

Attachment B

Shelterwood Bearpen CalVTP # 2022 - 34

Biological Resource Assessment

- ❖ The following are all rare, threatened, endangered, and Species of Special Concern known to occur within the 9-quads queried. Information was taken from up-to-date CNDDDB and CNPS listings.

Birds

- A note on birds of prey and the treatments proposed on this project: The treatments proposed will have very little effect on the habitat types these species rely on. Most of the treatments are focused on removing dead and down debris, along with understory vegetation. The result will be the creation of better foraging habitat for birds of prey, due to the decrease in places for food sources to hide, which is currently at elevated levels. LWD will be retained throughout the units, as it is infeasible to treat all of this material. Also, LWD is not responsible for causing high intensity wildfire. This will ensure habitat is retained for prey species.

These species usually create nests high off the ground in large old trees. These types of trees are not targeted for removal unless they are a rotten snag near a ridgeline fuel break or pose a safety risk to people or property. These trees will be assessed by an RPF or qualified biologist prior to removal.

Osprey (*Pandion haliaetus*)

Status: Board of Forestry Sensitive

Habitat Requirements: Some ospreys are year-round residents in Sonoma County, while the majority overwinter in Mexico and South America. Ospreys are strictly associated with large, fish-bearing waters, primarily in ponderosa pine through mixed conifer habitat types. Osprey are only able to dive up to three feet in depth, hence are typically associated with shallow fishing areas. These birds require open, clear water for foraging, such as rivers, lakes, reservoirs, estuaries, lagoons, swamps, marshes, and bays. Large trees, snags, and blown-out tree tops in open forest habitats are used for cover and nesting. Tall, open-branched “pilot trees” are required nearby for landing before approaching the nest and for practice by the young (Zeiner et al. 1990a). Nests are a platform of sticks near or on the top of large snags, blown-out trees, cliffs, or on human-made structures. Nests are usually next to fish-bearing water, however may be up to twelve miles away. Nests may be used year after year thus producing a large nest. Nest trees in California range from 30 to 81 inches dbh with nest heights averaging 135 feet (Airola and Shubert 1981). The osprey breeds in northern California from the Cascade Ranges south to Lake Tahoe, and along the coast to Marin County.

Potential for Occurrence: There is a low to moderate potential for this species habitat within the project area. Low quality foraging does occur within Bearpen creek, which is a class I watercourse. This feeds into Austin creek, which is approximately 1.5 air miles from the plan area. Austin creek provides higher quality foraging habitat, increasing the likelihood of resident Osprey occurring in and around the plan area. No individuals or nests were observed during field reconnaissance and the closest known occurrence is over 3 miles from the project boundary.

Potential Project Impact: The potential for the proposed activities to impact this species is highly unlikely (see note on birds of prey above). If habitat occurs within the treatment units, watercourse and wetland protection measures along with BIO SPRs will prevent damage to this species foraging habitat, through the prevention of sedimentation of downstream fish habitat.

Also, large wildlife trees will be retained throughout the project area to provide potential high quality nesting habitat.

White-Tailed Kite (*Elanus leucurus*)

Status: SSC

Habitat Requirements: White-tailed kites are yearlong residents in coastal and valley lowlands and are rarely found away from agricultural areas. White-tailed kites inhabit herbaceous and open stages of most habitats mostly in cismontane California. White-tailed kites forage for voles and other rodents in undisturbed, open grasslands, meadows, farmlands, and emergent wetlands (Waian and Stendall 1970). Nests are made of loosely piled sticks and twigs and lined with grass or straw. Nests are placed near the top of dense broadleaved deciduous trees, approximately 6-20 meters above ground.

Potential for Occurrence: There is a low to moderate potential for occurrence in or near the project area. Areas which would make ideal nests were examined (i.e. large snags with broken or flat tops) and no nests or individual occurrences were observed. The closest known occurrence is more than 3 miles from the project boundary.

Potential Project Impact: Due to the scope of treatments proposed, there is no potential for impact to this species (see note on birds of prey above). With the implementation of the SPRs listed in the PSA, it is not anticipated there would be a significant negative impact to this species or its habitat.

Great Blue Heron (*Ardea herodias*)

Status: SSC

Habitat Requirements: Great blue herons are common in shallow estuaries, and fresh and saline emergent wetlands. Foraging areas include river and creek banks, ponds, lakes, and watercourses in mountainous areas. Nest trees are called “rookery” trees; *A. herodias* is a colonial nester. This species requires lakes, ponds, streams, rivers, marshes, or wet meadows for foraging on aquatic invertebrates, frogs, snakes, and fish (Cogswell 1977). Great blue herons are yearlong residents of Sonoma County.

Potential for Occurrence: There is a low potential for this species to occur within the project area. There are no ponds or lakes within or near the project. Bearpen creek provides low quality great blue heron habitat, as they tend to prefer lakes, ponds, marshes, and rivers. The closest known occurrence is over 3 miles from the project.

Potential Project Impact: Due to the scope of treatments proposed and the low potential for occurrence, there is no potential for impact to this species.

Bank swallow (*Riparia riparia*)

Status: California Threatened

Habitat Requirements: Bank swallows are primarily found in riparian and other lowland habitats. They forage predominantly over open riparian areas, but also over brushland, grassland, wetlands, water, and cropland. They nest in large colonies, usually alongside riverbanks, road cuts, or other cliff side areas. Colonies can be recognized by the characteristic holes bored directly into the cliff or bank, throughout the nesting site.

Potential for Occurrence: There is a low to moderate potential for this species to occur within the project area, most likely near Bearpen creek. Banks and overhangs where surveyed, looking for characteristic nest sites. No individuals or nest colonies were located and the closest known occurrence is more than 3 miles from the project area.

Potential Project Impact: Low. Treatments will be minimal if at all around steep banks, due to instability present at those locations and the intention to prevent further instability. If located, the RPF or qualified biologist will develop a no disturbance buffer to prevent take.

Marbled murrelet (*Brachyramphus marmoratus*)

Status: Federally Threatened; State Endangered

Habitat Requirements: Sonoma County falls within zone 5 of the marbled murrelet recovery effort. Marbled murrelets forage in the ocean often close to shore during the summer months. In the nonbreeding season, murrelets often forage farther from shore. Marbled murrelets will fly inland (up to 35 miles) to nest in late seral stage forests or forests with late seral stage characteristics (Zeiner et al. 1990a). Murrelet nests are a depression partly encircled by guano. Nests are commonly located on large-horizontal limbs in Douglas-fir and redwood trees. Limbs covered by moss or lichens provide stability for the egg and chick. In addition, nests have been located on witch's broom (mistletoe), old squirrel nests, and on large burls that have collected organic debris. Murrelet nests have been found in as few as 4 acres of late seral redwood/Douglas-fir stands; however, US Fish and Wildlife Service has determined that for the long-term survival of the species, greater than 500 acres of old growth forest (late seral connected canopy) is required. Potential nest trees are greater than 32" dbh, as large diameter trees are necessary for potential nesting platforms. Over 40% overstory canopy cover is necessary to protect the nest site from predation and other environmental conditions. The breeding season is between March 24th to September 15th.

Potential for Occurrence: Low potential. The project area lacks the high-quality habitat required for this species. There is a patch of ~ 3 acres of old growth trees in the southwest corner of section 36, but the large nesting platforms are generally lacking throughout the area. Also, due to the small size of this area and the lack of cover throughout, the habitat function is very low.

During the UCCR Camp Cazadero THP # 1-03-169 SON, a Marbled Murrelet protocol survey was conducted and it was determined, at that time, that this species was not present and MAMU habitat was of low quality. CDFW was consulted via email on 4/18/23 for technical assistance regarding this area. A site visit was conducted with CDFW to determine the suitability of the potential habitat for Marbled Murrelet. See attached letter on the following pages.



