baicich & Harrison 2005).	No, no suitable habitat present.	N/A	TBD	There are no occurrences of this species within five miles of the survey area.
CNDDB	*Charadrius alexandrinus nivosus*	western snowy plover	FT, SSC	None	Inhabits beaches, mud flats, estuaries, salt evaporation ponds and inland river channels with banks for foraging. Breeds on sandy beaches, dunes, levees, river banks and dry salt evaporation beds along the California coastline typically in areas with minimal human disturbance.	No, no suitable habitat present.	N/A	TBD	There are no occurrences of this species within five miles of the survey area.

Survey/ Source	Scientific Name	Common Name	Species Status[2]	Potential to Occur	Habitat Requirements	Adequate Habitat Onsite	Adequate Habitat Size	Acreage Impacted	Comments
CNDDB	*Elanus leucurus*	white-tailed kite	FP	Low	Inhabits grasslands, agriculture fields, oak woodlands, savannah and riparian habitats. Substantial groves of dense, broad-leafed deciduous trees used for nesting and roosting (Laudenslayer et al. 1990). Forages in undisturbed, open grasslands, meadows, farmlands and emergent wetlands (Laudenslayer et al. 1990). Feeds primarily on California voles. Year-round resident of Central and Coastal California. Breeding begins in February; sometimes double-brooded (Baicich & Harrison 2005).	Yes. Marginal nesting habitat is present in trees on-site.	Yes	TBD	There are no CNDDB occurrences of this species within five miles of the survey area. Species is routinely observed on San Bruno Mountain and the surrounding region (eBird 2020). May nest in the survey areas in trees, or forage in open grassland areas. Grazing pilot areas do not provide dense, broad-leafed deciduous trees,
CNDDB	*Falco peregrinus anatum*	American peregrine falcon	FP, BCC	None	Typically a year-round resident in California and most common along the coast. Nests on cliffs, but frequently uses man-made structures such as bridges and buildings. Nests are generally located close to water bodies with abundant avian prey. Breeding begins in March; single-brooded (Baicich & Harrison 2005).	No suitable nesting habitat present, no large water bodies with abundant avian prey for foraging.	N/A	N/A	Observed occasionally on San Bruno Mountain (eBird 2020), which are likely overhead flights. CDFW protects nests of these species, and due to the lack of nesting habitat in the survey areas it is not expected to occur. The nearest occurrence (EONDX #102400) is a large approximately eight-mile diameter polygon that overlaps with the survey areas. The occurrence was for a nest that was located in a hanger in 2014.

Survey/ Source	Scientific Name	Common Name	Species Status[2]	Potential to Occur	Habitat Requirements	Adequate Habitat Onsite	Adequate Habitat Size	Acreage Impacted	Comments
CNDDB	*Laterallus jamaicensis coturniculus*	California black rail	FP, ST, BCC	None	Smallest of the rails; inhabits tidal marshes, freshwater wetlands and marshes. Wintering habitat similar to breeding habitat. A year-round resident of the San Francisco Bay Area. Breeding begins in March; sometimes double-brooded (Baicich & Harrison 2005).	No, no suitable habitat present	N/A	N/A	The nearest occurrence (EONDX #30369) is from Lake Merced in 1939, approximately five miles northwest of the survey areas.
CNDDB	*Phoebastria albatrus*	short-tailed albatross	FE, SSC	None	Rare visitor to oceanic waters off the California coast. Breeds on small islands in Japan.	No, no suitable habitat present.	N/A	N/A	There are no occurrences of this species within five miles of the survey area.
CNDDB	Rallus obsoletus	Ridgway's rail	FE, SE, FP	None	Restricted to the San Francisco Bay Area. Inhabits coastal wetlands dominated by pickleweed (*Salicornia* spp.) and cordgrass (*Spartina* spp.). Wintering habitat similar to breeding habitat. Breeding begins in March; single-brooded (Baicich & Harrison 2005).	No, no suitable habitat present.	N/A	N/A	The nearest occurrence (EONDX #25847) is a non-specific point approximately 0.3 miles southeast in the salt marshes near San Bruno Point recorded in 1975.
CNDDB	*Riparia riparia*	bank swallow	ST	None	The majority of the statewide population occurs along natural river banks of the Sacramento and Feather rivers in the Sacramento Valley, and smaller populations have been observed in the Klamath Basin and Modoc County areas in northeastern California. Bank swallows are colonial nesters in lowland river bank habitats and coastal bluffs. Optimal habitat will provide sandy, vertical bluffs or riverbanks for constructing nest burrows.	No, no suitable habitat present	N/A	N/A	The nearest known occurrences are a historic extirpated occurrence from lake Merced (EONDX #30371) and an active colony at Fort Funston, just west of Lake Merced most recently noted as present in 2012 (EONDX #12980). These occurrence are located approximately 5 miles northwest of the survey areas.

Survey/ Source	Scientific Name	Common Name	Species Status[2]	Potential to Occur	Habitat Requirements	Adequate Habitat Onsite	Adequate Habitat Size	Acreage Impacted	Comments
CNDDB	*Sternula antillarum browni*	California least tern	FE, SE, FP	None	Breeds in colonies on bare soil, sand and mudflats along the California coast and the San Francisco Bay Area. Winters south to Mexico. Breeding begins in May; single-brooded (Baicich & Harrison 2005).	No, no suitable habitat present.	N/A	N/A	There are no occurrences of this species within five miles of the survey area.
MAMMALS:									
CNDDB	*Enhydra lutris nereis*	southern sea otter	FT, FP	None	Nearshore habitats with 2 kilometers of the coast. Range from San Mateo to Santa Barabara County.	No, no suitable habitat present.	N/A	N/A	There are no occurrences of this species within five miles of the survey area.
CNDDB	Reithrodontomys raviventris	salt marsh harvest mouse	FE, SE, FP	None	A small endemic, pickleweed (*Salicornia* spp.) obligate species of tidal marshes of the San Francisco Bay Area. Requires adjacent upland tidal zones for escape cover during floods. Two recognized subspecies, *R. r. halicoetes* that inhabits San Pablo and Suisun bays *and R. r. raviventris* that inhabits the South San Francisco Bay including Corte Madera and Richmond marshes.	No, no suitable habitat present.	N/A	N/A	There are no occurrences of this species within five miles of the survey area.
SENSITIVE AND LOCALLY RARE SPECIES									
INVERTEBRATES:									
CNDDB	*Adela oplerella*	Opler's longhorn moth	SA	None	Habitat consists of serpentine grassland. Larval food plant is *Platystemon californicus*.	No, no suitable habitat or host plants are present.	N/A	N/A	Nearest occurrence is from a collection made in 1909 from Lake Merced area, approximately 4 miles north west of the survey areas (EONDX #88089).

Survey/ Source	Scientific Name	Common Name	Species Status[2]	Potential to Occur	Habitat Requirements	Adequate Habitat Onsite	Adequate Habitat Size	Acreage Impacted	Comments
CNDDB	*Banksula incredula*	incredible harvestman	SA	None	Inhabits Franciscan sandstone talus slopes in dense chaparral canopy. Restricted to one type locality on the north slope of San Bruno Mountain ridge. Only one of its genus not found in caves (Shanks, CDFW, date unknown).	No, no suitable habitat present.	N/A	N/A	The nearest occurrence (EONDX #59243) is a specific point ~1 mile south and west of the survey area near the summit of San Bruno Mountain, recorded in 1992.
CNDDB	*Bombus caliginosus*	obscure bumble bee	SA	Moderate	Occurs along the Pacific Coast, from southern California to southern British Columbia, with scattered records from the east side of California's Central Valley.	Yes, suitable habitat present	Yes	TBD	The nearest occurrence (EONDX #97931) is a ~1 miles west of the survey area near the summit of San Bruno Mountain, recorded as recently as 2004.
CNDDB	*Caecidotea tomalensis*	Tomales isopod	SA	None	A freshwater crustacean inhabiting freshwater ponds, marshes and slow-moving streams in Marin, Sonoma, San Francisco, and San Mateo counties.	No, no suitable aquatic habitat present.	N/A	N/A	The nearest occurrence (EONDX #22592) is a specific point ~4 miles southwest in a pond off of Skyline Blvd, recorded in 1984.
CNDDB	*Cicindela hirticollis gravida*	sandy beach tiger beetle	SA	None	Sandy beach habitat	No, no suitable beach habitat	N/A	N/A	There is an extirpated historic occurrence of collections between 1906 and 1922 in the general location of San Francisco (EONDX #60075).
CNDDB	*Danaus plexippus* (overwintering)	monarch butterfly	SA	None	Along the California Coast, overwintering roosts typically occur in wind-protected groves of eucalyptus, pine and cypress trees within 1 km of the coast. The winter migratory lifespan reaches >9 months and adults return to northern habitats in spring.	No, no wind-protected large tree groves present	N/A	N/A	There are no occurrences of this species within five miles of the survey area.

Survey/ Source	Scientific Name	Common Name	Species Status[2]	Potential to Occur	Habitat Requirements	Adequate Habitat Onsite	Adequate Habitat Size	Acreage Impacted	Comments
CNDDB	*Dufourea stagei*	Stage's dufourine bee	SA	Moderate	A solitary ground-nesting bee in coastal scrub habitat presumed to be endemic to the San Francisco and San Mateo counties. Range is from San Bruno Mountain, south to Santa Cruz Mountains area.	Yes, coastal scrub habitat present.	Yes	TBD	The nearest CNDDB occurrence (EONDX #59985) is a large polygon roughly encompassing nearly all of San Bruno Mountain, with the species only recorded from collections in 1961 and 1962. The boundary of the polygon includes both grazing pilot areas. Little is known of this species' specific life history and habitat needs. Could occur in coastal scrub habitat onsite.
CNDDB	*Hydroporus leechi*	Leech's skyline diving beetle	SA	None	Little information is available about the species' life history, habitat requirements and distribution. Initially known from a single location near Pacifica, San Mateo County; recent study has found species to be more widespread. Inhabits freshwater ponds.	No, no freshwater ponds present.	N/A	N/A	The nearest occurrence (EONDX #60343) is located ~4 miles southwest, dating back to 1988.
CNDDB	*Ischnura gemina*	San Francisco forktail damselfly	SA	None	A damselfly endemic to Marin, San Francisco and San Mateo counties. Inhabits marshes, ponds and ditches with emergent and/or floating vegetation.	No, no suitable freshwater emergent habitat present.	N/A	N/A	The nearest occurrence (EONDX #60808) is a located ~0.5 mile northwest of the northeast slope grazing pilot area, dating back to 1978.
CNDDB	*Lichnanthe ursina*	bumblebee scarab beetle	SA	None	Occurs in sand dunes.	No, no sand dune habitat present	N/A	N/A	The nearest CNDDB occurrence is from the sand dunes at Salada Beach approximately 5 miles northwest of the survey areas with an unknown collection date (EONDX #29043).

Survey/ Source	Scientific Name	Common Name	Species Status[2]	Potential to Occur	Habitat Requirements	Adequate Habitat Onsite	Adequate Habitat Size	Acreage Impacted	Comments
CNDDB	*Trachusa gummifera*	San Francisco Bay Area leaf-cutter bee	SA	Moderate	Habitat requirements poorly understood. Related species nest in the ground, lining brood chambers with cuttings from plants in the buckthorn family (Rhamnaceae) (Michener 1941).	Yes	Yes	TBD	The nearest occurrence (EONDX #59993) is from a specimen collected in 1957, with only "San Francisco" given for locality information. The point is centered on San Francisco and given a 5-mile error radius, that encompasses the northeast slope grazing pilot area. Little is known of this species' specific life history and habitat needs. Could occur in the survey areas.
FISH:									
CNDDB	*Mylopharodon conocephalus*	hardhead	SSC	None	A cyprinid fish native to California resembling the Sacramento pikeminnow. This species' range extends from the Kern River to the Pit River. Hardhead are typically found in small to large streams in a low to mid-elevation environment. Hardhead may also inhabit lakes or reservoirs.	No, no suitable habitat present.	N/A	N/A	The nearest occurrence (EONDX #75965) is from Lake Merced in 1989, approximately 5 miles northwest of the survey areas.

Survey/ Source	Scientific Name	Common Name	Species Status[2]	Potential to Occur	Habitat Requirements	Adequate Habitat Onsite	Adequate Habitat Size	Acreage Impacted	Comments
Reptiles:									
CNNDB	*Actinemys marmorata*	western pond turtle	SSC	None	A moderate sized freshwater turtle that inhabits permanent or nearly permanent bodies of water and low gradient slow moving streams below 6,000 feet elevation. Range extends from Washington to the northern Bay Area counties along the Pacific slope drainages. Two recognized subspecies the northwestern pond turtle (*E. m. marmorata*) which ranges north of the American River and the southwestern pond turtle (*E. m. pallida*) which ranges from the coastal areas south of San Francisco. Subspecies interbreed within the gradation zone that defines the two subspecies.	No, no suitable aquatic habitat in the survey areas.	N/A	N/A	The nearest occurrence (EONDX #44254) is from Lake Merced approximately five miles northwest of the survey areas.
Birds:									
CNDDB	*Accipiter cooperii*	Cooper's hawk (nesting)	WL	Low	Inhabits dense stands of oak woodlands, riparian deciduous forests, or other forest habitats often near water and suburban areas. Hunts in broken woodlands and along forest edges. Breeding begins in April; single-brooded (Baicich & Harrison 2005).	Yes. Nesting habitat is present in large trees on-site.	Yes	N/A	There are no CNDDB occurrences of this species within five miles of the survey area. Species is routinely observed on San Bruno Mountain and the surrounding region (eBird 2020). May nest in the survey areas in larger trees.

Survey/ Source	Scientific Name	Common Name	Species Status[2]	Potential to Occur	Habitat Requirements	Adequate Habitat Onsite	Adequate Habitat Size	Acreage Impacted	Comments
CNDDB	*Circus hudsonius*	northern harrier	SSC	Moderate	Inhabits both freshwater and saltwater marshes and adjacent upland grasslands. Nests on the ground in tall grasses in grasslands and meadows. Breeding begins in March; single-brooded (Baicich & Harrison 2005).	Yes. Foraging habitat only.	Yes	N/A	There are no CNDDB occurrences of this species within five miles of the survey area. Species is routinely observed on San Bruno Mountain and the surrounding region (eBird 2020). May forage in open grassy areas of the site. No potential to nest in the survey areas.
CNDDB	*Geothlypis trichas sinuosa*	saltmarsh common yellowthroat	SSC, BCC	None	Year-round resident of the San Francisco Bay Area. Inhabits dense vegetation in wetlands, marshes, estuaries, prairies and riparian areas of San Francisco and San Pablo bays, and along the coastal areas of Marin, San Francisco, and San Mateo counties (Shuford and Gardali 2008). Breeds from mid-March to late July; double-brooded (Baicich & Harrison 2005, Shuford and Gardali 2008).	No, no suitable habitat present.	N/A.	N/A	The nearest occurrence (EONDX #59842) islocated ~4.2 miles southwest of the survey areas recorded in 2001 north of San Andreas Reservoir.
CNDDB	*Melospiza melodia pusillula*	Alameda song sparrow	SSC, BCC	None	One of four subspecies in the San Francisco Bay Area. Endemic to the southern San Francisco Bay tidal marshlands. Breeding begins in April; often triple-brooded (Baicich & Harrison 2005).	No, no suitable tidal marshland habitat is present in the survey areas.	N/A	N/A	The nearest occurrence (EONDX #60969) is located~0,6 mile southwest of the survey areas dating back to 1940. Observed near Colma Creek.

Survey/ Source	Scientific Name	Common Name	Species Status[2]	Potential to Occur	Habitat Requirements	Adequate Habitat Onsite	Adequate Habitat Size	Acreage Impacted	Comments
CNDDB	*Phalacrocorax auritus*	double-crested cormorant (rookery site)	WL	None	Rookery sites are located near large water bodies and on small islands, shorelines, and cliff ledges. Nest consists of a structure of twigs and plant material in a tree or tall manmade structures. Breeding begins in early March to mid-June; single-brooded (Baicich & Harrison 2005).	No, no suitable habitat.	N/A	N/A	The nearest occurrence (EONDX #44265) is from Lake Merced rookery approximately 5 miles northwest of the survey areas.
MAMMALS:									
CNDDB	*Antrozous pallidus*	pallid bat	SSC, WBWG-H	Low	Inhabits rocky terrain in open areas in lowlands, foothills and mountainous areas near water throughout California below 2,000 meters. Roosts in caves, rock crevices, mines, trees (e.g., in cavities or under exfoliating bark), buildings and bridges in arid regions in low numbers (< 200). Active from March-November; migrates in some areas, but may hibernate locally.	Yes, marginal roosting habitat present onsite in larger trees and rock crevices.	Yes	TBD	The nearest occurrence (EONDX # 66767) is a non-specific point ~4 miles south recorded in 1947.
CNDDB	*Corynorhinus townsendii*	Townsend's big-eared bat	SSC, WBWG-H	Low	Typically roosts in caves and mines, but it has also been reported to roost in buildings, bridges, very large rock crevices and hollow trees (Sherwin and Piaggio 2005). Occurs throughout the west in a wide variety of habitat types (Sherwin and Piaggio 2005). Exhibits high site fidelity and is highly sensitive to disturbance. Forages along edge habitats near water; may travel long distances during foraging bouts.	Yes. May forage onsite. No suitable roosting habitat in the survey areas.	Yes	TBD	The nearest occurrence (EONDX #93556) was recorded in 2005 at Twin Peaks, ~4 miles north.

Survey/ Source	Scientific Name	Common Name	Species Status[2]	Potential to Occur	Habitat Requirements	Adequate Habitat Onsite	Adequate Habitat Size	Acreage Impacted	Comments
CNDDB	*Erethizon dorsatum*	North American porcupine	SA	None	Range throughout the Sierra Nevada Mountains and Coast Ranges, generally in forested habitats.	No, no suitable habitat present.	N/A	N/A	The nearest occurrence (EONDX #107902) was recorded in 1972 ~3 miles west, along Skyline Boulevard. Highly anomalous occurrence centered in an area that is now densely urbanized and unlikely to support the species.
CNDDB	*Lasiurus cinereus*	hoary bat	SA, WBWG-M	Moderate	Ubiquitous throughout California. Roosts solitarily in foliage. Prefers evergreens, but will use deciduous trees in forested habitats, particularly in edge habitat (Bolster 2020). May forage in small to large groups. Feeds primarily on moths, but will eat a variety of other insects. Migrates great distances.	Yes. Suitable roosting habitat present in trees throughout the site. May forage anywhere in the survey areas.	Yes	TBD	The nearest occurrences (EONDX #68872 and s#68882) are located ~1.4 miles west, and 1.8 miles miles south recorded in 1969 and 1990, respectively.
CNDDB	*Myotis thysanodes*	fringed myotis	WBWG-H	Low	Exhibits a strong roosting preference for large trees and snags, but will use buildings, caves, rock crevices, etc. if necessary. Inhabits a variety of woodland, scrub and grassland habitats up to 2,850 meters throughout California except for Central Valley and southern deserts. Forages great distances and is active during winter months. Highly sensitive to human disturbance.	Yes, potential roosting habitat present in rock crevices but preferred vegetation types not present.	Yes	TBD	The nearest occurrence (EONDX #68551) is located ~4.2 miles southwest between Crystal Springs reservoir and Skyline Blvd.

Survey/ Source	Scientific Name	Common Name	Species Status[2]	Potential to Occur	Habitat Requirements	Adequate Habitat Onsite	Adequate Habitat Size	Acreage Impacted	Comments

[1]This table includes all special status animals known to occur in the vicinity and that should be considered under the Section 7 Endangered Species Act. Vicinity is defined as the area included within the seven U.S. Geological Survey (USGS) 7.5-minute topographic quadrangles that are centered on the survey area, including Point Bonita, San Francisco North, San Francisco South, Oakland West, Hunters Point, Montara Mountain, and San Mateo. The species that should be considered under the Section 7 Endangered Species Act are determined by generating an 'Official Species List' on the U.S. Fish and Wildlife Service IPaC online tool ((USFWS 2020a, Appendix D)

[2]Explanation of State and Federal Listing Codes

Federal Listing Codes:

FE	Federally listed as Endangered
FT	Federally listed as Threatened
FPE	Federally proposed for listing as Endangered
FPT	Federally proposed for listing as Threatened
FPD	Federally proposed for delisting
FC	Federal candidate species
SC	Species of Concern (NOAA Fisheries only)
CH	Critical Habitat (Proposed or Final) is designated

California Listing Codes:

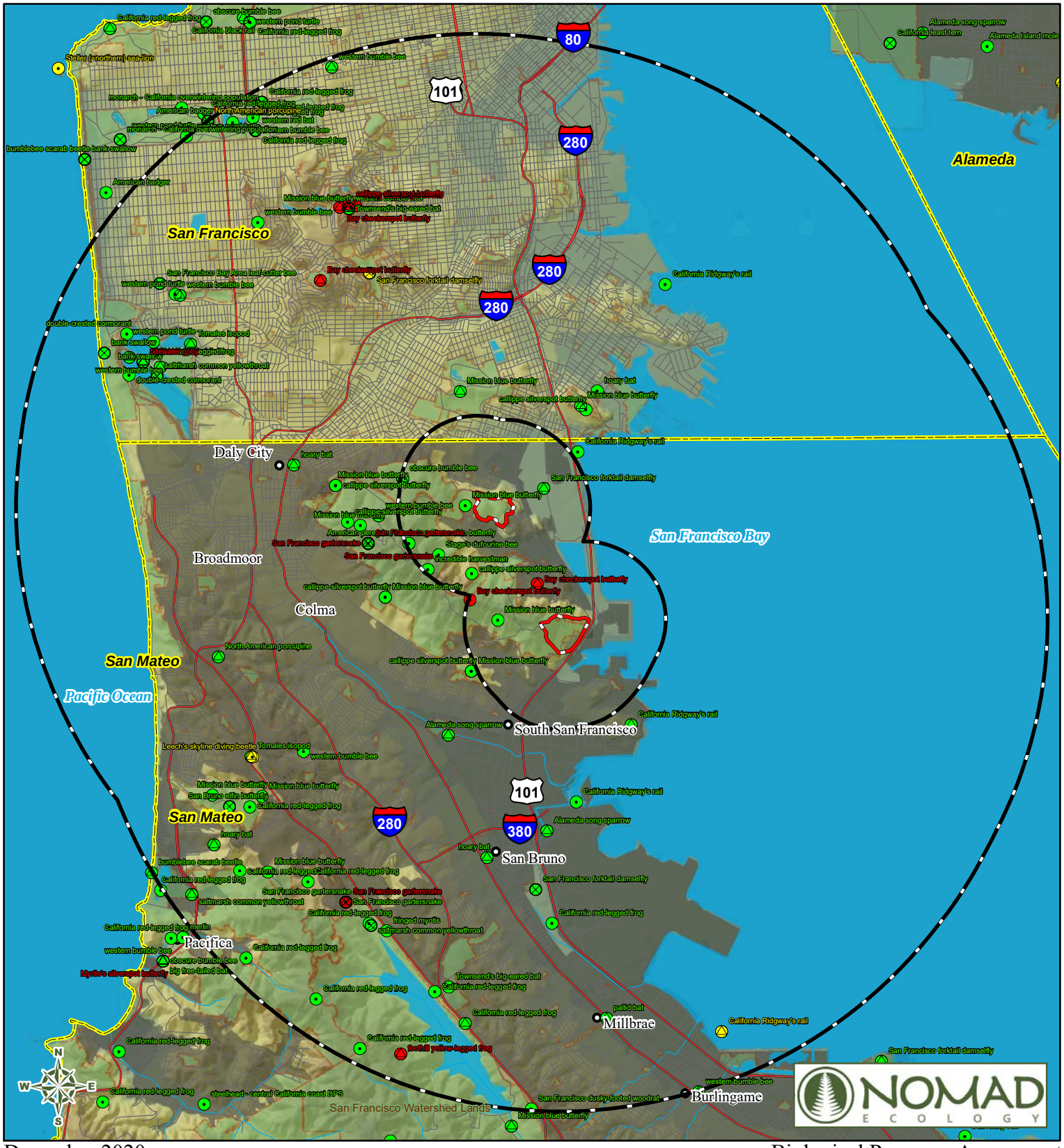
SE	State listed as Endangered
ST	State listed as Threatened
SCE	State candidate for listing as Endangered
SCT	State candidate for listing as Threatened
SCD	State candidate for delisting
SSC	California Species of Special Concern
FP	Fully Protected
WL	Watch List

Other Listing Codes:

BCC U.S. Fish and Wildlife Service Birds of Conservation Concern. List of migratory and nonmigratory bird species (beyond those already designated as federally threatened or endangered) that represent the Service's highest conservation priorities. SA "Special Animals" is a general term that refers to all of the taxa the CNDDB is interested in tracking, regardless of their legal or protection status. This list is also referred to as the list of "species at risk" or "special status species". The Department of Fish and Wildlife considers the taxa on this list to be those of greatest conservation need.

WBWG Western Bat Working Group: H – High Priority indicates species that are imperiled or are at high risk of imperilment based on available information on distribution, status, ecology and known threats; M – Medium Priority indicates a lack of information to assess the species' status; L – Low Priority indicates relatively stable populations based on available data. The WBWG also uses intermediary designations including MH – Medium-High and LM – Low-Medium priorities.

Xerces Xerces Society for Invertebrate Conservation. Red List identifies endangered, threatened or at-risk pollinator species. PE – Possibly Extinct indicates species only known from historical occurrences; CI – Critically Imperiled indicates species at very high risk of extinction; I – Imperiled indicates species at high risk of extinction; V – Vulnerable indicates species at moderate risk of extinction; DD – Data Deficient indicates lack of information to sufficiently assess status.



December 2020

Biological Resource Assessment

Legend

- Study Area Location
- County Boundaries
- Distance Radii - 1 & 5 Miles
- Public Land and Easements
- Water Bodies
- Waterways

CNDDB Occurences Accuracy

- specific location
- within 0.2 - 5 miles
- non-specific location

CNDDB Occurences Presence

- Presumed Extant
- Possibly Extirpated
- Extirpated

1:110,880

0 0.875 1.75 Miles

Figure 7

California Natural Diversity Database Special Status Wildlife Species Occurrences within the Vicinity

San Bruno Mountain Cattle Grazing Pilot Program

San Mateo County Parks

Sources: ESRI, California Spatial Information Library, Bay Area Open Space Council, California Department of Fish and Game

San Mateo County, California

December 2020

Biological Resource Assessment

Legend
Survey Area
SA1 & SA2
Bay Checkerspot Butterfly
Critical Habitat Unit 1

1:10,800
0 450 900
Feet

Figure 8

Federally Designated Critical Habitat

San Bruno Mountain Cattle Grazing Pilot Program

San Mateo County Parks

Source: USGS Ortho Aerial Imagery, San Mateo County, California 2018

San Mateo County, California

Invertebrates

San Bruno Mountain HCP-Covered Butterflies

The San Bruno Mountain HCP covers four species of federally-protected butterflies:

- Bay checkerspot (*Euphydryas editha bayensis*)
- Callippe silverspot (*Speyeria callippe callippe*)
- Mission blue (*Icaricia icarioides missionensis*)
- San Bruno elfin (*Callophrys mossii bayensis*)

Bay Checkerspot Butterfly (*Euphydryas editha bayensis*)

The bay checkerspot butterfly is federally listed as threatened and is designated as critically imperiled by the Xerces Society's Red List of Pollinator Insects of North America (CDFW 2020b, USFWS 2020). It is a medium-sized butterfly, with a two inch wingspan, and has a brown base color and distinct red, yellow and white checkered pattern forming rows separated by black bands. The bay checkerspot is a member of the Nymphalidae or brush-footed family.

A California endemic butterfly restricted to open grasslands with serpentine and similar soils supporting larval and adult host plants. Native larval host plants include the dwarf plantain (*Plantago erecta*), owl's clover (*Castilleja densiflora*), purple owl's clover (*Castilleja exserta*), and Indian paintbrush (*Castilleja affinis*). Non-native larval host plants include English plantain*. Species also requires variability in slope and aspect to accommodate favorable feeding conditions and larval development due to variations in weather conditions and plant senescence. The adult flight season generally occurs from late February to early May, lasting approximately 10 days (USFWS 2009). Eggs are laid in small masses numbering up to 250, which are deposited at the base of larval host plants. Eggs hatch in approximately ten days and feed on the host plant for a few weeks prior to entering diapause in nearby soil cracks or under rocks until the following spring (USFWS 2009). Bay checkerspot butterflies are restricted to six locals in San Francisco (San Bruno Mountain State & County Park), San Mateo (Edgewood County Park and El Corte de Madera) and Santa Clara (Kirby, Metcalf, San Felipe & Silver Creek Hills) counties (USFWS 1998). Designated critical habitat encompasses 13 units totaling 18,293 acres in Santa Clara and San Mateo counties (USFWS 2008).

Callippe Silverspot Butterfly (*Speyeria callippe callippe*)

The Callippe silverspot butterfly is federally listed as endangered and is designated as critically imperiled by the Xerces Society's Red List of Pollinator Insects of North America (CDFW 2020b, USFWS 2020). It is a medium-sized butterfly with a wingspan of 2¼ inches in the Nymphalidae or brush-footed family. The dorsal surface of the wings is brown with black spots and lines. The Callippe silverspot is endemic to hilltops in native grasslands in the vicinity of its larval host plant, Johnny-jump-up (*Viola pedunculata*). Adult nectar plants include nonnative species such as Italian thistle (*Carduus pychnocephala*), pin-cushion plant (*Scabiosa purpurea*), and native species such as California buckeye (*Aesculus californica*). Callippe silverspot butterflies are relatively strong flyers that range as far as 0.75 miles between habitat patches (TRA 1982). The adult flight period occurs from May to July. It is restricted to seven locales within Sonoma (near Sears Point and Hiddenbrooke), San Mateo (San Bruno Mountain and Sign

Hill) and Alameda (hills near Pleasanton) counties. No critical habitat is designated for this species.

Mission Blue Butterfly (*Icaricia icarioides missionensis*)

The mission blue butterfly is federally listed as endangered and is designated as critically imperiled by the Xerces Society's Red List of Pollinator Insects of North America (CDFW 2020b, USFWS 2020). It is a small butterfly measuring 1- ½ inches. The adult flight season extends from late March to early July, depending on the location and microclimatic conditions. Females lay eggs throughout the mating flight. Adults do not wander far from lupine (*Lupinus albifrons, L. formosus* and *L. variicolor*), the larval food plant. Adult nectar plants include California Phacelia (*Phacelia californica*), bluedicks (*Dichelostemma capitatum*), hairy goldenaster (*Heterotheca villosa*), coast buckwheat, and a variety of native and nonnative thistles (TRA 1982). Mission blue butterflies are relatively weak flyers and can move approximately 0.25 miles between habitat patches. Remaining populations are restricted to the Marin headlands in Marin County, and Milagra Ridge, San Bruno Mountain and Crystal Springs Watershed in San Mateo County. Critical habitat is not designated for this species.