June 8, 2023

Nikola Alexandre
 Shelterwood Collective
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Subject: Marbled Murrelet Pre-Consultation for the Proposed Shelterwood Bearpen CalVTP, Bearpen Creek Watershed, Sonoma County

Dear Nikola Alexandre:

This letter responds to a request from Registered Professional Forester (RPF), Jacob Harrower, on behalf of the Shelterwood Collective for a marbled murrelet (*Brachyramphus marmoratus*) consultation with the California Department of Fish and Wildlife (CDFW) for the Shelterwood Bearpen California Vegetation Treatment Program (CalVTP) project (2022-34; not yet approved) in Sonoma County.

The marbled murrelet is listed as state endangered pursuant to Fish and Game Code 2050 *et seq.*, federally threatened pursuant to Title 16, United States Code 1531 *et seq.*, and is a sensitive species as defined by Title 14, California Code of Regulations (14 CCR) § 895.1. As **Trustee** for the State's fish and wildlife resources, CDFW has jurisdiction over the conservation, protection and management of fish, wildlife, native plants, and the habitat necessary for biologically sustainable populations of such species. The purpose of this consultation is to determine if the proposed CalVTP fuel reduction project has the potential to take¹ or adversely affect the marbled murrelet.

The marbled murrelet is a small seabird, which, in California, uses coastal coniferous forests from Del Norte to Santa Cruz counties during the breeding season (March 24 to September 15). Marbled murrelets have been documented nesting in mature, old-growth forests as well as younger forest stands with late-seral elements such as large trees with moss-covered limbs greater than 6 inches wide or limb defects (McShane *et al.* 2004). Mature conifer stands often have a complex tree crown structure with gaps in the canopy that allow access by adult murrelets to and from nest platforms during parental incubation exchanges and chick feeding (Ralph *et al.* 1995).

¹ Pursuant to Fish and Game Code section 86, "take" means hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill."

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PROJECT LOCATION

The proposed CalVTP project is located on private property owned and operated by the Shelterwood Collective non-profit organization. The Shelterwood Bearpen CalVTP project area (Figure 1) is located approximately 7 air miles from the Pacific Ocean in Sonoma County (Sections 25, 26, 35, and 36, Township 9N, Range 12W, MDB&M, USGS 7.5" Fort Ross Quad). The 831-acre property serves as a community forest and collective and is currently under development for a community retreat center. The property is situated approximately 3.5 air miles northeast of the Town of Cazadero. The entire project area is within the Bearpen Creek watershed, which delivers into Austin Creek approximately 0.6 miles east of the property, and eventually into the Russian River. The elevation ranges between 400 and 2,040 feet above sea level. Bearpen Creek runs through portions of the eastern and northern sections of the property, with tributaries to Bearpen Creek extending throughout the interior.

PROJECT DESCRIPTION

The CalVTP is a statewide program that includes the use of prescribed burning, mechanical treatments, manual treatments, herbicides, and prescribed herbivory as tools to reduce hazardous vegetation around communities in the Wildland-Urban Interface (WUI), to construct fuel breaks, and for ecological restoration. The CalVTP Programmatic Environmental Impact Report (Programmatic EIR) provides a California Environmental Quality Act (CEQA) pathway to expedite the implementation of these vegetation treatments. RPF Jacob Harrower is preparing a Project Specific Analysis (PSA) as an addendum to the EIR for proposed vegetation management activities in the Shelterwood Bearpen CalVTP project area.

Project activities will include the construction of fuel breaks aimed at reducing the risk of wildfire impacts and severity within the project area and ecological restoration sites designed to restore the ecosystem to a historical state using treatments that mimic the historic fire regime. Treatment activities will include mechanical, manual, herbicide application, prescribed burning, and prescribed herbivory.

Fuel break treatments include construction of 100-foot shaded fuel breaks on both sides of trails, roads, and ridgelines. Treatments in shaded fuel break areas will consist of removing understory vegetation, ladder fuels, and trees up to 6 inches in diameter while maintaining a high degree of canopy cover. Removed material will be chipped, burned, or lopped and scattered. Ecological restoration will vary depending on site requirements, and will consist of prescribed herbivory, manual, mechanical, and prescribed burning treatments. The objective of the ecological restoration treatment is to reduce the density of trees, shrubs and invasives to allow native trees and grasslands to re-establish in areas that have been overstocked, or encroached upon, as a result of

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fire-exclusion. Treatment within the ecological restoration units will focus on removing ground and ladder fuels to allow broadcast burning to be used as a maintenance treatment without threatening the larger trees and overall canopy health.

There is no recent record of wildfire on the property; however, much of the surrounding area has burned in wildfires over the past 80 years. The Creighton Ridge fire burned areas to the south in 1978, an unnamed wildfire burned areas to the north in 1945, and most recently, the Walbridge fire burned areas to the northeast in 2020. As a result of fire exclusion and an absence of vegetation management, the property has developed overstocked stands and dense understory vegetation leading to increased competition and a reduction in forest health.

MARBLED MURRELETS IN THE BEARPEN CREEK, UPPER MARSHALL CREEK, AND EAST AUSTIN CREEK WATERSHEDS

Marbled murrelets are known to occur within Sonoma County, yet available information on presence and occupancy near the project area is limited. The Russian River, approximately 10 miles south of the project area, and its tributaries, act as a potential flyway for marbled murrelets traveling from the ocean to inland nesting habitat. The nearest known location of marbled murrelet presence and occupancy is approximately 12 miles northwest of the project area (CDFW file information).

U.S. Fish and Wildlife Service (USFWS) designated Critical Habitat for the marbled murrelet (USFWS 2011) can be found at Armstrong Redwoods State Natural Reserve, approximately three miles east of the proposed CalVTP project area in the East Austin Creek watershed (Figure 2). CDFW has documented suitable marbled murrelet nesting habitat during consultation for a timber harvest plan within five miles of the project area in the nearby watershed of Upper Marshall Creek (Mohrhardt Ranch, Figure 2). A summary of past CDFW marbled murrelet consultations is summarized in Appendix A.

MARBLED MURRELET PAST HABITAT ASSESSMENT AND SURVEY HISTORY

A small three acre stand of old-growth and large diameter conifer trees is located along the lower slopes and streambanks of a tributary to Bearpen Creek which flows through the middle of the Shelterwood Collective property (Figure 1). The potential habitat area (hereafter known as the Shelterwood Habitat Stand), was first assessed by CDFW staff on June 20, 2000, following a technical assistance request to review the survey station locations for the second year of a two-year protocol level survey for marbled murrelets that had begun in 1999. The area was being surveyed for the subsequent Camp Cazadero timber harvest plan (1-03-169 SON). The survey reports submitted to CDFW by the consulting biologists (Mad River Biologists 2002) indicated no murrelet detections were made in 1999 and 2000.

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According to the CDFW Technical Assistance letter (CDFW 2000), only the survey station locations were inspected during the site visit. The letter does not reference any assessment of potential murrelet nesting habitat nor provide any nesting habitat suitability determination. Therefore, the murrelet nesting habitat assessment performed for this CalVTP project is hereafter presumed to characterize current existing habitat conditions, with no influence from any previous assumed habitat determinations.

MARbled MURRELET HABITAT ASSESSMENT OF THE PROJECT AREA

On May 12, 2023, CDFW Senior Environmental Scientist, Robynn Swan, and Environmental Scientist, Katanja Waldner, accompanied Jacob Harrower, RPF, and Nikola Alexandre with the Shelterwood Collective on a site visit and conducted a habitat assessment within the project area to determine if CalVTP fuel reduction activities will have an impact on marbled murrelet. During the site visit, trees and stand characteristics were assessed for habitat features meeting the definition of “suitable habitat”, as outlined in the Pacific Seabird Group’s “Methods for Surveying Marbled Murrelets in Forests” (“survey protocol”, Evans Mack 2003).

SHELTERWOOD HABITAT STAND ASSESSMENT

The Shelterwood Habitat Stand identified by the RPF and assessed by CDFW is located along an unnamed Class II watercourse tributary to Bearpen Creek at the southern end of the property (Figure 1). The stand is partially encircled by a seasonal road which is used to access areas of the property for fuel reduction and management, and for hiking and camping activities.

The existing forest conditions observed in the Shelterwood Habitat Stand consist of a predominately second-growth conifer forest dominated by coast redwood and Douglas-fir with scattered large diameter coast redwoods and Douglas-fir. The stand is located on the lower 1/3 of the slope, adjacent to a watercourse with a moderately closed canopy. As the stand extends uphill to the south, the trees become increasingly exposed and canopy closure decreases. Trees in the stand were observed to have predominantly rounded branches, absent of duff or moss. Overall, the limbs in the stand were relatively small, with a few larger limbs around 4 to 6 inches in diameter. However, these larger limbs were observed to be downturned and exposed, lacking cover from adjacent screen trees necessary for nest protection from inclement weather and predators.

One medium diameter Douglas-fir tree with a forked top was identified with a branching structure that has at least one large diameter, deformed “J” limb suitable to support a nest. However, the tree was exposed, lacking adjacent screen trees to provide lateral and foliar cover to the platform. Based on the site visit observations, CDFW has determined the Shelterwood Habitat Stand does not contain suitable nesting habitat for the marbled murrelet at this time.

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WILDLIFE TREE AND HABITAT FEATURES RETENTION

Although the Shelterwood Habitat Stand does not support suitable marbled murrelet nesting habitat at this time, the habitat elements could provide such habitat in the future as the forest regenerates. Large diameter mature trees are often part of a highly fragmented landscape. Retention of these legacy trees maintains and promotes the development of structural complexities that provide nesting, shelter, and foraging habitat to a variety of wildlife species (Mazurek and Zielinski 2004).

The CalVTP proposes ecological restoration treatments within the Shelterwood Habitat Stand that consists of the use of hand tools to prepare the project area for prescribed burning treatment activities (pile and broadcast). The proposed fuel reduction treatments are expected to benefit the habitat stand by reducing and thinning out competing vegetation and opening the surrounding canopy. This reduction in competition will allocate more resources to the residual large diameter trees within the stand, and aid in developing stand conditions favorable for murrelet nesting in the future.

Therefore, CDFW recommends that during CalVTP treatment activities any residual conifers with large limbs and other habitat values be retained as wildlife trees to promote and recruit future special habitat elements. CDFW also recommends the retention of any screen trees and overlapping canopy trees that do not pose a wildfire risk, as they are likely to provide future protection to habitat by reducing wind, protecting from inclement weather, providing shade to potential nest sites, and reducing exposure to nest predators.

CORVID PREDATION

CDFW recommends that measures be taken within the project area and throughout the property to avoid attracting predators of marbled murrelets as a result of project activities. Ravens, crows, and jays, which have large home ranges, are known predators of marbled murrelet eggs and nestlings (Marzluff and Neatherlin 2006). CDFW recommends all garbage and food scraps be packed out and disposed of in animal-proof containers. All efforts should be made to keep project areas devoid of any material which could potentially attract known marbled murrelet predators.

RECOMMENDATIONS

Based on observations during the habitat assessment, CDFW has determined the conditions within the Shelterwood Habitat Stand do not support suitable marbled murrelet nesting habitat at this time. Shelterwood Bearpen CalVTP fuel reduction treatment activities within the Shelterwood Habitat Stand may facilitate stand development into suitable habitat over time; therefore, habitat inspected by CDFW

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during consultations and determined to be not suitable at the time of the consultation is subject to re-evaluation. Due to the current conditions of the Shelterwood Habitat Stand and the proposed fuel reduction treatments, CDFW recommends the habitat be subject to re-evaluation after a period of ten (10) years. CDFW recommends that the following measures be incorporated into Shelterwood Bearpen CalVTP project:

1. The Shelterwood Habitat Stand shall be considered not suitable marbled murrelet nesting habitat for a period of ten (10) years;
2. Following the first ten (10) years after CalVTP fuel reduction activities begin, CDFW shall be contacted and consulted for re-evaluation of habitat suitability for the marbled murrelet. This consultation shall occur in 2033;
3. During fuel reduction treatments within the Shelterwood Habitat Stand, any non-hazard trees that do not require removal and exhibit canopy deformities or large diameter limbs shall be retained as wildlife trees. Where feasible, screen trees and overlapping canopy trees shall be retained to provide protection from wind and predators;
4. Prior to fuel reduction treatment activities, the location of retained wildlife trees within the Shelterwood Habitat Stand shall be conveyed to crew members to ensure that the identified wildlife habitat is not impacted during fuel reduction treatment activities;
5. To avoid attracting predators of marbled murrelets, all garbage and food scraps shall be packed out and disposed of in animal-proof containers and transported off-site daily; and
6. Prior to fuel reduction treatment activities, the RPF or designee shall inform all timber harvesting and vegetation management crews of the above recommendations through a pre-project meeting.

Consultation with CDFW is required if the location and boundary lines of the project area are modified, or if CDFW receives any new information regarding marbled murrelet occurrences near the project location. CDFW's evaluation and recommendations are consistent with recovery objectives and goals of the Marbled Murrelet Recovery Plan (USFWS 1997). The recommendations in this report apply to this CalVTP project alone. Additional or modified measures may be recommended for future CalVTP projects.

If you have questions or comments, please contact Katanja Waldner, Environmental Scientist, at (707) 576-2793 or Katanja.Waldner@wildlife.ca.gov; Robynn Swan, Senior Environmental Scientist (Specialist), at (707) 210-4467 or

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Robynn.Swan@wildlife.ca.gov; or Julie Coombes, Senior Environmental Scientist (Supervisory), at (707) 576-2825 or Julie.Coombes@wildlife.ca.gov.

Sincerely,

DocuSigned by:
Erin Chappell
B77E9A6211EF486
Erin Chappell
Regional Manager
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Attachment

ec:

Jacob Harrower, Frontier Resource Management – Jacob@frmforestry.com
Jason Wells, Sonoma County Resource Conservation District – Jwells@sonomarc.org

REFERENCES

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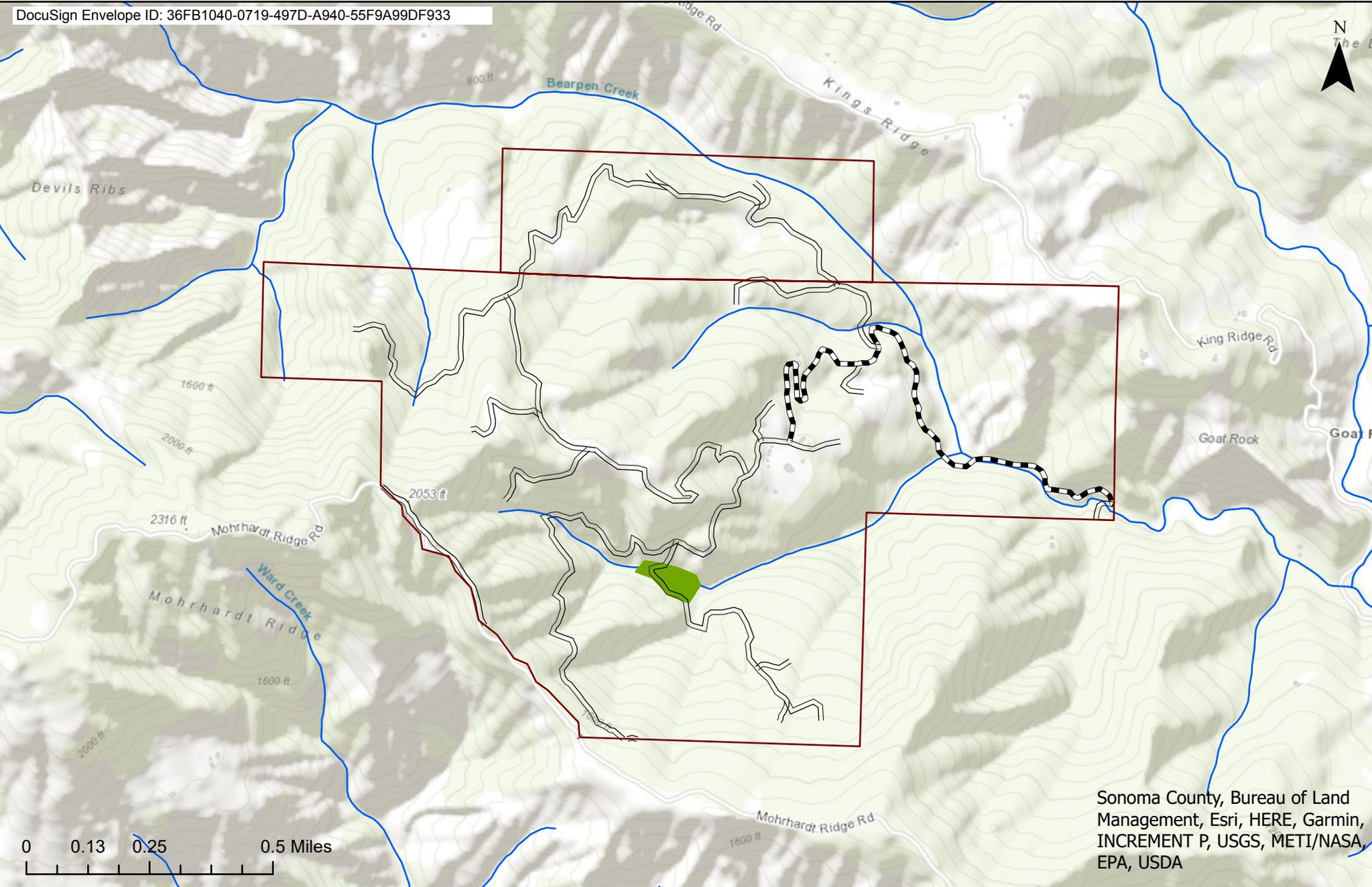
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APPENDIX A