San Bruno Elfin Butterfly (*Callophrys mossii bayensis*)

The San Bruno elfin butterfly is federally listed as endangered and is designated as critically imperiled by the Xerces Society's Red List of Pollinator Insects of North America (CDFW 2020b, USFWS 2020). It is a small, brownish butterfly with a wingspan of 1 inch belonging to the Lycaenidae family. The primary larval host plant for the San Bruno elfin is broadleaf stonecrop (*Sedum spathulifolium*). Adult nectar plants include bladder parsnip (*Lomatium utriculatum*), hog fennel (*Lomatium dasycarpum*) and Oregon grape (*Berberis pinnata*) San Bruno elfin butterflies are relatively weak flyers, and move less than 0.25 miles between habitat patches. The adult flight period occurs between February and April. San Bruno elfin deposit their eggs on the underside of *S. spathulifolium* and the larvae hatch and begin feeding on its leaves within seven days (USFWS 2010). Beginning in June the larvae enter diapause within the soil and leaf litter around the base of the host plant. Extant populations are restricted to north facing slopes in the fog belt; three locals in San Mateo County (San Bruno Mountain, Montara Mountain and Milagra Ridge), two locals in Marin County (Alpine Lake and Dillon Beach) and one local in Contra Costa County (Mount Diablo). No critical habitat is designated for this species.

Habitat Suitability and Occurrence Data for Butterfly Species

Mission blue, Callippe silverspot, and Bay checkerspot are considered to have a high potential to occur within the survey areas. The San Bruno elfin butterfly is considered to have a moderate potential to occur. Additional information on each species' natural history is included in Table 6.

Mission blue, Callippe silverspot, and San Bruno elfin butterflies all are known to occur on San Bruno Mountain and are monitored annually. Mission blue populations are being monitored during odd years and Callippe silverspot and San Bruno elfin being monitored during even years (SMCPD 2018). Observations of mission blue and Callippe silverspot have regularly been made within both survey areas during annual monitoring and larval plants for both species are present within these areas (SMCPD 2018). The survey areas are located outside of mapped San Bruno

elfin butterfly habitat (SMCPD 2018), however they are likely to occur occasionally in these areas while seeking nectar plants or as a vagrant during the adult flight season.

Although the Bay checkerspot was apparently extirpated from San Bruno Mountain at some point after a wildfire in 1986, they were recently reintroduced to the area and have been observed during butterfly counts in 2018 and 2019 (SMCPD 2018, Creekside Science 2019). The translocations and subsequent observations have occurred along the ridgeline, just west of SA2 (Creekside Science 2019). For this reason, San Bruno Mountain is considered to be occupied by this species. Larval host plants and nectar plants for this species are present within the survey areas. A portion of the survey area is within federally-designated Critical Habitat for the bay checkerspot butterfly. SA2 almost entirely overlaps Critical Habitat Unit 1, totaling 118 acres (Figure 8). This Critical Habitat unit is approximately 775 acres in total, and encompasses much of the eastern portion of San Bruno Mountain (USFWS 2008).

Five native host plant species were observed during the 2020 site visits including silver bush lupine (*Lupinus albifrons* subsp. *collinus*), varied lupine (*Lupinus variicolor*), western lupine (*Lupinus formosus* var. *formosus*), johnny jump-up (*Viola pedunculata*), and California plantain (*Plantago erecta*) (Table 7, Figure 9). Pacific stonecrop was not observed. The non-native host plant English plantain (*Plantago lanceolata**) was not surveyed for or mapped in detail but was observed in abundance in SA1 and in scattered locations in SA2. It was primarily present in grassland habitat (both native and non-native grassland) but was also recorded in coyote brush – California sagebrush scrub and in Eucalyptus groves.

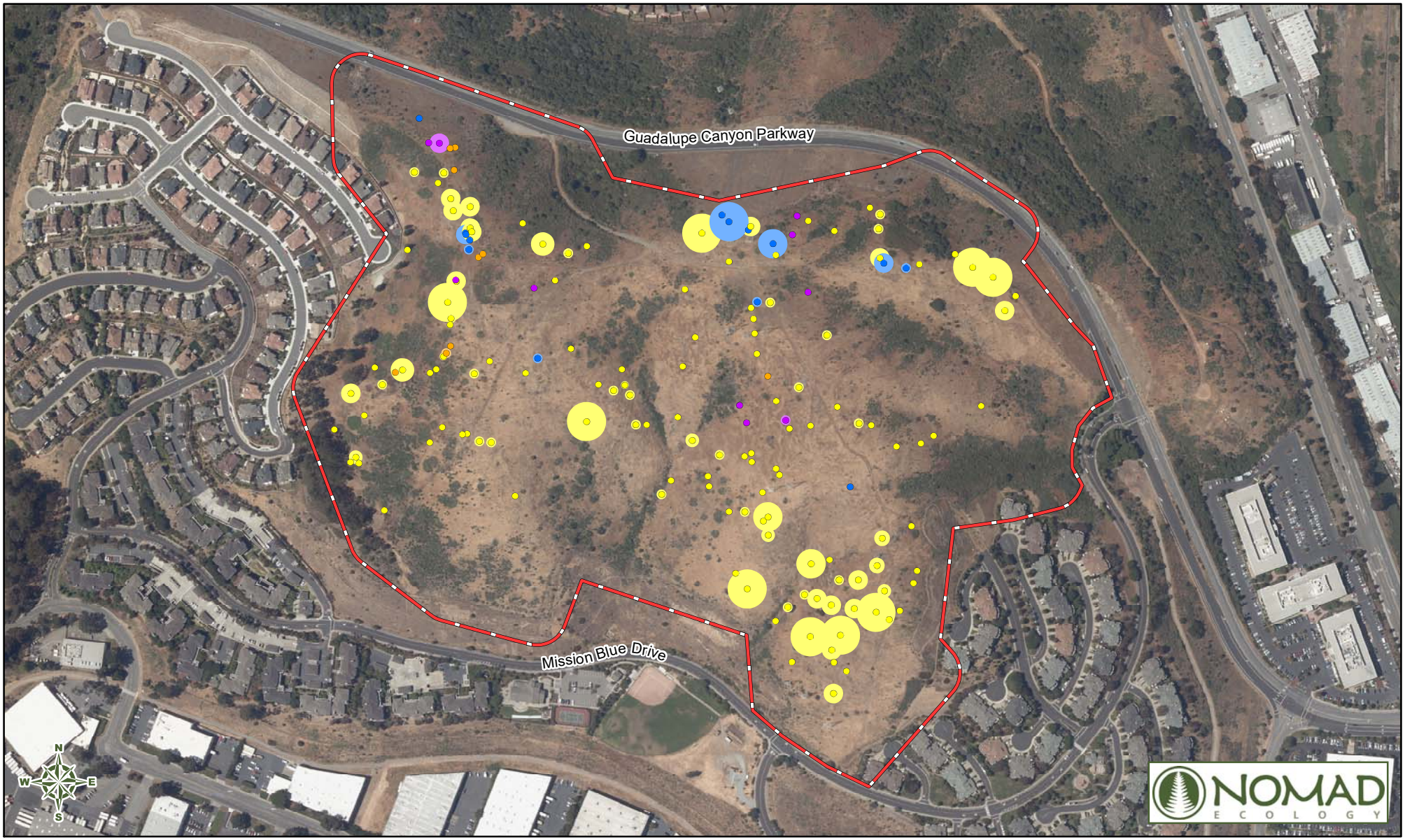
Nectar plants for adult mission blue and Callippe silverspot were observed in the survey areas including yarrow (*Achillea millefolium*), brownie thistle, coast buckwheat, San Francisco coyote mint, checker mallow (*Sidalcea malviflora*), California horkelia (*Horkelia californica* subsp. *californica*), and blue-eyed grass (*Sisyrinchium bellum*).

Table 7. Host Plants

Map Key	Species	Common Name	Butterfly Species	Population Size (#)		Acres[1]	
				SA1	SA2	SA1	SA2
HP1	*Lupinus albifrons* subsp. *collinus*	silver bush lupine	Mission blue	310	182	0.716	0.307
HP2	*Lupinus variicolor*	varied lupine	Mission blue	46	0	0.021	<0.001
HP3	*Lupinus formosus* var. *formosus*	western lupine	Mission blue	91	2	0.105	<0.001
HP4	*Viola pedunculata*	johnny jump-up	Callippe silverspot	3403	3346	5.511	8.025
HP5	*Plantago erecta*	California plantain	Bay checkerspot	0	100[2]	0	<0.001
HP6	*Plantago lanceolata*	English plantain	Bay checkerspot	Abundant	Abundant	Not mapped but was observed during surveys.	Not mapped but was observed during surveys.

Map Key	Species	Common Name	Butterfly Species	Population Size (#)		Acres[1]	
				SA1	SA2	SA1	SA2

[1]During 2020 surveys, whenever a host plant was encountered a GPS point was dropped and the number of individuals and a rough radius (in meters) of the population were estimated and recorded. The radii were used to buffer each point to represent the estimated population extent, and the area (in acres) was calculated from this buffered polygon. Some of the polygons overlap which may inflate the estimated acreage of each host plant species occurrence.
[2]Additional California plantain could be present on the dirt access road that runs along the north and northeast of SA2. It was not observed during surveys but suitable habitat is present.



December 2020

Biological Resource Assessment

Legend

Survey Area
SA1

Butterfly Host Plant Locations*
silver bush lupine - HP1
varied lupine - HP2
summer lupine - HP3
Johhny jump up - HP4
California plantain - HP5

silver bush lupine - HP1
varied lupine - HP2
summer lupine - HP3
Johhny jump up - HP4
California plantain - HP5

1:5,400
0 225 450
Feet

Figure 9A

Native Butterfly Host Plant Locations

San Bruno Mountain Cattle Grazing Pilot Program

San Mateo County Parks

*During 2020 surveys, whenever a host plant was encountered a point was dropped, the number of individuals and a rough radius (in meters) of the population were estimated. The radii were used to buffer each point to repesent the estimated population extent.
The non-native English plantain (Plantago lanceolata) is a host plant for Bay checkerspot. It was not surveyed for or mapped in detail but was observed in abundance in SA1 and in scattered locations in SA2.

Source: USGS Ortho Aerial Imagery, San Mateo County, California 2018

San Mateo County, California

December 2020

Biological Resource Assessment

Legend

Survey Area	Butterfly Host Plant Locations*	
SA2	silver bush lupine - HP1	silver bush lupine - HP1
	varied lupine - HP2	varied lupine - HP2
	summer lupine - HP3	summer lupine - HP3
	Johhny jump up - HP4	Johhny jump up - HP4
	California plantain - HP5	California plantain - HP5

1:5,400
0 225 450
Feet

Figure 9B

Native Butterfly Host Plant Locations

San Bruno Mountain Cattle Grazing Pilot Program

San Mateo County Parks

*During 2020 surveys, whenever a host plant was encountered a point was dropped, the number of individuals and a rough radius (in meters) of the population were estimated. The radii were used to buffer each point to repesent the estimated population extent.
The non-native English plantain (Plantago lanceolata) is a host plant for Bay checkerspot. It was not surveyed for or mapped in detail but was observed in abundance in SA1 and in scattered locations in SA2.

Source: USGS Ortho Aerial Imagery, San Mateo County, California 2018

San Mateo County, California

Other Special Status Invertebrates

Four species of bees that are listed as Candidate endangered under the State (western bumble bee) or are included on CDFW's Special Animals List (obscure bumblebee, Stage's dufourine bee and San Francisco Bay Area leaf-cutter bee) have a moderate potential to occur in the survey areas (CDFW 2020a and 2020b):

- Obscure bumble bee (*Bombus caliginosus*)
- Western bumble bee (*Bombus occidentalis*)
- Stage's dufourine bee (*Dufourea stagei*)
- San Francisco Bay Area leaf-cutter bee (*Trachusa gummifera*)

Both of the bumble bee species have been previously collected on San Bruno Mountain, and could nest in abandoned rodent burrows or decaying wood on site.

The specific habitat requirements and life history of both the Stage's dufourine bee and the San Francisco Bay Area leaf-cutter bee are poorly understood, though they are known to be solitary ground-nesting species. The Stage's dufourine bee is known only from its type locality on San Bruno Mountain where it was originally collected in 1961 and 1962 (Bohart 1980), though its current status in the region is unknown. The San Francisco Bay Area leaf-cutter bee is known only from a small number of collection records, one of which was located in San Francisco (Thorpe 1963). Related species in the genus *Trachusa* have been observed digging nest tunnels on south and west-facing slopes and lining brood chambers with plants in the buckthorn family (Rhamnaceae) (Michener 1941). Only one species in this family, the California coffeeberry (*Frangula californica*), was observed in the survey areas. Lacking any further information on either of these bee species and taking into consideration the sites do have areas of south or west facing slopes, they are both considered to have a moderate potential to occur within the survey area.

Fish

The survey area lacks any aquatic features capable of supporting fish. No special status fish are expected to occur within the survey area.

Amphibians

Two amphibian species, California red-legged frog (*Rana draytonii*) and foothill yellow-legged frog (*Rana boylii*) were initially considered for this report. California red-legged frog has not been observed on San Bruno Mountain in at least 30 years (SMCPD 2018), and is almost certainly extirpated from the area. Based on a lack of suitable aquatic habitat and isolation from known populations by dense urban development, both were determined to have no potential to occur within the survey area.

Reptiles

Two special status reptile species, the San Francisco garter snake (*Thamnophis sirtalis tetrataenia*) and western pond turtle (*Emys marmorata*) were initially considered during this assessment. There have been no confirmed observations of San Francisco garter snake on San

Bruno Mountain for over 30 years (SMCPD 2018). Based on a lack of suitable aquatic habitat for either species and isolation from known populations by dense urban development, both were determined to have no potential to occur within the survey area.

Birds

Three special status bird species were determined to have potential to occur within the survey area.

Cooper's Hawk (*Accipiter cooperii*)

The Cooper's hawk (nesting) is included on the CDFW Watchlist (CDFW 2020b). Their range extends across the contiguous United States extending into southern Canada and Mexico, and are distributed throughout most of California (Curtis *et al*. 2006). Cooper's hawks inhabit dense stands of oak woodlands, riparian deciduous forests, or other forest habitats often near water and suburban areas (Baicich & Harrison 2005). This woodland raptor hunts in woodlands, along forest edges, and suburban areas for medium-sized birds and mammals (Curtis *et al*. 2006). Typical nest site selection is characterized by mature trees with significant canopy cover; although, species will nest in suburban areas in a variety of trees (Curtis *et al*. 2006). They breeding beginning in April, and are single-brooded (Baicich & Harrison 2005).

Habitat Suitability and Occurrence Data

There are no occurrences of Cooper's hawk nesting sites recorded in the CNDDB within five miles of the survey area (CDFW 2020b), but they are relatively ubiquitous in the region and are regularly observed on San Bruno Mountain and in adjacent urban areas (eBird 2020). Suitable nesting habitat is present among the mature trees in the survey areas, though Cooper's hawks typically prefer a more closed and continuous canopy than the patchy distribution of trees that is present within the survey areas. The largest trees within the survey areas are the eucalyptus trees in SA1, and are not preferred nesting trees for this species. Suitable foraging habitat is available in the survey areas and the entire open space of San Bruno Mountain and surrounding wooded areas. Based on the presence of marginally suitable nesting habitat and the regular observation of individuals on San Bruno Mountain, the species is considered to have a low potential to nest within the survey area.

Northern Harrier (*Circus hudsonius*)

The northern harrier is a California Species of Special Concern. It is a year-round resident of coastal California and the Central Valley (Smith et al. 2011). However, the species occurs more broadly and in much greater numbers during migration and winter than during the breeding season (Shuford and Gardali 2008). Northern harriers appear to be nomadic, ranging widely, both within the breeding season and across years (Shuford and Gardali 2008).

Northern harriers breed and forage in a variety of open (treeless) habitats that provide adequate vegetative cover; an abundance of suitable prey (mostly small mammals); and scattered hunting, plucking, and lookout perches such as shrubs or fence posts. In California, such habitats include freshwater marshes, brackish and saltwater marshes, wet meadows, weedy borders of lakes, rivers and streams, annual and perennial grasslands (including those with vernal pools), weed fields, ungrazed or lightly grazed pastures, some croplands, sagebrush flats, and desert sinks

(MacWhirter and Bildstein 1996). Harriers nest on the ground, mostly within patches of dense, often tall, vegetation in undisturbed areas (Smith et al. 2011). Northern harriers are widespread throughout the Central Coast region of California (Shuford and Gardali 2008). The primary threats to breeding harriers are loss and degradation of nesting and foraging habitat, nest failure from human disturbance, predator-control projects, agricultural practices, and unnatural predation pressure (Shuford and Gardali 2008).