CDFW Marbled Murrelet Consultations within five miles of the project in the nearby watersheds of Bearpen Creek, Ward Creek, and Upper Marshall Creek

The table is a summary of CDFW Marbled Murrelet consultations for timber harvest plans (THPs) and other projects within five miles of the project area. This information includes the status of murrelet occupancy within the stand determined at the time of the consultation.

Stand Name	Project	Watershed(s)	Status	Habitat Description	Reference
Camp Cazadero	1-03-169 SON	Bearpen Creek	Suitable Habitat	Several stands of old-growth redwoods and Douglas-firs	CDFW consultation letter dated September 11, 2000.
Martinelli Ranch THP	Proposed, Not Yet Filed	Upper Marshall Creek	Suitable Habitat	Large diameter Douglas-fir and Redwood trees with large suitable nesting platforms and adequate cover and screen trees.	CDFW consultation letter dated August 28, 2019.
Mohrhardt Ranch	1-21NTMP-00006 SON	Bearpen & Ward Creek	Not Suitable Habitat	Large diameter conifers with a variety of potentially suitable platforms. Surrounding canopy lacking cover with platforms exposed.	CDFW pre consultation letter dated September 30, 2021.



Sonoma County, Bureau of Land Management, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, EPA, USDA

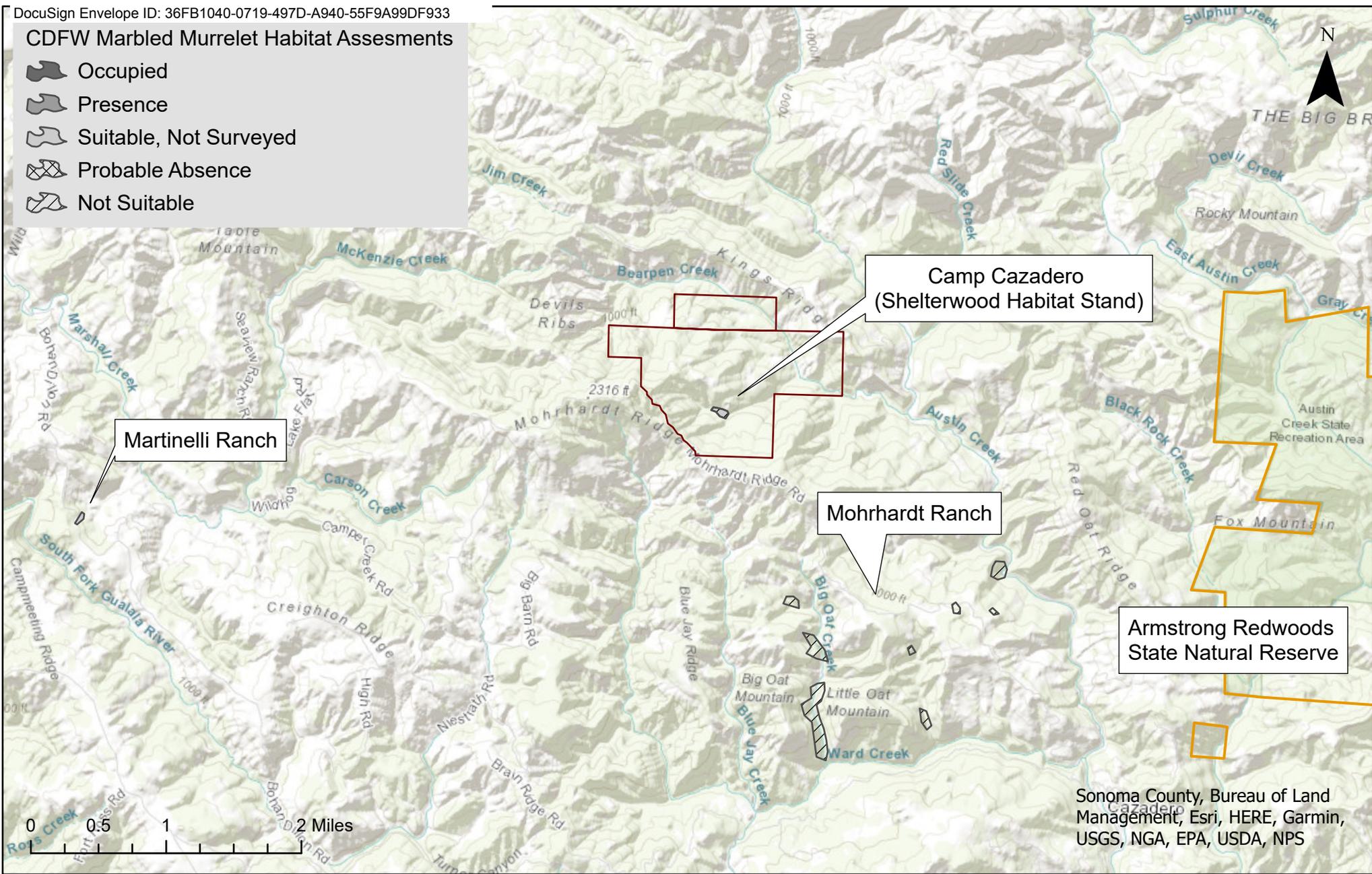
CDFW Figure 1. This map depicts the location of the Shelterwood Habitat Stand within the Shelterwood Bearpen CalVTP project area.

- Roads
 - Existing Permanent
 - Existing Seasonal
- Watercourses
- Shelterwood Bearpen CalVTP
- Shelterwood Habitat Stand



CDFW Marbled Murrelet Habitat Assessments

-  Occupied
-  Presence
-  Suitable, Not Surveyed
-  Probable Absence
-  Not Suitable



Sonoma County, Bureau of Land Management, Esri, HERE, Garmin, USGS, NGA, EPA, USDA, NPS

CDFW Figure 2. CDFW known marbled murrelet suitable habitat within the Bearpen Creek, Upper Marshall Creek, & East Austin Creek watersheds.

 Shelterwood Bearpen CalVTP

 USFWS Marbled Murrelet Critical Habitat



Northern Spotted Owl (*Strix occidentalis caurina*)

Status: Federally Threatened; California Threatened

Habitat Requirements: Northern spotted owls (NSO) are old growth forest obligate birds that require permanent water and suitable nesting trees/snags (Zeiner et al. 1990a). Northern spotted owls use dense, old-growth forests, or mid- to late- seral stage forest, with a multi-layered canopy for breeding (Remsen 1978). Northern spotted owl nests are most often found on existing structures (old raptor nest, squirrel nest, red-tree vole nest), or debris piled on a broken topped tree; although, they have been found inside tree cavities.

In evaluating potential NSO habitat, the presence of a nest structure may be more important than the size or species of tree. Successful nest sites have canopy cover immediately above nests exceeding 85%.

The presence of high-quality foraging habitat is also very important. Early seral habitat can provide excellent foraging opportunities for the NSO. Its primary prey in this area is the dusky-footed woodrat (*Neotoma fuscipes*). The NSO breeds from southwestern British Columbia south through western Washington and western Oregon to Marin County, California. The breeding season is between February 1st to July 31st.

Potential for Occurrence: There is one activity center which was identified in 2004 during the 1-03-169 THP. No NSO surveys have been conducted since these detections were originally made. During SPR BIO-1 and BIO-10, reconnaissance and focused surveys (non-protocol level) were conducted throughout the Shelterwood property, in search of NSO during daytime hours. No detections were made. The project proponent shall assume presence of the AC. CDFW was consulted for technical assistance.

CDFW Consultation Results Regarding NSO Protections:

CDFW was contacted for technical support regarding protection of this activity center, as per Mitigation Measure BIO-2a. The project proponent was directed to utilize the U.S Fish and Wildlife document titled “*Estimating the Effects of Auditory and Visual Disturbance to Northern Spotted Owls and Marbled Murrelets in Northwestern California*”, updated October 10, 2020. The guidance provides information for determining the appropriate nest buffer distance based on activities, and their potential increase to the ambient noise level.

Mitigation measures for NSO (to be implemented at mapped location in attachment C):

When determining the appropriate seasonal noise disturbance buffers to utilize, based on the tables shown on page 9, Table 1 and page 13, Table 2 of the guidance document, 3 factors were considered.

1. The pre-project sound level of the area immediately surrounding the activity center. Because this area is a habitat not substantially influenced by human activities, the “Natural Ambient” category was selected (i.e ≤ 50 dB).
2. The anticipated noise level of the equipment used during each treatment activity. Each treatment activity will utilize various equipment and are shown in the analysis below.
3. The topographic features natural ability to amplify or attenuate the sound. In this case the AC is located on a flat moderate ridge well above a creek. In this case the creek is the only area that may have an amplifying effect on the AC based on topography. Also, between the creek and the AC exists a high degree of vegetation. Based on this fact and the location of the AC in relation to the orientation of the creek - i.e. the AC is not at the

top of the “funnel” of the creek, but rather the side slope – it is not anticipated that the topography would have any significant effect in attenuation or amplification of the sound during treatment activities.

The following seasonal buffers were designed as a result of this analysis and shall be implemented for each activity type during the NSO breeding season (February 1st to July 31st):

- Prescribed Burning (Pile or Broadcast): The chainsaw dB rating was used, as this is the loudest equipment used during this treatment activity at an estimated 85 dB according to Table 2. According to table 1 of the USFW guidance document, the recommended buffer distance for the High category (81-90 dB) is **150 meters, or 500 ft.**
- Manual Treatments: Chainsaws will provide the greatest sound source for these treatments, at an estimated 85 dB. This will place this treatment activity in the High category. According to table 1 of the USFW guidance document, the recommended buffer distance for the High category (81-90 dB) is **150 meters, or 500 ft.**
- Mechanical Treatments: These treatments will most likely entail the use of an excavator equipped with a masticator and/or a dozer with attached brush rake. These activities have a dB rating within the high category of between 81-90 dB. According to table 1 of the USFW guidance document, the recommended buffer distance for the High category (81-90 dB) is **150 meters, or 500 ft.**
- Prescribed Herbivory: The use of hand tools along with goats bleating are the types of sound sources with this activity. The low category was used to determine an appropriate buffer distance. According to table 1 of the USFW guidance document, there is no recommended buffer distance for this category of auditory disturbance level.
- Herbicide use: During this treatment activity, conversation will be the only sound source. There is not a recommended buffer distance for this activity.

Mammals

Pallid Bat (*Antrozous pallidus*)

Status: SSC

Habitat Requirements: Pallid bats occupy a wide variety of habitats, such as grasslands, shrublands, and forested areas of oak and pine, but prefer rocky outcrops with desert scrub (Zeiner et al. 1990b). The pallid bat roosts in caves, mines, crevices, buildings, under bridges, and occasionally in hollow trees. Day roosts are located at sites that provide protection from the heat of the day; Night roosts are in more open areas such as porches or open buildings (Zeiner et al. 1990b). They roost in small groups of 20 or more. They do need water, but have a good urine-concentrating ability, so they don't have to roost within close vicinity of a water source (Geluso 1978). In California, pallid bats do not migrate, but make local movements to hibernacula and during post-breeding. Pallid bats feed on a wide variety of relatively large ground dwelling or slow flying insects and arachnids (Zeiner et al. 1990b). Colonies of *A. pallidus* will typically emerge about 1 hour after sunset, return to roost, and then forage again before dawn. Specializes in foraging on insects on the ground, versus in the air, by listening for the insect footsteps. The pallid bat is found throughout most of the western U. S. and Mexico. In California, the bat is widespread in low elevations with the exception of the high Sierra

Nevadas from Shasta to Kern counties and in the northwestern corner of the state from Del Norte and western Siskiyou counties to northern Mendocino County (Zeiner et al. 1990b).

Potential for Occurrence: There is a low potential for occurrence within the treatment area. No individuals were located during field reconnaissance. Suitable habitat was not located and the closest known occurrence is greater than 3 miles from the project area.

Potential Project Impact: The potential for this project to impact this species or its habitat is very low, mainly due to the general lack of high-quality roosting habitat within the project area.

Townsend's Big-Eared Bat (*Corynorhinus townsendii*)

Status: SSC

Habitat Requirements: *C. townsendii* inhabits southwestern British Columbia, Canada and most of the western U.S., east to the Great Plains, and south from western Texas into central Mexico. Isolated populations of central and eastern U.S. Townsend's big-eared bats are most common in mesic sites but are found in a variety of habitats including coastal conifer and broad-leaf forests, oak and conifer woodlands, arid grasslands and deserts, and high-elevation forests and meadows. Roosting, maternity and hibernacula sites in California include limestone caves, lava tubes, mine tunnels, buildings, and other man-made structures.

Roost structures that could be classified as cave analogues and that function as maternity roosts or hibernacula include large trees (minimum dbh of 8 ft.; adapted from maternity roosts in large redwood trees) with large basal hollows and an internal roost area large enough for flying forays (larger than the entrance). The roost ceiling must be dome-like (allowing for multiple bats to roost in clusters) and occur at least 1 ft. above the top of the entrance (allows for better protection from predators and changing microclimates). The only light penetrating the roost area must originate from the roost entrances so that the internal roost area remains semi-dark to dark. Suitable habitat is described as basal hollows in trees 42" dbh and greater having all of the following characteristics:

- An opening equal to or greater than 2 square feet.
- An internal cavity extending above the entrance equal to or greater than 12 inches.
- An internal cavity equal to or greater than 3 feet above the ground.

Potential for Occurrence: There is a very low potential to locate this species or suitable roost trees. There are no known Townsend's big-eared bat colonies and no known mine shafts, caves or large trees with basal hollows as described above, in or near the project area. No potential trees within or adjacent to the plan area that meet the criteria for this species roosting habitat were observed and the closest known occurrence is greater than 3 miles away.

Hoary Bat (*Lasiurus cinereus*)

Status: SSC

Habitat Requirements: This bat is one of the few bats known to both migrate south for winter and to hibernate locally. *L. cinereus* prefers a diet of moths, yet will also consume beetles, wasps, flies, grasshoppers, dragonflies, and termites. Hoary bat daytime roosts are typically dense foliage of medium to large sized trees. This bat occupies a variety of habitats including dense forest, forest edges, coniferous forests, deserts, and broadleaf forests.