Habitat Suitability and Occurrence Data

Although there are no occurrences of northern harrier nesting sites recorded in the CNDDB within five miles of the survey areas (CDFW 2020b), individuals of this species are regularly observed on San Bruno Mountain and other open spaces in adjacent areas (eBird 2020). There is suitable nesting habitat for this species within the tall, grassy vegetation of both survey areas. They may also forage in open areas in the survey areas or transit through at any time of year. Due to the presence of suitable nesting and foraging habitat, this species is considered to have a moderate potential to occur in the survey areas.

White-Tailed Kite (*Elanus leucurus*)

The white-tailed kite is a fully protected species under §3511 of the California Fish and Game Code, and receives protection under the MBTA. In California, the white-tailed kite is a year-round resident in coastal and valley lowlands, where it inhabits herbaceous and open stages of most habitat types. White-tailed kites typically nest along habitat edges, either in isolated trees or contiguous forest stands. (Dunk 1995). Although kites use a variety of tree species for nesting (Dixon 1957), nest sites are frequently located in or near riparian corridors (Niemela 2007). Foraging habitat quality is largely dependent on the abundance and availability of California voles (*Microtus californicus*), which generally occur at low densities in agricultural landscapes lacking natural vegetation and standing water, or where rodenticides are used (Erichsen et al. 1996). White-tailed kites breed between February and October, although peak breeding activity occurs between May and August (Laudenslayer et al. 1990). A pair usually has only one brood per year, although they occasionally may have two broods (Baicich and Harrison 2005, Dunk 1995). During the non-breeding season, white-tailed kites are solitary hunters; however, they may use communal roosts at night (Warner and Rudd 1975).

Habitat Suitability and Occurrence Data

Although there are no occurrences of white-tailed kite nesting sites recorded in the CNDDB within five miles of the survey areas (CDFW 2020b), this species is relatively ubiquitous in the region and individuals are regularly observed on San Bruno Mountain and in adjacent urban areas (eBird 2020). Marginally suitable nesting habitat is present among the mature trees in the survey areas, and suitable foraging habitat is available in the open space of San Bruno Mountain and surrounding open areas within and adjacent to the survey area. Based on the presence of marginally suitable nesting habitat and their known presence in the region, white-tailed kite has a low potential to nest within the survey areas.

Nesting Bird Summary

Protection is afforded to most bird species by the Migratory Bird Treaty Act (16 U.S.C. 703-712; MBTA) administered by the U.S. Fish and Wildlife Service (Division of Migratory Bird

Management), which makes it unlawful, unless expressly authorized by permit pursuant to federal regulations, to "pursue, hunt, take, capture, kill, attempt to take, capture or kill, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export at any time, or in any manner, any migratory bird, or any part, nest, or egg of any such bird." This includes direct and indirect acts, with the exception of harassment and habitat modification, which are not included unless they result in direct loss of birds, nests or eggs. In addition, the Migratory Bird Treaty Reform Act (Division E, Title I, Section 143 of the Consolidated Appropriations Act, 2005, PL 108–447; MBTRA), excludes all migratory birds non-native or that have been human introduced to the U.S. or its territories. It defines a native migratory bird as a species present within the U.S. and its territories as a result of natural biological or ecological processes. The California Fish and Game Code (CFGC) §3503 prohibits the take, possession, or needless destruction of the nest or eggs of any bird; §3503.5 prohibits the take, possession, or needless destruction of any nests, eggs or birds in the orders Falconiformes (new world vultures, hawks, eagles, ospreys and falcons, among others) or Strigiformes (owls); §3511 prohibits the take or possession of fully protected birds; and §3513 prohibits the take or possession of any migratory nongame bird or part thereof as designated in the MBTA. Most birds are protected under the MBTA and CFGC except for several nonnative species, including the European starling (*Sturnus vulgaris*) and the house sparrow (*Passer domesticus*).

Habitat suitable for nesting birds protected under the Migratory Bird Treaty Act is present throughout the survey area. Nesting birds have a high potential to occur within the survey area during the nesting bird season (February through August). Birds have highly variable nesting habits, and the trees, shrubs, and ground within the survey area all present suitable nesting substrate for multiple species.

Mammals

Four special status bat species were determined to have potential to occur within the survey area: pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendi*), hoary bat (*Lasiurus cinereus*), and fringed myotis (*Myotis thysanodes*).

Special Status Bats

Bats are widespread within California and may be found in any habitat. They are nocturnal, aerial predators of insects and other arthropods, and often forage over open water, marshes, and other moist, open areas where flying insects tend to congregate. Different bat species have different roosting requirements, meaning that roosts can be found in a variety of habitats and locations.

Day roosts, used from sunrise to sunset, provide a protected and sheltered location for bats to rest, sleep, and raise young, often within a short distance of foraging areas (Erickson et al. 2002). During the day, bats may use three types of roosts: crevices, cavities, and foliage. Crevice and cavity roosts may be found in natural and human-made features such as caves, cliffs, rock outcrops, trees, mines, buildings, bridges, and tunnels. During the breeding season (April through September), crevice and cavity roosting species typically gather in groups of mothers and young (maternity colonies) that may number in the thousands or even tens of thousands of individuals.

Foliage-roosting species generally roost on branches in the canopy of mature trees, though solitary individuals may use large, thickly vegetated shrubs as well. Foliage-roosting bats may be solitary or occur in small groups while breeding. Roosts used during the day and as maternity roosts tend to be well-hidden and require precise temperature and humidity conditions.

Night roosts, which are used from approximately sunset to sunrise, are primarily sites where animals congregate to rest and digest their food between foraging bouts (Erickson et al. 2002). Night roosts are often located in more open but protected areas such as overhangs on buildings and recessed areas on the undersides of bridges.

Four special status bat species have the potential to occur within the survey area based on range, habitat, and recorded occurrences in the region. Nearby CNDDB occurrences are summarized in the individual species descriptions in Table 6. Bats, in general, may be under-reported to the CNDDB relative to their actual abundance in the environment because they are nocturnal, difficult to detect, and difficult to positively identify and count when detected. California Fish and Game Code (CFGC) Section 4150 states that all non-game mammals or parts thereof may not be taken or possessed except as provided otherwise in the code or in accordance with regulations adopted by CDFW. Bats are classified as non-game mammals and are afforded protection under various sections of the CFGC. They also receive protection under the California Code of Regulations and the California Public Resources Code. Activities resulting in mortality of non-game mammals or disturbances that causes the loss of maternity colonies of bats may be considered "take" by CDFW.

Pallid Bat (*Antrozous pallidus*)

The pallid bat is a California Species of Special Concern. It is also considered a High Priority species by the Western Bat Working Group. The pallid bat occurs throughout most of California, except for the high Sierra Nevada and the northwestern corner of the state (Zeiner et. al. 1988). It occurs in wide variety of habitats (including grasslands, shrublands, and woodlands), although it is most abundant in xeric ecosystems (Zeiner et. al. 1988, Sherwin and Rambaldini 2005). The pallid bat is a yearlong resident in most of the range (Zeiner et. al. 1988).

Pallid bats may roost alone, in small groups (2 to 20 bats), or gregariously (hundreds of individuals). Roost sites include crevices in rocky outcrops and cliffs, caves, mines, trees (e.g., in basal hollows, bole cavities, and exfoliating bark), and various human structures such as bridges (especially wooden and concrete girder designs), barns, porches, bat boxes, and human-occupied as well as vacant buildings. Roosts generally have unobstructed entrances/exits, and are high above the ground, warm, and inaccessible to terrestrial predators. Although year-to-year and night-to-night roost reuse is common, pallid bats may switch day roosts on a daily (1-13 day) and seasonal basis (Sherwin and Rambaldini 2005). Pallid bats usually emerge late in the evening (30-60 min after sunset) to forage on a variety of arthropods.

Pallid bats' tendency to roost gregariously and their relative sensitivity to disturbance makes them vulnerable to mass displacement. Roosts and hibernacula can be damaged or destroyed by vandalism, mine closures and reclamation, recreational activities such as rock climbing, forestry practices such as timber harvest, and, where human-made structures are occupied, demolition, modification, chemical treatments, or intentional eradication and exclusion. Maternity colonies and hibernating bats are especially susceptible to disturbance. Loss or modification of foraging

habitat due to prescribed fire, urban development, agricultural expansion, and pesticide use pose potential threats. This is especially true in coastal California, where urbanization has reduced roosting and foraging habitat (Sherwin and Rambaldini 2005).

Habitat Suitability and Occurrence Data

There is one occurrence of pallid bat recorded in the CNDDB approximately 4 miles south of the survey area. This occurrence (EONDX # 66767) was recorded in 1947 in Millbrae, where three individuals were collected. Roosting habitat for the pallid bat is available within the larger trees in the survey areas, though they are marginally suitable at best because pallid bat tree roosts are typically found in mature, thick stands of forest. However, they could forage in the survey areas or transit through the area, and are therefore considered to have a low potential to occur.

Townsend's Big-eared Bat (*Corynorhinus townsendi*)

The Townsend's big-eared bat is a California Species of Special Concern and it is considered a "High Priority Species" by the Western Bat Working Group. In California, the species is found throughout most of the state (Zeiner et al. 1988). They have been reported in a wide variety of habitat types, including coniferous forests, deserts, native prairies, riparian communities, active agricultural areas, and coastal habitat types (Sherwin and Piaggio 2005). They typically roost in caves, mines, and other cave-like spaces. However, they have also adapted to roost in large, undisturbed spaces in buildings and bridges (Gruver and Keinath 2006). Roosts have also been found in basal hollows of very large old-growth redwood trees (Mazurek 2004). Maternity colonies are comprised of small clusters or groups (usually fewer than 100 individuals) of females and young (Zeiner et al. 1988). Winter hibernating colonies are composed of mixed-sexed groups, which can range in size from a single individual to colonies of several hundred bats. Foraging associations include edge habitats along streams that are adjacent to and within a variety of wooded habitats (Sherwin and Piaggio 2005).

Habitat Suitability and Occurrence Data

There is one occurrence of Townsend's big-eared bat recorded in the CNDDB within 5 miles of the survey area. This occurrence (EONDX # 93556) was recorded in 2005 in the Twin Peaks region of San Francisco, where one individual was collected. Because there are no caves, mines, buildings, or suitable large trees Within the survey areas, Townsend's big-eared bats are not expected to roost anywhere in the survey areas. However, they could forage in the survey areas or transit through, and are therefore considered to have a low potential to occur.

Hoary Bat (*Lasiurus cinereus*)

The hoary bat is included on CDFW's California State Special Animals List and is listed as a Medium-priority species by the Western Bat Working Group (CDFW 2020b). It is a widespread species found in a variety of habitats throughout California. This solitary bat is most commonly found in association with forested habitats near water (CDFW 2017a). Hoary bats roost in the foliage of evergreens and secondarily in deciduous trees, particularly in edge habitat (Bolster 2020). Preferred sites are hidden from above, with few branches below, and have ground cover of low reflectivity. Females and young tend to roost at higher sites. They forage in small to large groups on large prey such as moths, beetles and dragonflies (Barclay 1985). Habitats suitable for

bearing young include all woodlands and forests with medium to large-size trees and dense foliage. Hoary bats have been recorded from sea level to 13,200 feet (4,125 meters). Females give birth to young in mid-May through early July. Solitary individuals outside of the breeding season may roost in nearly any type of vegetation, including bushes and shrubs.

This species is nocturnal and emerges late in the evening. Peak activity varies with season and location, but is usually around 3-5 hours after sunset. Individuals wintering in cold climates hibernate, but may be active on warm winter days. The hoary bat tolerates a wide range of air temperatures, and has been found foraging at temperatures of 32-72 degrees Fahrenheit.

Habitat Suitability and Occurrence Data

Roosting habitat for the hoary bat is available within the trees and larger shrubs in the survey areas. There are three reported CNDDB occurrences within 5 miles of the survey area; the nearest occurrence (EONDX # 68872) was recorded in 1969, approximately 1.4 miles to the west. Based on the presence of suitable roosting habitat and their known presence in the region, hoary bats are considered to have a moderate potential to occur within the survey area.

Fringed Myotis (*Myotis thysanodes*)

The fringed myotis bat is included on CDFW's Special Animals List and is listed as a High Priority Species by the WBWG. The range of the fringed myotis extends through much of western North America from southern British Columbia, Canada, south to Chiapas, Mexico and from Santa Cruz Island in California, east to the Black Hills of South Dakota. It occurs from sea level to 9,350 feet but is most common at middle elevations (3,937 to 6,890 feet). The distribution of the species is patchy. Although it appears to be most common in drier woodlands (oak, pinyon-juniper, ponderosa pine), it is found in a wide variety of habitats including desert scrub, mesic coniferous forest, grassland, and sage-grass steppe (Bradley et al 2005).

The fringed myotis roosts in crevices in buildings, underground mines, rocks, cliff faces, and bridges. Roosting in decadent trees and snags, particularly large ones, is common throughout its range in the western U.S. and Canada. Fringed myotis roosts have been documented in a large variety of tree species and it is likely that structural characteristics (e.g., height, decay stage) rather than tree species play a greater role in selection of a snag or tree as a roost. Maternity roosts are colonial with colonies ranging from 10 to 2,000 individuals, though large colonies are exceedingly rare. Much less information is available on roosts of males, but it is thought that they roost singly or in small groups. The information available on hibernation is largely limited to an accounting of the types of structures used as hibernacula, which include caves, mines, and buildings (Bradley et al 2005).

Habitat Suitability and Occurrence Data

There is one occurrence of fringed myotis bat recorded in the CNDDB approximately 4.2 miles southwest of the survey area. This occurrence (EONDX # 68551) was recorded in 2005 near the north end of San Andreas Reservoir, where one juvenile was observed. Roosting habitat for fringed myotis bat is available within the crevices in rocks and larger trees in the survey areas, and they may forage or transit through survey area. Based on the presence of marginally suitable

roosting habitat, fringed myotis bats are considered to have a low potential to occur within the survey area.

3.2.5 INVASIVE WEEDS

During the course of the survey, non-native plant species were encountered within the survey area. A non-native plant species is defined as a species that is occurring outside of its native distributional range and the species has arrived there by human activity.

Several of the non-native plant species encountered on-site are tracked by the California Department of Food and Agriculture (CDFA 2020) and the California Invasive Plant Council (Cal-IPC 2020) due to their noxious or invasive behavior. Species tracked by these organizations are given a rating based on criteria such as ecological impacts, treatment or eradication priority, and threats they pose to agricultural economics. Rating classifications given by Cal-IPC and CDFA are shown in Table 8.

Of the non-native plant species tracked by Cal-IPC and CDFA, 25 plant species observed within the survey area are of concern due to their invasiveness (Table 8).

Table 8. Invasive Plants Observed in the Survey Area

SPECIES NAME	COMMON NAME	CALIFORNIA INVASIVE PLANT COUNCIL RANK (CAL-IPC 2020)[1]	CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE NOXIOUS WEED LIST (CDFA 2020)[2]
Avena barbata	slender oats	Moderate	--
Brachypodium distachyon	false brome	Moderate	--
Brassica nigra	black mustard	Moderate	--
Briza maxima	rattlesnake grass	Limited	--
Bromus diandrus	ripgut brome	Moderate	--
Bromus hordeaceus	soft chess	Limited	--
Bromus rubens	foxtail chess	High	--
Carduus pycnocephalus subsp. *pycnocephalus*	Italian thistle	Moderate	Listed
Centaurea melitensis	tocalote	Moderate	Listed
Cirsium vulgare	bull thistle	Moderate	Listed
Cytisus scoparius	scotch broom	High	Listed
Eucalyptus globulus	bluegum	Moderate	--
Festuca perennis	Italian ryegrass	Moderate	--
Foeniculum vulgare	fennel	High	--
Genista monspessulana	French broom	High	Listed
Geranium dissectum	cut-leaf geranium	Moderate	--
Helminthotheca echioides	bristly ox-tongue	Limited	--

Hirschfeldia incana	hoary mustard	Moderate	--
Hypochaeris glabra	smooth cat's ear	Limited	--
Hypochaeris radicata	rough cat's ear	Moderate	--
Plantago lanceolata	English plantain	Limited	--
Polypogon monspeliensis	rabbitsfoot grass	Limited	--
Rumex acetosella	sheep sorrel	Moderate	--
Rumex crispus	curly dock	Limited	--
Trifolium hirtum	rose clover	Limited	--

[1]Cal-IPC Weed Ranking Definitions:

High: These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.