Potential for Occurrence: There is moderate potential for this species to occur within the treatment units. No individuals nor suitable nest sites were observed during field reconnaissance and the closest known occurrence is greater than 3 miles from the boundary.

Yuma myotis (*Myotis yumanensis*)

Status: SSC

Habitat Requirements: *M. yumanensis* occurs from British Columbia, across the western U.S., and south into Baja and southern Mexico. This bat will use a variety of lowland western habitats, from scrub to coniferous forest, however these locales will always be near slow moving or standing water habitats. They roost in caves, mines, buildings, under bridges, and in cliff and tree crevices. The Yuma myotis will emerge just after sunset to forage. It is a low flier which primarily consumes aquatic emergent insects.

Potential for Occurrence: No roosts, or evidence of their presence, were observed within the project area during the site assessment. The habitat requirements for this species are generally lacking within the project area and the closest known occurrence is greater than 3 miles away.

Sonoma Tree Vole (*Arborimus pomo*)

Status: SSC

Habitat Requirements: This species occurs along the North Coast of California. Sonoma Tree Voles are entirely arboreal. This species lives, nests and feeds in the forest canopy and have been found in various stand size classes of Douglas-fir, bishop pine and grand fir. They feed on the vascular cambium of Douglas-fir, grand fir and bishop pine needles while the unconsumed resin ducts (from the needles) are used for nest lining. Over-time resin ducts accumulate in the nest and the surplus is discarded from the nest by the animal. A visual search of the forest canopy for active nests is usually complimented by an inspection of the forest floor, upon which, matted clusters of resin ducts can usually be observed.

Potential for Occurrence: The project area does contain potential habitat for the Sonoma Tree Vole. A visual search of the canopy for stick nests and the forest floor for discarded resin ducts, which accumulate below vole nests was conducted. Resin ducts or nests were not observed above in the trees; however, they could be hidden up in the canopy. The closest known occurrence is just under 3 miles west of the project boundary.

Potential Project Impact: Due to the level of treatments proposed, there is a low potential for impact to this species. With the implementation of the BIO SPR-2 listed in the PSA, it is anticipated there would not be a significant impact to this species or its habitat.

North American Porcupine (*Erethizon dorsatum*)

Status: SSC

Habitat Requirements: North American porcupines range from Canada, Alaska, into northern Mexico, and primarily west of the Rocky Mountains. They are commonly found in coniferous and mixed forested areas, but have adapted to harsh environments such as shrublands, tundra, and deserts. They make their dens in hollow trees, decaying logs, and caves in rocky areas.

Potential for Occurrence: There is a moderate potential for this species to occur within the treatment area. No individuals or their dens were observed during field reconnaissance and the closest known occurrence is approximately 2.5 miles south west of the treatment area.

Potential Project Impact: Low potential. Large downed hollow logs and trees with basal hollows will be retained where feasible. With implementation of SPR-BIO 2 workers will be trained on identification of this species and its dens. If located, work will stop and the RPF or qualified biologist will be notified to develop protection measures.

American Badger (*Taxidea taxus*)

Status: SSC

Habitat Requirements: A small carnivore, with a distinctive white badge-like mark on its forehead. This species is most abundant in drier open stages of most shrub, forest and herbaceous habitats, with friable soils (Zeiner et al. 1990b). They dig burrows in the friable soils and frequently reuse old burrows. They prey on burrowing rodents, especially ground squirrels and pocket gophers, also on birds, insects, reptiles and carrion. Their diet shifts seasonally depending on the availability of prey. American badgers are non-migratory and are found throughout most of California, except the northern North Coast area (Grinnell et al. 1937).

Potential for Occurrence: There is a low potential for this species to occur within the treatment units. No individuals or burrows were observed during field reconnaissance and the closest known occurrence is greater than 3 miles from the project area.

Amphibians and Reptiles

Western Pond Turtle (*Emys marmorata*)

Status: SSC

Habitat Requirements: The pond turtle is associated with permanent ponds, lakes, streams, or pools in a wide variety of habitats. It requires basking sites in the aquatic environment, grassy openings for nest sites - which are typically within 100 meters of a water source, although nests up to 500 meters have been recorded (Thomas et al. 2016).

Potential for Occurrence: There is low potential for this species to occur within the project area mainly around the class 1 watercourse. There are no ponds within or near the project area, so chances of encountering WPT is highly unlikely.

Potential Project Impact: There is no potential for this species to be impacted by operations because there is a lack of habitat.

California Giant Salamander (*Dicamptodon ensatus*)

Status: SSC

Habitat Requirements: California *Dicamptodon* salamanders are year-round residents of California. In 1989, these salamanders were split into two species – California giant salamander (*Dicamptodon ensatus*) occurring south of the Mendocino County line and the coastal giant salamander (*Dicamptodon tenebrosus*) occurring in the north (Thomas et al. 2016). A hybrid zone exists approximately 6 miles north of Gualala; however outside of this area, the two species are known to be distinct (Thomas et al. 2016).

This species occurs in wet coastal forests in or near clear, cold permanent and semi-permanent streams and seepages.

Potential for Occurrence: There is a high potential for occurrence within the project area around class I & II watercourses. The closest known occurrence is within the project area along Bearpen creek. This species was detected during electrofishing in September of 1995. No individuals were encountered during field reconnaissance.

Potential Project Impact: There is no potential for impact with the included mitigation measures HYD-4. The establishment of a WLPZ will protect this species and its habitat during treatment activities.

California Red-Legged Frog (*Rana draytonii*)

Status: Federally Threatened

Habitation Requirements: California red-legged frogs (CRLF) primarily inhabit permanent or nearly permanent water sources (quiet streams, marshes, and ponds). Breeding tends to occur primarily in ponds, less likely in streams, and happens from November to April. This frog will also use upland habitats outside of the breeding season and may be discovered under logs, rocks, and other debris during wet conditions.

Potential for Occurrence: There is a low potential for individuals to occur within the treatment areas near class I or II watercourses & springs. No individuals were encountered during field reconnaissance and the closest known occurrence is greater than 3 miles from the project boundary.

Potential Project Impact: Due to the scope of treatments proposed, there is a low potential for impact to this species. With the implementation of the BIO SPRs and HYD SPRs listed in the PSA, it is not anticipated there will be an impact to this species or its habitat. Watercourse protection measures will ensure retention of crucial habitat. Also, equipment exclusion from watercourse and lake protection zones (WLPZ) will further reduce the likelihood of take resulting from heavy equipment use.

Red-Bellied Newt (*Taricha rivularis*)

Status: SSC

Habitation Requirements: The red-bellied newt ranges within Mendocino, Sonoma, Humboldt, and Lake Counties. They are predominantly found in redwood forests, along the coast, however, they have also been detected in mixed conifer, oak woodland, and other forest types particularly when near streams. The preferred aquatic breeding habitats are moderate to fast-flowing streams with rocky substrates. Breeding coincides with the receding of streams after heavy winter rains. Adults are terrestrial and the aquatic breeding phase lasts from February to May. After breeding, adults leave streams but usually stay in the same drainage; however, they are also known to travel several kilometers between breeding years. Underground retreats are used from May to October, and adults forage on the surface before and as they migrate to streams. (Thomas et al. 2016).

Potential for Occurrence: There is a moderate to high potential for individuals to occur within the treatment areas, particularly near perennial watercourses and springs within the treatment areas. No individuals were encountered during field reconnaissance. The closest known occurrence is within 2 miles of the project area.

Potential Project Impact: There is potential for this species to be impacted during operations, but this will be mitigated with the following: The implementations of a WLPZ via SPR-HYD 4 and BIO-4 will greatly reduce the potential impact to individuals and will preserve breeding habitat. SPR BIO-2 will ensure workers are trained on the identification of this species, so that occurrences can be avoided during operations. Also, SPRs GEO-1, GEO-2, and GEO-3 will prevent ground disturbance during periods of soil saturation, when this species is more likely to be active outside of the WLPZ.