Moderate: These species have substantial and apparent - but generally not severe - ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.

Limited: These species are invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic (Cal-IPC 2020).

[2]Species considered a noxious weed by CDFA are listed on the California Noxious Weed List (CDFA 2020).

3.3. WILDLIFE MOVEMENT AND CONNECTIVITY

Habitat loss, fragmentation, and degradation resulting from land use changes or habitat conversion can alter the use and viability of wildlife movement corridors (*i.e.* linear habitats that naturally connect and provide passage between two or more otherwise disjunct larger habitats or habitat fragments). In general, studies suggest that habitat corridors provide connectivity for and are used by wildlife, and as such, are an important conservation tool (Beier and Noss 1998). According to Beier and Loe (1992), wildlife habitat corridors should fulfill several functions. They should maintain connectivity for daily movement, travel, mate-seeking, and migration; plant propagation; genetic interchange; population movement in response to environmental change or natural disaster; and recolonization of habitats subject to local extirpation.

The suitability of a habitat as a wildlife movement corridor is related to, among other factors, the habitat corridor's dimensions (length and width), topography, vegetation, exposure to human influence, and the species in question (Beier and Loe 1992). Species utilize movement corridors in several ways. "Passage species" are those species that use corridors as thru-ways between outlying habitats. The habitat requirements for passage species are generally less than those for corridor dwellers. Passage species use corridors for brief durations, such as for seasonal migrations or movement within a home range. As such, movement corridors do not necessarily have to meet any of the habitat requirements necessary for a passage species everyday survival. Large herbivores, such as deer and elk, and medium-to-large carnivores, such as coyotes, bobcats and mountain lions, are typically passage species. "Corridor dwellers" are those species that have

limited dispersal capabilities – a category that includes most plants, insects, reptiles, amphibians, small mammals, and birds – and that use corridors for a greater length of time. As such, wildlife movement corridors must fulfill key habitat components specific to a species' life history requirements in order for them to survive (Beier and Loe 1992). In general, however, the suitability and/or utility of the landscape – specifically, of the landscape as corridor habitat – is best evaluated on a species-level (Beier and Noss 1998).

Wildlife movement or connectivity features, or evidence thereof, were found within the survey areas. A variety of wildlife species may use the survey area for breeding, foraging, or as a stopover point during migratory movements. The two survey areas are within the open space of San Bruno Mountain therefore they provide suitable habitat linking to other suitable habitat on San Bruno Mountain. However the open space is surrounded by development which limits its utility as a connectivity corridor, because rather than providing a linkage between two areas of suitable wildlife habitat, it is instead linking suitable habitat (the open space of San Bruno Mountain) with unsuitable habitat (urbanized Brisbane and South San Francisco).. An absence of hydrologic features that hold water for more than a brief amount of time after rains, further limits the property's value as suitable habitat given the resulting lack of aquatic species, riparian habitat, and drinking water sources for terrestrial wildlife.

No significant impacts on wildlife habitat or movement corridors are anticipated given the temporary nature and relatively low impact cattle grazing and installation of grazing infrastructure will have, the surrounding development in the vicinity of the survey areas, and that the survey areas will still be available for wildlife to move through during and after project implementation. Large fauna (e.g., deer) whose movement might be inhibited by cattle fencing are notably absent from the study areas.

Section 4. IMPACT ASSESSMENT

Additional information is needed to make CEQA findings and develop mitigation measures:

- Protocol-level Rare Plant Surveys

Preliminary mitigation measures are included below.

4.1.1 SENSITIVE NATURAL PLANT COMMUNITIES

Impact Assessment

The cattle grazing pilot program may result in impacts to sensitive natural communities via trampling, grazing of plants in these communities, or erosion impacts. Site-specific grazing management planning is intended to prevent overgrazing and soil compaction, and manage cattle behavior through fencing and water distribution while enhancing native habitat.

The infrastructure installation may result in impacts to sensitive natural plant communities if fencing, access, or other infrastructure occurs in or through sensitive natural plant communities. If impacts to sensitive natural communities are unavoidable during infrastructure installation, it is anticipated that all impacts will be temporary and will be restored following construction. The only instances in which permanent impacts are possible are where placement of concrete pads for troughs, fence post installation, and road improvements may convert sensitive natural communities permanently; however, the findings of this Biological Resource Assessment and additional site surveys will guide the placement of these features to avoid these resources. If impacts to sensitive natural communities are unavoidable, a replanting plan will be prepared that details replanting and monitoring for temporary impacts to sensitive natural communities.

Preliminary Mitigation Measures

- The grazing infrastructure design will incorporate the results of this Biological Resource Assessment and any additional resource surveys to avoid and minimize impacts to sensitive natural plant communities.
- All wetland communities will be fenced and avoided by grazing and infrastructure installation construction.
- The Grazing Management Plan will propose appropriate locations, timing, duration, intensity, monitoring, and adaptive management of grazing to minimize impacts to sensitive natural communities.
- If impacts to upland sensitive natural communities are unavoidable during infrastructure installation, all impacts will be temporary and will be restored following construction. A replanting plan will be prepared that details replanting and monitoring for temporary impacts to sensitive natural communities.

4.1.2 SPECIAL STATUS PLANT SPECIES

Impact Assessment

Special status plant surveys have not been completed for the survey areas. Two California Rare Plant Rank species: San Francisco wallflower and Scouler's catchfly were observed in the survey areas. Three individuals of Scouler's catchfly was observed in SA1 on a rocky outcrop in the northwest portion of the SA and 73 individuals of San Francisco wallflower. The cattle grazing pilot program may result in impacts to special status plant species via trampling, grazing of plants, or erosion impacts. Site-specific grazing management planning is intended to prevent overgrazing and soil compaction, and manage cattle behavior through fencing and water distribution while enhancing native habitat.

The infrastructure installation may result in impacts to special status plants if fencing, access, or other infrastructure occurs in or near special status plant populations. If impacts to special status plants are unavoidable during infrastructure installation, it is anticipated that all impacts will be temporary and will be restored following construction. The only instances in which permanent impacts are possible are where placement of concrete pads for troughs, fence post installation, and road improvements may impact special status plants permanently; however, the findings of this Biological Resource Assessment and additional site surveys will guide the placement of these features to avoid these resources. If impacts to special status plants are unavoidable, a replanting plan will be prepared that details replanting and monitoring for temporary impacts to special status plants.

Preliminary Mitigation Measures

- Protocol-level special status plant surveys should be completed for the project.
- The grazing infrastructure design will incorporate the results of this Biological Resource Assessment and any additional resource surveys to avoid and minimize impacts to special status plant species.
- The Grazing Management Plan will propose appropriate locations, timing, duration, intensity, monitoring, and adaptive management of grazing to minimize impacts to special status plant species.
- If any special status plant populations are present in the vicinity of infrastructure installation, an appropriately timed preconstruction survey (when plant species is in flower or visible above ground) should occur prior to the start of construction. All individuals should be counted, flagged, and mapped with a GPS unit.
- All individuals of special status plants in the vicinity of infrastructure installation should flagged and/or fenced for avoidance.
- If impacts to special status plants are unavoidable during infrastructure installation, all impacts will be temporary and will be restored following construction. A replanting plan will be prepared that details replanting and monitoring for temporary impacts to special status plants.

4.1.3 SPECIAL STATUS WILDLIFE SPECIES AND NESTS

Impact Assessment

Wildlife species would generally be able to either move away from livestock or find shelter (i.e. burrows) to avoid direct trampling during grazing or impacts during construction of grazing infrastructure. Preconstruction surveys prior to the installation of grazing infrastructure and seasonally timed grazing and construction activities will minimize impacts to all special-status species.

Grazing infrastructure construction is not expected to significantly impact nesting birds or roosting bats as preconstruction surveys could identify any active nests or roosts and avoid impacts by establishing a no-work buffer until nests have successfully fledged and avoiding removing any structures or trees that contain suitable bat roosting habitat. If structures and trees with suitable bat habitat can't be avoided, a phased removal approach will be utilized. During grazing, livestock may collapse burrow entrances and lead to entrapment of wildlife, including bumblebee species, within burrows or exclusion and exposure of those caught outside.

Livestock may also trample butterfly larvae and eggs that are on host plants. The cattle grazing pilot program may result in impacts to host plants via trampling, grazing of plants in these communities, or erosion impacts. Site-specific grazing management planning is intended to prevent overgrazing and soil compaction, and manage cattle behavior through fencing and water distribution while enhancing native grassland habitat.

The infrastructure installation may result in impacts to host plants if fencing, access, or other infrastructure occurs in or through host plant populations. If impacts to host plants are unavoidable during infrastructure installation, it is anticipated that all impacts will be temporary and will be restored following construction. The only instances in which permanent impacts are possible are where placement of concrete pads for troughs, fence post installation, and road improvements may impact host plants permanently; however, the findings of this Biological Resource Assessment and additional site surveys will guide the placement of these features to avoid these resources. If impacts to host plants are unavoidable, a replanting plan will be prepared that details replanting and monitoring for temporary impacts to host plants. Impacts to English plantain* individuals may not be able to be avoided as this species is ubiquitous across much of the study area and was not mapped in detail during surveys. Additional surveys will be conducted to map English plantain* and if it cannot be avoided, this species will be addressed in the replanting and monitoring plan.

The cattle grazing pilot program is not expected to significantly impact special status wildlife species or nests. The purpose of the project is to reintroduce cattle grazing as a management and restoration tool to undeveloped areas of San Bruno Mountain to improve habitat for the special status butterfly species.

Preliminary Mitigation Measures

Special-Status Butterfly Species

- If feasible, the grazing infrastructure installation and grazing management plan will avoid grazing in suitable habitat during the flight and mating season of Callippe silverspot, mission blue, and Bay checkerspot butterflies (late February to July).

- If grazing will occur between February and July, then prior to conducting grazing, surveys shall be conducted by searching select host plants for mission blue butterflies for eggs, larvae, or pupae of special status butterfly species. Host plants with special status butterfly species observed may be protected with an appropriately-sized buffer as determined by a qualified biologist, taking into account the characteristics of the plant species and the grazing activity.
- The grazing infrastructure design will incorporate the results of this Biological Resource Assessment and any additional resource surveys to avoid and minimize impacts to butterfly host plants.
- The Grazing Management Plan will propose appropriate locations, timing, duration, intensity, monitoring, and adaptive management of grazing to minimize impacts to host plants.
- An appropriately timed preconstruction survey (when plant species is in flower or visible above ground) should occur prior to the start of construction. All native host plant individuals in the vicinity of infrastructure installation should be counted, flagged, and mapped with a GPS unit.
- All individuals of native host plants in the vicinity of the infrastructure installation should be flagged and/or fenced for avoidance.
- If impacts to native host plants are unavoidable during infrastructure installation, all impacts will be temporary and will be restored following construction. A replanting plan will be prepared that details replanting and monitoring for temporary impacts to native host plants.
- Mowing for infrastructure improvements can occur no closer than one foot from a listed butterfly species host plant. If mowing is to be conducted within three feet but less than one foot of a host plant, the cutting apparatus must be at least three inches above the soil to prevent contact and potential plant or butterfly injury.
- During the months of March through December when Mission blue butterflies are most likely to be located near the base of their host plant, no hand removal, digging, or any below ground disturbance may occur within three feet of a host plant. Hand removal, digging, and below ground disturbance within three feet of a host plant is permitted to occur within the months of January through February, but only if activities do not involve the contact of a root of a host plant, as *Lupinus* spp. have fragile root systems and can become easily stressed.
- During the months of September through February when Callippe silverspot butterflies are likely to be located near the base of their host plant, no hand removal, digging, or any below ground disturbance may occur within three feet of a known host plant. Due to *Viola pedunculata* entering a state of senescence prior to the flight season, Callippe silverspot butterflies lay their eggs in the vicinity of viola. As such it can be very difficult to determine locations of viola and where to best conduct minimization measures to the species when managing invasive species. Utilizing existing host plant maps and

conducting surveys of the management area between December and May and flagging locations of host plants is the best approach to minimize harming Calippe silverspot butterflies in their most vulnerable life stages. Flagging should be done the season prior to work being done in the months of June-November when *Viola pedunculata* is likely to not have above ground foliage.

- During the months of June through January when San Bruno elfin butterflies are likely to be located near the base of their host plant, no hand removal, digging, or any below ground disturbance may occur within three feet of a host plant. Hand removal, digging, and below ground disturbance within three feet of a host plant is permitted to occur within the months of February through May. Activity in San Bruno elfin habitat must be done very carefully as the rocky outcrops that sedum inhabit are extremely erosive and can easily dislodge the shallow rooting *Sedum spathulifolium*.
- During the months of May through February, when Bay checkerspot butterflies are likely to be located near crevices in the soil or rocks near or travelling to and from their host plants, no hand removal, digging, or any below ground disturbance may occur within three feet of a known host plant. Utilizing existing host plant maps and conducting surveys of the management area when host plant species have visible above ground vegetation and flagging locations of host plants is the best approach to minimize harming Bay checkerspot butterflies in their most vulnerable life stages.

Additional Special Status Wildlife Measures:

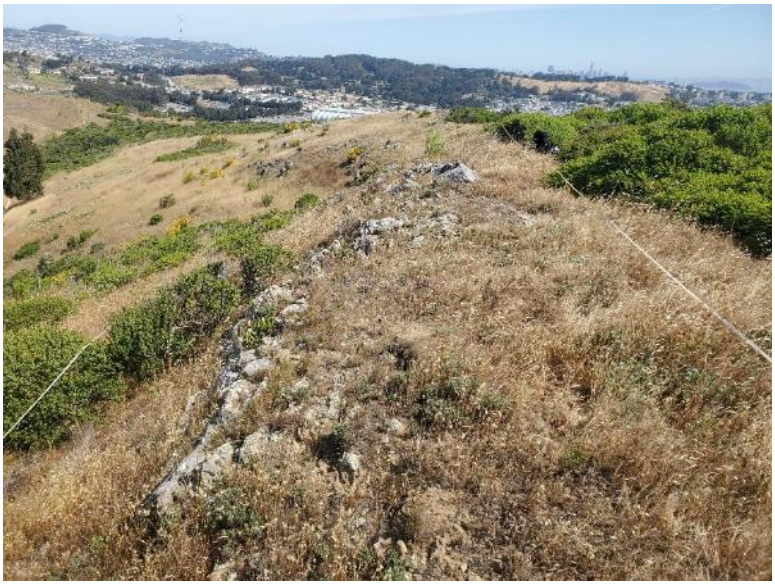
- Any barbed wire livestock fencing utilized will be of wildlife-friendly design, where the bottom strand is not barbed to prevent injury to animals passing underneath. This will facilitate movement of terrestrial wildlife and prevent livestock enclosures from becoming passage barriers.
- Preconstruction surveys for all special-status and common wildlife species should be conducted within the study area by a qualified biologist immediately prior to equipment or material staging, pruning/grubbing, or surface-disturbing activities. The qualified biologist will search all habitat features for special-status and common wildlife species. If species are found, individuals will be relocated outside of the project area if the qualified biologist is permitted to do so by all regulatory agencies and determines that relocation is warranted.
- A qualified biologist should conduct an education program covering all the sensitive resources with potential to occur in the project area and the avoidance and minimization measures requiring implementation for all project personnel prior to the start of construction activities and introduction of cattle.
- If tree or vegetation removal, pruning, or grubbing activities are necessary for grazing infrastructure installation, such activities should be conducted during the non-nesting season (September 1-January 31) to avoid impacts to nesting birds. If work is conducted at this time, no preconstruction surveys for nesting birds are required.
- If project construction begins during the breeding season (February 1 – August 31), pre-construction surveys should be conducted within the project area and should encompass

adjacent habitats up to 300 feet from the project boundary, by a qualified biologist no more than one week prior to equipment or material staging, pruning/grubbing or surface-disturbing activities. The surveys will entail a variety of search techniques, as described by Martin and Geupel (1993). These include incidental flushing of an adult from the nest, watching parental behavior (e.g., carrying nest material or food), systematically searching nesting substrates, and use of call-broadcasts. If no active nests are found within the survey area, no further mitigation is necessary.

- If active nests, i.e. nests with eggs or young present, are found within the survey area, non-disturbance buffers should be established at a distance sufficient to minimize disturbance based on the nest location, topography, cover, the nesting pair's tolerance to disturbance and the type/duration of potential disturbance. No work should occur within the non-disturbance buffers until the young have fledged as determined by a qualified biologist. If buffers are established and it is determined that project activities are resulting in nest disturbance, work in the nearby vicinity of the nest should cease immediately and CDFW and USFWS Migratory Bird Permit Office should be contacted for further guidance.
- Prior to the start of construction, a bat habitat assessment should be conducted to identify suitable bat roosting habitat including structures. snags, rotten stumps, rock outcrops and trees with broken limbs, exfoliating bark, cavities, etc. Potential roosting habitat should be avoided to the maximum extent practicable. If no suitable roost sites are identified, no further minimization measures are necessary.
- If suitable roosting habitat is identified and will be removed by the project, a qualified biologist should survey suitable roost sites immediately prior to the removal. If any sign of roosting bats or observation of individual bats is observed, do not remove the roost and contact CDFW. If no sign of roosting bats is observed, tree removal should continue by first removing non-habitat features such as limbs smaller than 3 inches in diameter. The tree should then be left overnight to allow any bats using the tree/snag to find another roost during their nocturnal activity period. A qualified biologist should survey the trees/snags a second time the following morning prior to felling and removal. If suitable roosting habitat will be disturbed by presence and noise of equipment and workers for more than two hours (i.e. near bridges), a qualified biologist will be present to monitor the bat roosting habitat and will stop work if any disturbance to bats is detected and contact CDFW for further guidance.

Section 5. PHOTOS

Photos	
Location SA1 - Northeast Ridge **Map Key** P1 **View Direction** East **Description** *Avena* spp. – *Bromus* spp. Semi-Natural Herbaceous Alliance (wild oats and annual brome grasslands)	
Location SA1 - Northeast Ridge **Map Key** P2 **View Direction** Northeast **Description** *Baccharis pilularis* Shrubland Association (Coyote brush scrub). Scattered Scotch broom* plants are visible.	

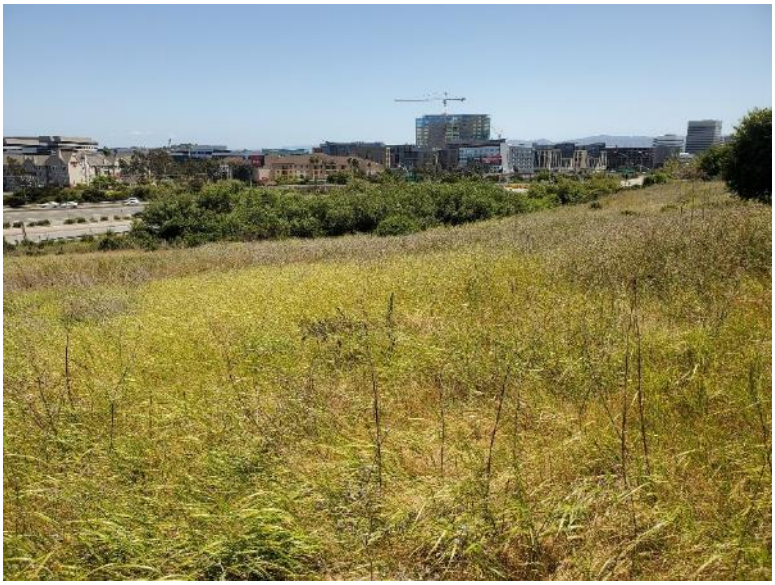
Photos	
Location SA1 - Northeast Ridge **Map Key** P3 **View Direction** North **Description** *Heterotheca sessiliflora* Herbaceous Association (goldenaster patches) visible on the rocky outcrop. Coyote brush scrub is visible to the right of photo.	
Location SA1 - Northeast Ridge **Map Key** P4 **View Direction** Northwest **Description** Johnny jump-up (*Viola pedunculata*) was present in this location.	

Photos	
Location SA1 - Northeast Ridge **Map Key** P5 **View Direction** Northeast **Description** Silver bush lupine patch.	
Location SA1 - Northeast Ridge **Map Key** P6 **View Direction** East **Description** *Danthonia californica* Grassland Association (California oat grass prairie) on 2-track access road.	

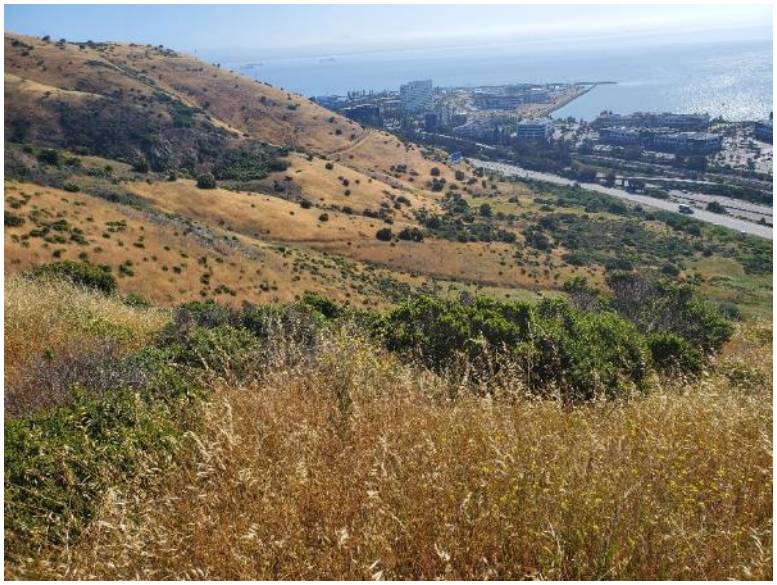
Photos	
Location	
SA1 - Northeast Ridge	
Map Key	
P7	
View Direction	
Northwest	
Description	
Avena spp. – *Bromus* spp. Semi-Natural Herbaceous Alliance (Wild Oats and Annual Brome Grasslands).	
Location	
SA1 - Northeast Ridge	
Map Key	
P8	
View Direction	
North	
Description	
Baccharis pilularis – *Artemisia californica* Shrubland Association (Coyote brush – California sagebrush scrub)	

Photos	
Location SA1 - Northeast Ridge **Map Key** P9A **View Direction** West **Description** Broom patches in *Baccharis pilularis* / Annual grass - herb Shrubland Association (coyote brush – annual grassland scrub)	
Location SA1 - Northeast Ridge **Map Key** P9B **View Direction** East **Description** Broom patches in *Baccharis pilularis* / Annual grass - herb Shrubland Association (coyote brush – annual grassland scrub.	

Photos	
Location SA1 - Northeast Ridge **Map Key** P10 **View Direction** Northeast **Description** Broom patches in *Baccharis pilularis* / Annual grass - herb Shrubland Association (coyote brush – annual grassland scrub)	
Location Ridge Trail **Map Key** P11 **View Direction** North **Description** Overview of the entire northeast ridge survey area (SA1), as viewed from the Ridge Trail of San Bruno Mountain County Park.	

Photos	
Location	
SA2 - Southeast Slope	
Map Key	
P12	
View Direction	
North	
Description	
Elymus triticoides Herbaceous Association (creeping wildrye grassland) in foreground. View of rocky outcrops and steep slopes.	
Location	
SA2 - Southeast Slope	
Map Key	
P13	
View Direction	
Southeast	
Description	
Creeping wildrye grassland in foreground and *Salix lasiolepis* Shrubland Alliance (a rroyo willow thickets) next to Bayshore Blvd.	

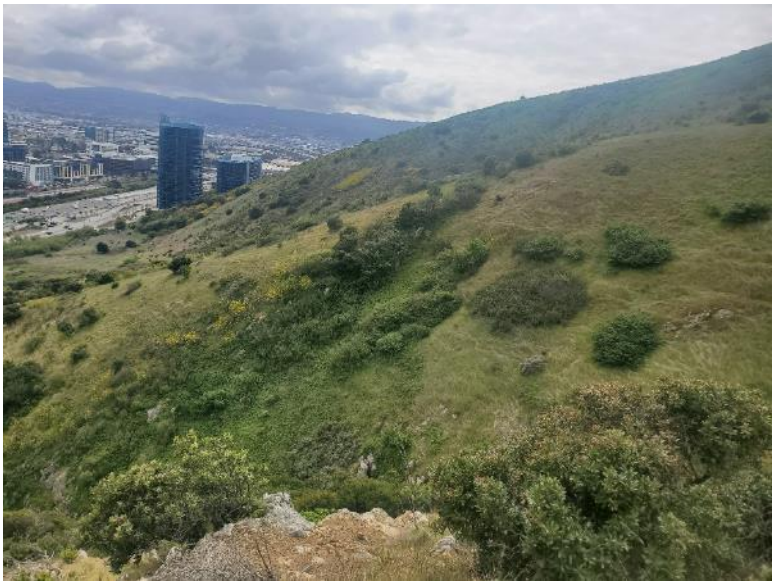
Photos	
Location SA2 - Southeast Slope **Map Key** P14 **View Direction** East **Description** *Baccharis pilularis* Shrubland Association (Coyote brush scrub)Broom (*Genista monspessulana*) Shrubland Semi-Natural Alliance (Broom patches).	
Location SA2 - Southeast Slope **Map Key** P15 **View Direction** South **Description** *Baccharis pilularis* / Annual grass - herb Shrubland Association (coyote brush – annual grassland scrub)	

Photos	
Location SA2 - Southeast Slope **Map Key** P16A **View Direction** Northeast **Description** View of SA2 and *Baccharis pilularis* / Annual grass - herb Shrubland Association (coyote brush – annual grassland scrub)	
Location SA2 - Southeast Slope **Map Key** P16B **View Direction** East **Description** View of SA2 and the San Francisco Bay.	

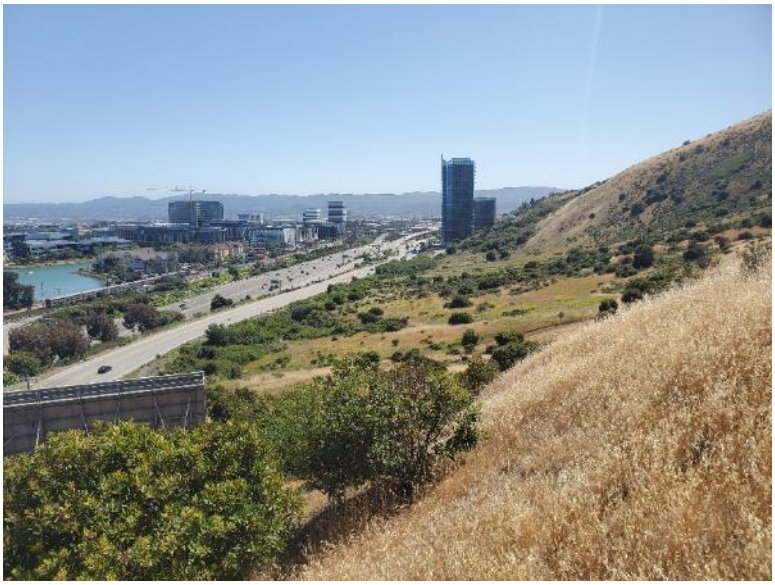
Photos	
Location SA2 – Southeast Slope **Map Key** P16C **View Direction** Southeast **Description** Baccharis pilularis / Annual grass - herb Shrubland Association (Coyote brush – annual grassland scrub).	
Location SA2 – Southeast Slope **Map Key** P17 **View Direction** Northeast **Description** *Salvia spathacea* Provisional Herbaceous Association (Hummingbird sage stands)	

Photos	
Location SA2 – Southeast Slope **Map Key** P18 **View Direction** Southwest **Description** Patches of *Stipa pulchra* Grassland Association (needle grass grassland) mixed in with non-native grassland.	
Location SA2 – Southeast Slope **Map Key** P19 **View Direction** West **Description** View of steep grassland slopes.	

Photos	
Location SA2 – Southeast Slope **Map Key** P20 **View Direction** Northeast **Description** of *Stipa pulchra* Grassland Association (needle grass grassland).	
Location SA2 -Southeast Slope **Map Key** P21 **View Direction** East **Description** Rocky outcrop.	

Photos	
Location SA2 – Southeast Slope **Map Key** P22A **View Direction** Southwest **Description** View of slopes of SA2	
Location SA2 – Southeast Slope **Map Key** P22B **View Direction** Southwest **Description** View of slopes of SA2	

Photos	
Location SA2 – Southeast Slope **Map Key** P22C **View Direction** West **Description** View of slopes of SA2.	
Location SA2 – Southeast Slope **Map Key** P23 **View Direction** Northeast **Description** Rock outcrop and *Prunus ilicifolia* Shrubland Alliance (Holly-leaf cherry chaparral).	

Photos	
Location SA2 – Southeast Slope **Map Key** P24 **View Direction** Southwest **Description** General view of the southeast slope survey area.	
Location SA2 – Southeast Slope **Map Key** P25 **View Direction** Northeast **Description** View of billboard on Bayshore Blvd.	

Photos	
Location	
SA1 - Northeast Ridge	
Map Key	
none	
View Direction	
East	
Description	
View of stand of johnny jump-up (*Viola pedunculata*) in March 2020.	
Location	
SA2 – Southeast Slope	
Map Key	
none	
View Direction	
Northeast	
Description	
View of stand of johnny jump-up (*Viola pedunculata*) in March 2020.	

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APPENDIX A SUMMARY OF BIOLOGICAL RESOURCE REGULATIONS

Sensitive Status Species Regulations

Federally Protected Species

San Mateo County is home to several federally listed endangered and threatened plant and wildlife species. The U.S. Fish and Wildlife Service (USFWS) regulates the protection of federally listed endangered and threatened plant and wildlife species.

FE (Federally Endangered): A species that is in danger of extinction throughout all or a significant portion of its range.

FT (Federally Threatened): A species that is likely to become endangered in the foreseeable future.

FC (Federal Candidate): A species for which USFWS has sufficient information on its biological status and threats to propose it as endangered or threatened under the Endangered Species Act (ESA), but for which development of a proposed listing regulation is precluded by other higher priority listing activities.

FSC (Federal Species of Concern): A species under consideration for listing, for which there is insufficient information to support listing at this time. These species may or may not be listed in the future, and many of these species were formerly recognized as "Category-2 Candidate" species.

The USFWS requires permits for the "take" of any federally listed endangered or threatened species. "Take" is defined by the USFWS as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct; may include significant habitat modification or degradation if it kills or injures wildlife by significantly impairing essential behavioral patterns including breeding, feeding, or sheltering."

The Endangered Species Act (ESA) does not provide statutory protection for candidate species or species of concern, but USFWS encourages conservation efforts to protect these species. USFWS can set up voluntary Candidate Conservation Agreements and Assurances, which provide non-Federal landowners (public and private) with the assurance that if they implement various conservation activities to protect a given candidate species, they will not be subject to additional restrictions if the species becomes listed under the ESA.