Foothill Yellow-Legged Frog (*Rana boylei*)

Status: California endangered throughout inland range; Coast range is delisted

Habitation Requirements: Foothill Yellow-Legged Frogs (FYLF) are associated with lower elevation streams draining the Pacific slope from west-central Oregon to northwestern Baja

California. Foothill yellow-legged frogs occupy a diverse range of ephemeral and permanent streams, rivers, and adjacent moist terrestrial habitats over the course of their complex life history. Small streams often have dense canopies that limit the light needed by algae, the food resource of tadpoles. Adults can migrate down the drainage network to channels that are broad and more sunlit. Occupied streams are often partly shaded, low gradient, and dominated by coarse, unconsolidated rocky substrates. Seasonal variation in streamflow has a strong influence on life history and movement. To avoid disturbance and optimize feeding by tadpoles, adults breed, and tadpoles develop in slow water velocity habitats. Reproduction occurs in synchrony with the transition from winter and spring snowmelt freshets to summer drought.

Potential for Occurrence: There is a high potential for this species and habitat to exist within the treatment areas. No individuals were encountered during field reconnaissance, but the closest known occurrence is 1,200 ft east of the project area.

Potential Project Impact: There is little to no potential for this species to be impacted by this project with the implementation of HYD-4 WLPZ protections. SPR BIO-2 will ensure workers are trained to identify and avoid this species when working within the WLPZ.

Fish & Crustacean

Coho salmon (*Oncorhynchus kisutch*) Central California Coast ESU,

Steelhead (*Oncorhynchus mykiss*) Central California Coast DPS

California freshwater shrimp (*Syncaris pacifica*)

Longfin smelt (*Spirinchus thaleichthys*)

Russian River tule perch (*Hysterocarpus traskii pomo*)

Gualala roach (*Hesperoleucus parvipinnis*)

Habitat: Class I watercourses.

Potential for occurrence: There is potential for all these species to occur within the Bearpen Creek and any tributary class 1 watercourses, within the project area.

Potential Project Impact: With the implementation of the SPR HYD-4, and GEO 1-3 listed in the PSA, it is not anticipated there will be an impact to this species or its habitat. Watercourse protection measures and wet weather treatment restrictions will ensure the protection of crucial habitat, and the prevention of downstream sedimentation or increased water temperatures.

Insects

Obscure bumblebee (*Bombus califinosus*)

Status: None

Habitat Requirements: The obscure bumble bee is a species of bumblebee native to the west coast of the United States, where its distribution extends from Washington through to Southern California. The workers are most often seen on Fabaceae, the legume family, while queens are most often seen on Ericaceae, the heath family, and males have been observed most often on Asteraceae, the aster family. Common plants visited by the workers include ceanothus, thistles, sweet peas, lupines, rhododendrons, Rubus, willows, and clovers.

Potential for Occurrence: There is no potential for occurrence within the project area, because the required habitat is lacking. The closest known occurrence is 2.8 miles to the southwest of the project boundary.

Western bumblebee (*Bombus occidentalis*)

Status: Candidate under CESA

Habitation Requirements: The western bumble bee was once very common in the western United States and western Canada. This species will visit a range of different plant species and are considered generalist pollinators of a wide variety of flowering plants and crops (Goulsen 2003a; Heinrich 2004). This species is believed to be limited to mostly high elevation meadows and coastal areas. This genus is encountered mostly along stream banks, in meadows, recently burned or logged areas, or on flowers by roadsides. Fire exclusion is a threat to this species due to the increase in forest density and reduction of open areas.

Potential for Occurrence: There is no potential for occurrence throughout the project area, due to a lack of this species' required habitat.

Botanical Report for the Shelterwood Bearpen CalVTP

4/21/2023

Prepared for:

Sonoma County Resource Conservation District

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Prepared by:

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Frontier Resource Management



Special Status Plants Within the CNDDDB 9 Quad Search:

SNAME	CNAME	FEDLIST	CALLIST	SRANK	RPLANTRANK
Ramalina thrausta	angel's hair lichen	None	None	S2S3	2B.1
Lasthenia californica ssp. bakeri	Baker's goldfields	None	None	S1	1B.2
Delphinium bakeri	Baker's larkspur	Endangered	Endangered	S1	1B.1
Arctostaphylos bakeri ssp. bakeri	Baker's manzanita	None	Rare	S1	1B.1
Agrostis blasdalei	Blasdale's bent grass	None	None	S2	1B.2
Gilia capitata ssp. chamissonis	blue coast gilia	None	None	S2	1B.1
Erysimum concinnum	bluff wallflower	None	None	S2	1B.2
Carex comosa	bristly sedge	None	None	S2	2B.1
Carex californica	California sedge	None	None	S2	2B.2
Eriogonum cedrorum	Cedars buckwheat	None	None	S1	1B.3
Calochortus raichei	Cedars fairy-lantern	None	None	S2	1B.2
Arctostaphylos bakeri ssp. sublaevis	Cedars manzanita	None	Rare	S2	1B.2
Lilium maritimum	coast lily	None	None	S2	1B.1
Calystegia purpurata ssp. saxicola	coastal bluff morning-glory	None	None	S2S3	1B.2
Hemizonia congesta ssp. congesta	congested-headed hayfield tarplant	None	None	S2	1B.2
Lessingia arachnoidea	Crystal Springs lessingia	None	None	S2	1B.2
Carex saliniformis	deceiving sedge	None	None	S2	1B.2
Streptanthus morrisonii ssp. hirtiflorus	Dorr's Cabin jewelflower	None	None	S1	1B.2
Chlorogalum pomeridianum var. minus	dwarf soaproot	None	None	S3	1B.2
Fritillaria liliacea	fragrant fritillary	None	None	S2	1B.2
Erigeron greenei	Greene's narrow-leaved daisy	None	None	S3	1B.2
Streptanthus glandulosus ssp. hoffmanii	Hoffman's bristly jewelflower	None	None	S2	1B.3
Ceanothus purpureus	holly-leaved ceanothus	None	None	S2	1B.2

<i>Leptosiphon jepsonii</i>	Jepson's leptosiphon	None	None	S2S3	1B.2
<i>Lathyrus palustris</i>	marsh pea	None	None	S2	2B.2
<i>Usnea longissima</i>	Methuselah's beard lichen	None	None	S4	4.2
<i>Fissidens pauperculus</i>	minute pocket moss	None	None	S2	1B.2
<i>Streptanthus morrisonii</i> ssp. <i>morrisonii</i>	Morrison's jewelflower	None	None	S1?	1B.2
<i>Amorpha californica</i> var. <i>napensis</i>	Napa false indigo	None	None	S2	1B.2
<i>Gilia capitata</i> ssp. <i>pacifica</i>	Pacific gilia	None	None	S2	1B.2
<i>Cordylanthus tenuis</i> ssp. <i>capillaris</i>	Pennell's bird's-beak	Endangered	Rare	S1	1B.2
<i>Lasthenia californica</i> ssp. <i>macrantha</i>	perennial goldfields	None	None	S2	1B.2
<i>Sidalcea calycosa</i> ssp. <i>rhizomata</i>	Point Reyes checkerbloom	None	None	S2	1B.2
<i>Sidalcea malviflora</i> ssp. <i>purpurea</i>	purple-stemmed checkerbloom	None	None	S1	1B.2
<i>Hesperocyparis pygmaea</i>	pygmy cypress	None	None	S1	1B.2
<i>Ceanothus confusus</i>	Rincon Ridge ceanothus	None	None	S1	1B.1
<i>Arctostaphylos stanfordiana</i> ssp. <i>decumbens</i>	Rincon Ridge manzanita	None	None	S1	1B.1
<i>Leptosiphon rosaceus</i>	rose leptosiphon	None	None	S1	1B.1
<i>Trifolium buckwestiorum</i>	Santa Cruz clover	None	None	S2	1B.1
<i>Erigeron serpentinus</i>	serpentine daisy	None	None	S2	1B.3
<i>Hesperivax sparsiflora</i> var. <i>brevifolia</i>	short-leaved evax	None	None	S3	1B.2
<i>Kopsiopsis hookeri</i>	small groundcone	None	None	S1S2	2B.3
<i>Alopecurus aequalis</i> var. <i>sonomensis</i>	Sonoma alopecurus	Endangered	None	S1	1B.1
<i>Chorizanthe valida</i>	Sonoma spineflower	Endangered	Endangered	S1	1B.1
<i>Erigeron supplex</i>	supple daisy	None	None	S2	1B.2
<i>Campanula californica</i>	swamp harebell	None	None	S3	1B.2
<i>Horkelia tenuiloba</i>	thin-lobed horkelia	None	None	S2	1B.2
<i>Lupinus tidestromii</i>	Tidestrom's lupine	Endangered	Endangered	S1	1B.1
<i>Sulcaria spiralifera</i>	twisted horsehair lichen	None	None	S2	1B.2