State Protected Species

The California Department of Fish and Wildlife (CDFW) regulates the protection of endangered, threatened, and fully protected species listed under the California Endangered Species Act. Some species may be jointly listed under the State and Federal Endangered Species Acts.

SE (California Endangered): A native species or subspecies which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease.

ST (California Threatened): A native species or subspecies that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by this chapter. Any animal determined by the commission as "rare" on or before January 1, 1985, is a "threatened species."

SFP (California Fully Protected Species): This designation originated from the State's initial effort in the 1960's to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish, mammals, amphibians, reptiles, and birds. Most fully protected species have also been listed as threatened or endangered species under the more recent endangered species laws and regulations.

SR (California Rare): A species, subspecies, or variety of plant is rare under the Native Plant Protection Act when, although not presently threatened with extinction, it is in such small numbers throughout its range that it may become endangered if its present environment worsens. Animals are no longer listed as rare; all animals listed as rare before 1985 have been listed as threatened.

SSC (California Species of Special Concern): Animals that are not listed under the California Endangered Species Act, but which nonetheless 1) are declining at a rate that could result in listing, or 2) historically occurred in low numbers and known threats to their persistence currently exist.

The CDFW requires permits for the “take” of any State-listed endangered or threatened species. Section 2080 of the Fish and Game Code prohibits "take" of any species that the California Fish and Game Commission determines to be endangered or threatened. “Take” is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill."

The California Native Plant Protection Act protects endangered and rare plants of California. Section 1908, which regulates plants listed under this act, states: “no person shall import into this state, or take, possess, or sell within this state, except as incident to the possession or sale of the real property on which the plant is growing, any native plant, or any part or product thereof, that the commission determines to be an endangered native plant or rare native plant, except as otherwise provided in this chapter.”

Unlike endangered, threatened, and rare species, for which a take permit may be issued, California Fully Protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock.

The California Endangered Species Act does not provide statutory protection for California species of special concern, but they should be considered during the environmental review process.

California Rare Plant Ranks (RPR)

Plants with 1A, 1B, 2 or 4 should always be addressed in CEQA documents. Plants with a RPR 3 do not need to be addressed in CEQA documents unless there is sufficient information to demonstrate that a RPR 3 plant meets the criteria to be listed as a RPR 1, 2, or 4.

RPR 1A: Plants presumed to be extinct because they have not been seen or collected in the wild in California for many years. This list includes plants that are both presumed extinct in California, as well as those plants which are presumed extirpated in California. A plant is extinct in California if it no longer occurs in or outside of California. A plant that is extirpated from California has been eliminated from California, but may still occur elsewhere in its range.

RPR 1B: Plants that are rare throughout their range with the majority of them endemic to California. Most of the plants of List 1B have declined significantly over the last century.

RPR 2: Plants that are rare throughout their range in California, but are more common beyond the boundaries of California. List 2 recognizes the importance of protecting the geographic range of widespread species.

Plants identified as RPR 1A, 1B, and 2 meet the definitions of Sec. 1901, Chapter 10 (Native Plant Protection Act) or Secs. 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and are eligible for state listing.

RPR 3: A review list for plants for which there is inadequate information to assign them to one of the other lists or to reject them.

RPR 4: A watch list for plants that are of limited distribution in California.

Global and Subnational Rankings

Though not associated directly with legal protections, species have been given a conservation status rank by NatureServe, an international non-profit conservation organization that is the leading source for information about rare and endangered species and threatened ecosystems. The Ventura County Planning Division considers the following ranks as sensitive for the purposes of CEQA impact assessment (G = Global, S = Subnational or State):

G1 or S1 - Critically Imperiled

G2 or S2 – Imperiled

G3 or S3 - Vulnerable to extirpation or extinction

Migratory Bird Regulations

The Federal Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code (3503, 3503.5, 3511, 3513 and 3800) protect most native birds. In addition, the federal and state endangered species acts protect some bird species listed as threatened or endangered. Project-related impacts to birds protected by these regulations would normally occur during the breeding season, because unlike adult birds, eggs and chicks are unable to escape impacts.

The MBTA implements various treaties and conventions between the U.S. and Canada, Japan, Mexico, and Russia for the protection of migratory birds, which occur in two of these countries

over the course of one year. The Act maintains that it is unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or product, manufactured or not. Bird species protected under the provisions of the MBTA are identified by the List of Migratory Birds (Title 50 of the Code of Federal Regulations, Section 10.13 as updated by the 1983 American Ornithologists' Union (AOU) Checklist and published supplements through 1995 by the USFWS).

California Fish and Game Code 3513 upholds the MBTA by prohibiting any take or possession of birds that are designated by the MBTA as migratory nongame birds except as allowed by federal rules and regulations promulgated pursuant to the MBTA. In addition, there are California Fish and Game Codes (3503, 3503.5, 3511, and 3800) which further protect nesting birds and their parts, including passerine birds, raptors, and state "fully protected" birds.

NOTE: These regulations protect almost all *native nesting birds*, not just sensitive status birds.

Plant Community Regulations

Plant communities are provided legal protection when they provide habitat for protected species or when the community is in the coastal zone and qualifies as environmentally sensitive habitat area (ESHA).

Global and Subnational Rankings

Though not associated directly with legal protections, plant communities have been given a conservation status rank by NatureServe, an international non-profit conservation organization that is the leading source for information about rare and endangered species and threatened ecosystems. The Ventura County Planning Division considers the following ranks as sensitive for the purposes of CEQA impact assessment (G = Global, S = Subnational or State):

G1 or S1 - Critically Imperiled

G2 or S2 - Imperiled

G3 or S3 - Vulnerable to extirpation or extinction

CDFW Rare

Rare natural communities are those communities that are of highly limited distribution. These communities may or may not contain rare, threatened, or endangered species. Though the Native Plant Protection Act and the California Endangered Species Act provide no legal protection to plant communities, CDFW considers plant communities that are ranked G1-G3 or S1-S3 (as defined above) to be rare or sensitive, and therefore these plant communities should be addressed during CEQA review.

Environmentally Sensitive Habitat Areas

The Coastal Act specifically calls for protection of "environmentally sensitive habitat areas" or ESHA, which it defines as: "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" (Section 30107.5).

California Environmental Quality Act (CEQA)

The California Environmental Quality Act of 1970 requires public agencies to evaluate the environmental implications of their actions, and to prevent environmental effects by avoiding or reducing significant impacts of their decisions, where feasible. CEQA was intended to assist public agencies in systematically identifying both the significant effects of proposed projects and the feasible alternatives or feasible mitigation measures which will avoid or substantially lessen such significant effects. In enacting CEQA, the Legislature expressed a policy that public agencies should not approve projects as proposed if there are such feasible alternatives or mitigation measures. Among its goals, CEQA was intended "to preserve for future generations representations of all plant and animal communities" (Cal. Pub. Res. Code §21001c). Through this process impacts and mitigation to state and federally listed plant species are discussed.-

The California Native Plant Society (CNPS) has developed and maintains an inventory of rare, Threatened and Endangered plants of California. This information is published in the Inventory of Rare and Endangered Vascular Plants of California. The inventory presents a ranking system for rare plants within the state known as California Rare Plant Ranks. The CNPS inventory is endorsed by the CDFW and effectively serves as its list of "candidate" plant species. The following identifies the definitions of the California Rare Plant Ranks:

- Rank 1A: Plants presumed to be extinct in California;
- Rank 1B: Plants that are rare, Threatened, or Endangered in California and elsewhere;
- Rank 2: Plants that are rare, Threatened, or Endangered in California, but are more numerous elsewhere;
- Rank 3: Plants about which more information is needed (a review list): and
- Rank 4: Plants of limited distribution (a watch list).

Rank 1B and 2 species are considered eligible for state listing as Endangered or Threatened pursuant to the California Fish and Game Code. As part of the CEQA process, such species should be fully considered, as they meet the definition of Threatened or Endangered under the Native Plant Protection Act (NPPA) and Sections 2062 and 2067 of the California Fish and Game Code. Rank 3 and 4 species are considered to be either plants about which more information is needed or are uncommon enough that their status should be regularly monitored. Such plants may be eligible or may become eligible for state listing, and CNPS and CDFW recommend that these species be evaluated for consideration during the preparation of CEQA documents (CNPS 2001), as some of these species may meet NPPA and California Endangered Species Act criteria as Threatened or Endangered.

In addition, CEQA requires that impacts to "resources that are rare or unique to that region" be evaluated [CEQA Guidelines 15125(c)]. This includes botanical resources that are, but not limited to, peripheral populations and disjunct subpopulations. These are informal terms that refer to those species that might be declining or be in need of concentrated conservation actions to prevent decline, but have no legal protection of their own. Also, CEQA Guidelines Section 15380 states "a species not included in any listing…shall nevertheless be considered to be rare or Endangered if the species is likely to become Endangered within the foreseeable future

throughout all or a significant portion of its range and may be considered Threatened as that term is used in the ESA."

Waters and Wetlands Regulations

Numerous agencies control what can and cannot be done in or around streams and wetlands. If a project affects an area where water flows, ponds or is present even part of the year, it is likely to be regulated by one or more agencies. Many wetland or stream projects will require three main permits or approvals (in addition to CEQA compliance). These are:

•404 Permit (U.S. Army Corps of Engineers)

•401 Certification (California Regional Water Quality Control Board)

•Streambed Alteration Agreement (California Department of Fish and Game)

404 Permit (U.S. Army Corps of Engineers)

Most projects that involve streams or wetlands will require a 404 Permit from the U.S. Army Corps of Engineers (USACE). Section 404 of the federal Clean Water Act is the primary federal program regulating activities in wetlands. The Act regulates areas defined as "waters of the United States." This includes streams, wetlands in or next to streams, areas influenced by tides, navigable waters, lakes, reservoirs and other impoundments. For nontidal waters, USACE jurisdiction extends up to what is referred to as the "ordinary high water mark" as well as to the landward limits of adjacent Corps-defined wetlands, if present. The ordinary high water mark is an identifiable natural line visible on the bank of a stream or water body that shows the upper limit of typical stream flow or water level. The mark is made from the action of water on the streambank over the course of years.

Permit Triggers: A USACE 404 Permit is triggered by moving (discharging) or placing materials—such as dirt, rock, geotextiles, concrete or culverts—into or within USACE jurisdictional areas. This type of activity is also referred to as a "discharge of dredged or fill material."

401 Certification (Regional Water Quality Control Board)

If your project requires a USACE 404 Permit, then you will also need a Regional Water Quality Control Board (RWQCB) 401 Certification. The federal Clean Water Act, in Section 401, specifies that states must certify that any activity subject to a permit issued by a federal agency, such as the USACE, meets all state water quality standards. In California, the state and regional water boards are responsible for certification of activities subject to USACE Section 404 Permits.

Permit Trigger: A RWQCB 401 Certification is triggered whenever a USACE 404 Permit is required, or whenever an activity could cause a discharge of dredged or fill material into waters of the U.S. or wetlands.

Streambed Alteration Agreement (California Department of Fish and Game)

If your project includes alteration of the bed, banks or channel of a stream, or the adjacent riparian vegetation, then you may need a Streambed Alteration Agreement from the California

Department of Fish and Wildlife (CDFW). The California Fish and Game Code, Sections 1600-1616, regulates activities that would alter the flow, bed, banks, channel or associated riparian areas of a river, stream or lake. The law requires any person, state or local governmental agency or public utility to notify CDFW before beginning an activity that will substantially modify a river, stream or lake.

Permit Triggers: A Streambed Alteration Agreement (SAA) is triggered when a project involves altering a stream or disturbing riparian vegetation, including any of the following activities:

- Substantially obstructing or diverting the natural flow of a river, stream or lake
- Using any material from these areas
- Disposing of waste where it can move into these areas

Some projects that involve routine maintenance may qualify for long-term maintenance agreements from CDFW. Discuss this option with CDFW staff.

Locally Important Communities

The state passed legislation in 2001, the Oak Woodland Conservation Act, to emphasize that oak woodlands are a vital and threatened statewide resource. In response, the County of Ventura prepared and adopted an Oak Woodland Management Plan that recommended, among other things, amending the County's Initial Study Assessment Guidelines to include an explicit reference to oak woodlands as part of its definition of locally important communities. The Board of Supervisors approved this management plan and its recommendations.

APPENDIX B OBSERVED SPECIES TABLE

SPECIES NAME	COMMON NAME	NATIVE
PLANTS		
Acaena pinnatifida var. *californica*	California acaena	Native
Achillea millefolium	yarrow	Native
Aira caryophyllea	silver hairgrass	Non-Native
Agrostis hallii	Hall's bentgrass	Native
Allium serra	jeweled onion	Native
Artemisia californica	California sagebrush	Native
Avena barbata	slender oats	Non-Native
Baccharis pilularis subsp. *consanguinea*	coyote brush	Native
Brachypodium distachyon	false brome	Non-Native
Brassica nigra	black mustard	Non-Native
Briza maxima	rattlesnake grass	Non-Native
Briza minor	little quaking grass	Non-Native
Brodiaea terrestris subsp. *terrestris*	dwarf brodiaea	Native
Bromus diandrus	ripgut brome	Non-Native
Bromus hordeaceus	soft chess	Non-Native
Bromus laevipes	woodland brome	Native
Bromus rubens	foxtail chess	Non-Native
Bromus sitchensis var. *carinatus*	California brome	Native
Calystegia purpurata subsp. *purpurata*	purple western morning glory	Native
Calystegia subacaulis subsp. *subacaulis*	hill morning glory	Native
Cardamine oligosperma	bitter cress	Native
Carduus pycnocephalus subsp. *pycnocephalus*	Italian thistle	Non-Native
Carex cf, densa	sedge	Native
Centaurea melitensis	tocalote	Non-Native
Chlorogalum pomeridianum var. *pomeridianum*	soap plant	Native
Cirsium quercetorum	brownie thistle	Native
Cirsium vulgare	bull thistle	Non-Native
Clarkia rubicunda	farewell to spring	Native
Cotoneaster pannosus	silverleaf cotoneaster	Non-Native
Cyperus eragrostis	tall flatsedge	Native
Cytisus scoparius	scotch broom	Non-Native
Danthonia californica	California oatgrass	Native
Diplacus aurantiacus	bush monkeyflower	Native

SPECIES NAME	COMMON NAME	NATIVE
Dipterostemon capitatus subsp. *capitatus*	blue dicks	Native
Dryopteris arguta	wood fern	Native
Dudleya farinosa	bluff lettuce	Native
Elymus glaucus subsp. *glaucus*	blue wildrye	Native
Elymus triticoides	creeping wildrye	Native
Epilobium brachycarpum	tall annual willow-herb	Native
Epilobium ciliatum	fringed willowherb	Native
Erigeron foliosus var. *franciscensis*	San Francisco leafy fleabane	Native
Eriodictyon californicum	yerba santa	Native
Eriogonum latifolium	coast buckwheat	Native
Eriogonum nudum var. *auriculatum*	naked-stem buckwheat	Native
Eriophyllum confertiflorum var. *confertiflorum*	golden-yarrow	Native
Erodium botrys	long-beaked filaree	Non-Native
Eschscholzia californica	California poppy	Native
Eucalyptus globulus	bluegum	Non-Native
Festuca bromoides	brome fescue	Non-Native
Festuca perennis	Italian ryegrass	Non-Native
Foeniculum vulgare	fennel	Non-Native
Frangula californica subsp. *californica*	coffeeberry	Native
Fritillaria affinis	checker lily	Native
Galium aparine	bedstraw	Native
Genista monspessulana	French broom	Non-Native
Geranium dissectum	cut-leaf geranium	Non-Native
Helminthotheca echioides	bristly ox-tongue	Non-Native
Heteromeles arbutifolia	toyon	Native
Heterotheca sessiliflora subsp. *bolanderi*	Bolander’s goldenaster	Native
Hirschfeldia incana	hoary mustard	Non-Native
Horkelia californica subsp. *californica*	California horkelia	Native
Hypochaeris glabra	smooth cat's ear	Non-Native
Hypochaeris radicata	rough cat's ear	Non-Native
Iris douglasiana	Douglas' iris	Native
Juncus effusus subsp. *pacificus*	Pacific rush	Native
Juncus mexicanus	Mexican rush	Native
Juncus patens	common rush	Native
Lactuca serriola	prickly lettuce	Non-Native
Lactuca virosa	bitter lettuce	Non-Native
Logfia gallica	narrowleaf cottonrose	Non-Native
Lotus corniculatus	birdfoot trefoil	Non-Native
Lupinus albifrons var. *collinus*	silver bush lupine	Native
Lupinus formosus var. *formosus*	summer lupine	Native

SPECIES NAME	COMMON NAME	NATIVE
Lupinus variicolor	varied lupine	Native
Lysimachia arvensis	scarlet pimpernel	Non-Native
Marah fabacea	California man-root	Native
Melica californica	California melic grass	Native
Monardella villosa subsp. *franciscana*	San Francisco coyote mint	Native
Pentagramma triangularis	gold back fern	Native
Plantago erecta	dwarf plantain	Native
Plantago lanceolata	English plantain	Non-Native
Poa secunda subsp. *secunda*	one-sided bluegrass	Native
Polypogon monspeliensis	rabbitsfoot grass	Non-Native
Prunus ilicifolia	holly leaf cherry	Non-Native
Pseudognaphalium californicum	ladies tobacco	Native
Pteridium aquilinum var. pubescens	bracken fern	Native
Pyracantha angustifolia	narrow-leaf firethorn	Non-Native
Quercus agrifolia var. *agrifolia*	coast live oak	Native
Raphanus sativus	wild radish	Non-Native
Rubus ursinus	California blackberry	Native
Rumex acetosella	sheep sorrel	Non-Native
Rumex crispus	curly dock	Non-Native
Rumex pulcher	fiddle dock	Non-Native
Rytidosperma penicillatum	purple awned wallaby grass	Non-Native
Salix lasiolepis	arroyo willow	Native
Salvia spathacea	California hummingbird sage	Native
Sanicula crassicaulis	Pacific sanicle	Native
Scrophularia californica	bee plant	Native
Sidalcea malviflora	checkermallow	Native
Silene gallica	windmill pink	Non-Native
Silene scouleri var. *scouleri*	simple campion	Native
Solanum umbelliferum	blue witch	Native
Sonchus asper subsp. *asper*	prickly sowthistle	Non-Native
Sonchus oleraceus	common sowthistle	Non-Native
Stipa pulchra	purple needle grass	Native
Toxicodendron diversilobum	poison oak	Native
Trifolium hirtum	rose clover	Non-Native
Triteleia laxa	Ithuriel's spear	Native
Vicia americana subsp. *americana*	American vetch	Native
Vicia sativa subsp. *sativa*	spring vetch	Non-Native
Vicia villosa subsp. *varia*	vetch	Non-Native
Viola pedunculata	johnny jump-up	Native
Wyethia angustifolia	narrowleaf mule ears	Native

SPECIES NAME	COMMON NAME	NATIVE
ANIMALS		
Aphelocoma californica	California scrub jay	Native
Bombus sp.	bumblebee sp.[1]	Native
Buteo jamaicensis	red-tailed hawk	Native
Canus latrans	coyote[2]	Native
Cathartes aura	turkey vulture	Native
Corvus brachyrhynchos	American crow	Native
Haemorhous mexicanus	house finch	Native
Junco hyemalis	dark-eyed junco	Native
Sayornis nigricans	black phoebe	Native
Sceloporus occidentalis	western fence lizard	Native

[1]Was not able to identify species as it was only observed in flight for a brief moment.
[2]Scat.

APPENDIX C CNDDB LISTED SPECIES WITHIN 5 MILES OF THE SURVEY AREA

SCIENTIFIC NAME	COMMON NAME	SPECIES STATUS[1]
PLANTS		
Allium peninsulare var. *franciscanum*	Franciscan onion	CRPR 1B.2
Amsinckia lunaris	bent-flowered fiddleneck	CRPR 1B.2
Arctostaphylos franciscana	Franciscan manzanita	CRPR 1B.1
Arctostaphylos imbricata	San Bruno Mountain manzanita	SE, CRPR 1B.1
Arctostaphylos montana subsp. *ravenii*	Presidio manzanita	FE, SE, CRPR 1B.1
Arctostaphylos montaraensis	Montara manzanita	CRPR 1B.2
Arctostaphylos pacifica	Pacific manzanita	SE, CRPR 1B.1
Astragalus tener var. *tener*	alkali milk-vetch	CRPR 1B.2
Carex comosa	bristly sedge	CRPR 2B.1
Centromadia parryi subsp. *parryi*	pappose tarplant	CRPR 1B.2
Chorizanthe cuspidata var. *cuspidata*	San Francisco Bay spineflower	CRPR 1B.2
Chorizanthe robusta var. *robusta*	robust spineflower	FE, CRPR 1B.1
Cirsium andrewsii	Franciscan thistle	CRPR 1B.2
Cirsium occidentale var. *compactum*	compact cobwebby thistle	CRPR 1B.2
Collinsia corymbosa	round-headed Chinese-houses	CRPR 1B.2
Collinsia multicolor	San Francisco collinsia	CRPR 1B.2
Dirca occidentalis	western leatherwood	CRPR 1B.2
Fritillaria liliacea	fragrant fritillary	CRPR 1B.2
Gilia capitata subsp. *chamissonis*	blue coast gilia	CRPR 1B.1
Gilia millefoliata	dark-eyed gilia	CRPR 1B.2
Grindelia hirsutula var. *maritima*	San Francisco gumplant	CRPR 3.2
Helianthella castanea	Diablo helianthella	CRPR 1B.2
Hemizonia congesta subsp. *congesta*	congested-headed hayfield tarplant	CRPR 1B.2
Hesperevax sparsiflora var. *brevifolia*	short-leaved evax	CRPR 1B.2
Heteranthera dubia	water star-grass	CRPR 2B.2
Horkelia cuneata var. *sericea*	Kellogg's horkelia	CRPR 1B.1
Horkelia marinensis	Point Reyes horkelia	CRPR 1B.2
Layia carnosa	beach layia	FE, SE, CRPR 1B.1
Leptosiphon rosaceus	rose leptosiphon	CRPR 1B.1
Lessingia germanorum	San Francisco lessingia	FE, SE, CRPR 1B.1
Malacothamnus arcuatus	arcuate bush-mallow	CRPR 1B.2
Monardella sinuata subsp. *nigrescens*	northern curly-leaved monardella	CRPR 1B.2
Pentachaeta bellidiflora	white-rayed pentachaeta	FE, SE, CRPR 1B.1

SCIENTIFIC NAME	COMMON NAME	SPECIES STATUS[1]
Plagiobothrys chorisianus var. *chorisianus*	Choris' popcornflower	CRPR 1B.2
Sanicula maritima	adobe sanicle	CRPR 1B.1
Senecio aphanactis	chaparral ragwort	CRPR 2B.2
Silene scouleri subsp. *scouleri*	Scouler's catchfly	CRPR 2B.2
Silene verecunda subsp. *verecunda*	San Francisco campion	CRPR 1B.2
Suaeda californica	California seablite	FE, CRPR 1B.1
Trifolium amoenum	two-fork clover	FE, CRPR 1B.1
Triphysaria floribunda	San Francisco's owl clover	CRPR 1B.2
Triquetrella californica	coastal triquetrella	CRPR 1B.2
WILDLIFE		
INVERTEBRATES		
Adela oplerella	Opler's longhorn moth	SA
Banksula incredula	incredible harvestman	SA
Bombus occidentalis	western bumble bee	SCE, Xerces-IM
Bombus caliginosus	obscure bumble bee	SA
Caecidotea tomalensis	Tomales isopod	SA
Callophrys mossii bayensis	San Bruno elfin butterfly	FE, CH, Xerces-CI
Cicindela hirticollis gravida	sandy beach tiger beetle	SA
Dufourea stagei	Stage's dufourine bee	SA
Euphydryas editha bayensis	bay checkerspot butterfly	FT, CH, Xerces-CI
Hydroporus leechi	Leech's skyline diving beetle	SA
Icaricia icarioides missionensis	Mission blue butterfly	FE, CH, Xerces-CI
Ischnura gemina	San Francisco forktail damselfly	SA
Speyeria callippe callippe	callippe silverspot butterfly	FE, Xerces-CI
Trachusa gummifera	San Francisco Bay Area leaf-cutter bee	SA
FISH		
Eucyclogobius newberryi	tidewater goby	FE, SSC
Mylopharodon conocephalus	Hardhead	SSC
AMPHIBIANS		
Rana boylii	Foothill yellow-legged frog	SE
Rana draytonii	California red-legged frog	FT, CH, SSC
REPTILES		
Actinemys marmorata	Western pond turtle	SSC
Thamnophis sirtalis tetrataenia	San Francisco garter snake	FE, SE, FP
BIRDS		
Falco peregrinus anatum	American peregrine falcon	FP, BCC
Geothlypis trichas sinuosa	saltmarsh common yellowthroat	SSC, BCC
Laterallus jamaicensis coturniculus	California black rail	FP, ST, BCC
Melospiza melodia pusillula	Alameda song sparrow	SSC, BCC

SCIENTIFIC NAME	COMMON NAME	SPECIES STATUS[1]
Phalacrocorax auritus	double-crested cormorant (rookery site)	WL
Rallus obsoletus	Ridgway's rail	FE, SE, FP
Riparia riparia	bank swallow	ST
MAMMALS		
Antrozous pallidus	pallid bat	SSC, WBWG-H
Corynorhinus townsendii	Townsend's big-eared bat	SSC, WBWG-H
Erethizon dorsatum	North American porcupine	SA
Lasiurus cinereus	hoary bat	SA, WBWG-M
Myotis thysanodes	fringed myotis	WBWG-H
Neotoma fuscipes annectens	San Francisco dusky-footed woodrat	SSC
Taxidea taxus	American badger	SSC

Explanation of State and Federal Listing Codes

Federal Listing Codes:

FE	Federally listed as Endangered
FT	Federally listed as Threatened
FPE	Federally proposed for listing as Endangered
FPT	Federally proposed for listing as Threatened
FPD	Federally proposed for delisting
FC	Federal candidate for listing
SC	Species of Concern (NOAA Fisheries only)
CH	Critical Habitat (Proposed or Final) is designated

California Listing Codes:

SE	State listed as Endangered
ST	State listed as Threatened
SCE	State candidate for listing as Endangered
SCT	State candidate for listing as Threatened
SCD	State candidate for delisting
SSC	California Species of Special Concern
FP	Fully Protected
WL	Watch List

Other Listing Codes:

BCC U.S. Fish and Wildlife Service Birds of Conservation Concern. List of migratory and nonmigratory bird species (beyond those already designated as federally threatened or endangered) that represent the Service's highest conservation priorities.

SA "Special Animals" is a general term that refers to all of the taxa the CNDDB is interested in tracking, regardless of their legal or protection status. This list is also referred to as the list of "species at risk" or "special status species". The Department of Fish and Wildlife considers the taxa on this list to be those of greatest conservation need.

WBWG Western Bat Working Group: H – High Priority indicates species that are imperiled or are at high risk of imperilment based on available information on distribution, status, ecology and known threats; M – Medium Priority indicates a lack of information to assess the species' status; L – Low Priority indicates relatively stable populations based on available data. The WBWG also uses intermediary designations including MH – Medium-High and LM – Low-Medium priorities.

Xerces Xerces Society for Invertebrate Conservation. Red List identifies endangered, threatened or at-risk pollinator species. PE – Possibly Extinct indicates species only known from historical occurrences; CI – Critically Imperiled indicates species at very high risk of extinction; I – Imperiled indicates species at high risk of extinction; V – Vulnerable indicates species at moderate risk of extinction; DD – Data Deficient indicates lack of information to sufficiently assess status.

CRPR California Native Plant Society Rare Plant Rank:
1B: Plants that are rare, Threatened, or Endangered in California and elsewhere;
2: Plants that are rare, Threatened, or Endangered in California, but are more numerous elsewhere;
4: Plants of limited distribution (a watch list).
.1: Seriously Endangered in California (over 80% of occurrences Threatened / high degree and immediacy of threat)
.2: Fairly Endangered in California (20-80% occurrences Threatened)
.3: Not very Endangered in California (<20% of occurrences Threatened or no current threats known)

APPENDIX D U.S. FISH AND WILDLIFE SERVICE SPECIES LIST

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To: July 30, 2020
Consultation Code: 08ESMF00-2020-SLI-2508
Event Code: 08ESMF00-2020-E-07720
Project Name: San Bruno Mountain Grazing Pilot Study

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

Project Summary

Consultation Code: 08ESMF00-2020-SLI-2508

Event Code: 08ESMF00-2020-E-07720

Project Name: San Bruno Mountain Grazing Pilot Study

Project Type: VEGETATION MANAGEMENT

Project Description: The proposed project involves introducing cattle grazing at two locations within the San Bruno Mountain Habitat Conservation Plan (SBMHCP) area as a tool for enhancing habitat for federally-endangered butterfly species.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/37.68294681887194N122.40596226815042W

Counties: San Mateo, CA

Endangered Species Act Species

There is a total of 23 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Salt Marsh Harvest Mouse *Reithrodontomys raviventris* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/613	Endangered
Southern Sea Otter *Enhydra lutris nereis* No critical habitat has been designated for this species. ***This species is also protected by the Marine Mammal Protection Act, and may have additional consultation requirements.*** Species profile: https://ecos.fws.gov/ecp/species/8560	Threatened

Birds

NAME	STATUS
California Clapper Rail *Rallus longirostris obsoletus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4240	Endangered
California Least Tern *Sterna antillarum browni* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8104	Endangered
Marbled Murrelet *Brachyramphus marmoratus* Population: U.S.A. (CA, OR, WA) There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4467	Threatened
Short-tailed Albatross *Phoebastria (=Diomedea) albatrus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/433	Endangered
Western Snowy Plover *Charadrius nivosus nivosus* Population: Pacific Coast population DPS-U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific coast) There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8035	Threatened

Reptiles

NAME	STATUS
Green Sea Turtle *Chelonia mydas* Population: East Pacific DPS No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6199	Threatened
San Francisco Garter Snake *Thamnophis sirtalis tetrataenia* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5956	Endangered

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891 Species survey guidelines: https://ecos.fws.gov/ipac/guideline/survey/population/205/office/11420.pdf	Threatened

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened
Tidewater Goby *Eucyclogobius newberryi* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/57	Endangered

Insects

NAME	STATUS
Bay Checkerspot Butterfly *Euphydryas editha bayensis* There is **final** critical habitat for this species. Your location overlaps the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2320	Threatened
Callippe Silverspot Butterfly *Speyeria callippe callippe* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3779	Endangered
Mission Blue Butterfly *Icaricia icarioides missionensis* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/6928	Endangered
Myrtle's Silverspot Butterfly *Speyeria zerene myrtleae* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6929	Endangered
San Bruno Elfin Butterfly *Callophrys mossii bayensis* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3394	Endangered

Flowering Plants

NAME	STATUS
Franciscan Manzanita *Arctostaphylos franciscana* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5350	Endangered
Presidio Manzanita *Arctostaphylos hookeri var. ravenii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7216	Endangered
Robust Spineflower *Chorizanthe robusta var. robusta* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9287	Endangered
San Francisco Lessingia *Lessingia germanorum (=L.g. var. germanorum)* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8174	Endangered
Showy Indian Clover *Trifolium amoenum* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6459	Endangered
White-rayed Pentachaeta *Pentachaeta bellidiflora* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7782	Endangered

Critical habitats

There is 1 critical habitat wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Bay Checkerspot Butterfly *Euphydryas editha bayensis* https://ecos.fws.gov/ecp/species/2320#crithab	Final