Trifolium amoenum	two-fork clover	Endangered	None	S1	1B.1
Brasenia schreberi	watershield	None	None	S3	2B.3
Piperia candida	white-flowered rein orchid	None	None	S3	1B.2
Gilia capitata ssp. tomentosa	woolly-headed gilia	None	None	S2	1B.1
Chorizanthe cuspidata var. villosa	woolly-headed spineflower	None	None	S2	1B.2

Survey Methods

Many of the above listed plant species require a serpentine soil type to occur. Some are only found in the serpentine canyon of the Cedars area in Sonoma County. Soils data from the USGS Web Soil Survey were analyzed (see the Cooperative Forest Management Plan), along with a reconnaissance survey, to narrow the list of target species. There are no serpentine or Ultramafic soils within the subject property, so all serpentine and Ultramafic endemic species were dis-included from the target list. Nevertheless, Cedar’s manzanita and Baker’s manzanita will be included in the biological training for workers, as there is some minor potential for this species to occur outside of a serpentine environment. All small leaf manzanita will be protected during operations (i.e., manzanita with leaves smaller than 1” shall be retained), where feasible. See PSA BIO-1 discussion. As a result, serpentine endemic species were not included on the target list for the botanical survey.

Plants from the above list were ruled out for consideration if their required habitat was not present. For instance, plants which require coastal dune/bluff habitats and/or elevations outside of the project elevation range were removed from the target list. Plants were also removed from the target list if it was determined that impact could clearly be avoided during operations. For instance, species whose habitats fall within wet areas, marshes, and watercourses were dis-included from the target list because the WLPZ protection measures described in SPR HYD-4 will prevent potential disturbance.

A majority of the project area will be treated under the ecological restoration treatment type. As stated in the PEIR, Biological Resources section 3.6 Pg 133,

“In the ecological restoration treatment type, the objective is to restore degraded, damaged, or destroyed ecosystems and habitats in fire-adapted vegetation types by returning them to their natural fire regime and returning vegetation in Condition Classes 2 and 3 to Condition Class 1¹. This would benefit special-status plants associated with these habitats in the long-term by restoring the historic vegetation composition, structure, and habitat values and function under which these species evolved. Removal of overgrown shrubs and thinning tree canopies could benefit special-status plant populations in the short term by allowing more light to reach them and by removing competition for water, light, and nutrients; however, removal of overstory vegetation could alter microhabitat conditions in a way that is detrimental to special-status plant species in the short term if they are adapted to growing in shade or

if the loss of overstory vegetation results in adverse changes in soil moisture, or destabilizes soil resulting in erosion that limits sensitive plant establishment and growth or washes away sensitive plants or their seeds and propagules with eroding soil.”

As a result, it has been determined that the potential for impact to the target species is less than significant and surveys are not required prior to treatments in these areas. Mechanical treatments may occur along existing roads and within proposed shaded fuel breaks. These treatments have the highest potential to negatively impact the target species and as a result, the SPR BIO-7 botanical surveys will focus on these areas. See maps in attachment C for locations of the different treatment types and activities.

Target Species

SNAME	CNAME	FEDLIST	CALLIST	RPLANTRANK	Bloom Period
Ramalina thrausta	angel's hair lichen	None	None	2B.1	NA
Lasthenia californica ssp. bakeri	Baker's goldfields	None	None	1B.2	Apr-Oct
Delphinium bakeri	Baker's larkspur	Endangered	Endangered	1B.1	Mar-May
Lilium maritimum	coast lily	None	None	1B.1	May-Aug
Hemizonia congesta ssp. congesta	congested-headed hayfield tarplant	None	None	1B.2	Apr-Nov
Fritillaria liliacea	fragrant fritillary	None	None	1B.2	Feb-Apr
Erigeron greenei	Greene's narrow- leaved daisy	None	None	1B.2	May-Sep
Ceanothus purpureus	holly-leaved ceanothus	None	None	1B.2	Mar-May
Leptosiphon jepsonii	Jepson's leptosiphon	None	None	1B.2	Mar-May
Usnea longissima	Methuselah's beard lichen	None	None	4.2	NA
Fissidens pauperculus	minute pocket moss	None	None	1B.2	NA
Amorpha californica var. napensis	Napa false indigo	None	None	1B.2	Apr-Jul
Ceanothus confusus	Rincon Ridge ceanothus	None	None	1B.1	Feb-Jun
Trifolium buckwestiorum	Santa Cruz clover	None	None	1B.1	Apr-Oct
Kopsiopsis hookeri	small groundcone	None	None	2B.3	Apr-Aug
Chorizanthe valida	Sonoma spineflower	Endangered	Endangered	1B.1	Jun-Aug
Trifolium amoenum	two-fork clover	Endangered	None	1B.1	Apr-Jun
Piperia candida	white-flowered rein orchid	None	None	1B.2	May-Sep

Survey Results

Two seasonally specific surveys were conducted (a mid and late season). This was determined to be sufficient based on the overlapping blooming periods of the target species. A late season survey was conducted August 24-26th, 2022 and an early/mid-season survey was conducted on April 11th-12th, 2023. During these dates the surveyor traversed all areas shown on the survey map and identified all species encountered. When an unknown species was confronted, pictures and/or illustrations were obtained to key the individual while in the office.

There were no additional listed or non-listed special status species located during the botanical surveys. Methuselah's beard lichen was identified during the previous botany survey (in support of the 2003 THP) throughout a small area in the southwestern portion of the property.

Protection Measures:

Methuselah's beard lichen (*Usnea longissimi*):

Rare plant rank 4.2.

The 2003 THP identified this species within the southwest of the property to the east of Mohrhardt ridge. This species is known to reproduce by windblown fragments. The protection for this species will be the same as identified in the previous THP. This will be achieved through the preservation of major populations of *usnea longissimi* on any host trees "seed trees". Host trees are defined as trees with visible hanging pendulous lichens on 40% or more of the branches.

Because few large trees are proposed for removal, it is not anticipated that this species will be impacted by the proposed treatments. Workers will be trained in the identification of this species and the previously mapped location, to avoid removing any host trees discovered, as defined above.

Identified Species

The following species were identified during the botanical survey:

Coast Redwood (*Sequoia sempervirens*)

Douglas-fir (*Pseudotsuga menziesii*)

Knobcone pine (*Pinus attenuate*)

Western red cedar (*Thuja plicata*)

California black oak (*Quercus kelloggii*)

Oregon white oak (*Quercus garryana*)

Coast live oak (*Quercus angustifolia*)

Interior live oak (*Quercus wislizeni*)

Valley oak (*Quercus lobata*)

Bigleaf maple (*Acer macrophyllum*)

Pacific madrone (*Arbutus menziesii*)

California bay (*Umbellularia californica*)

California buckeye (*Aesculus californica*)

Toyon (*Heteromeles arbutifolia*)

California coffeeberry (*Frangula californica*)

Large leather-root (*Hoita macrostachya*)

Leather oak (*Quercus durata*)

Pointleaf manzanita (*Arctostaphylos pungens*)

Ranger buttons (*Sphenosciadium capitellatum*)

Northern maidenhair (*Adiantum pedatum*)

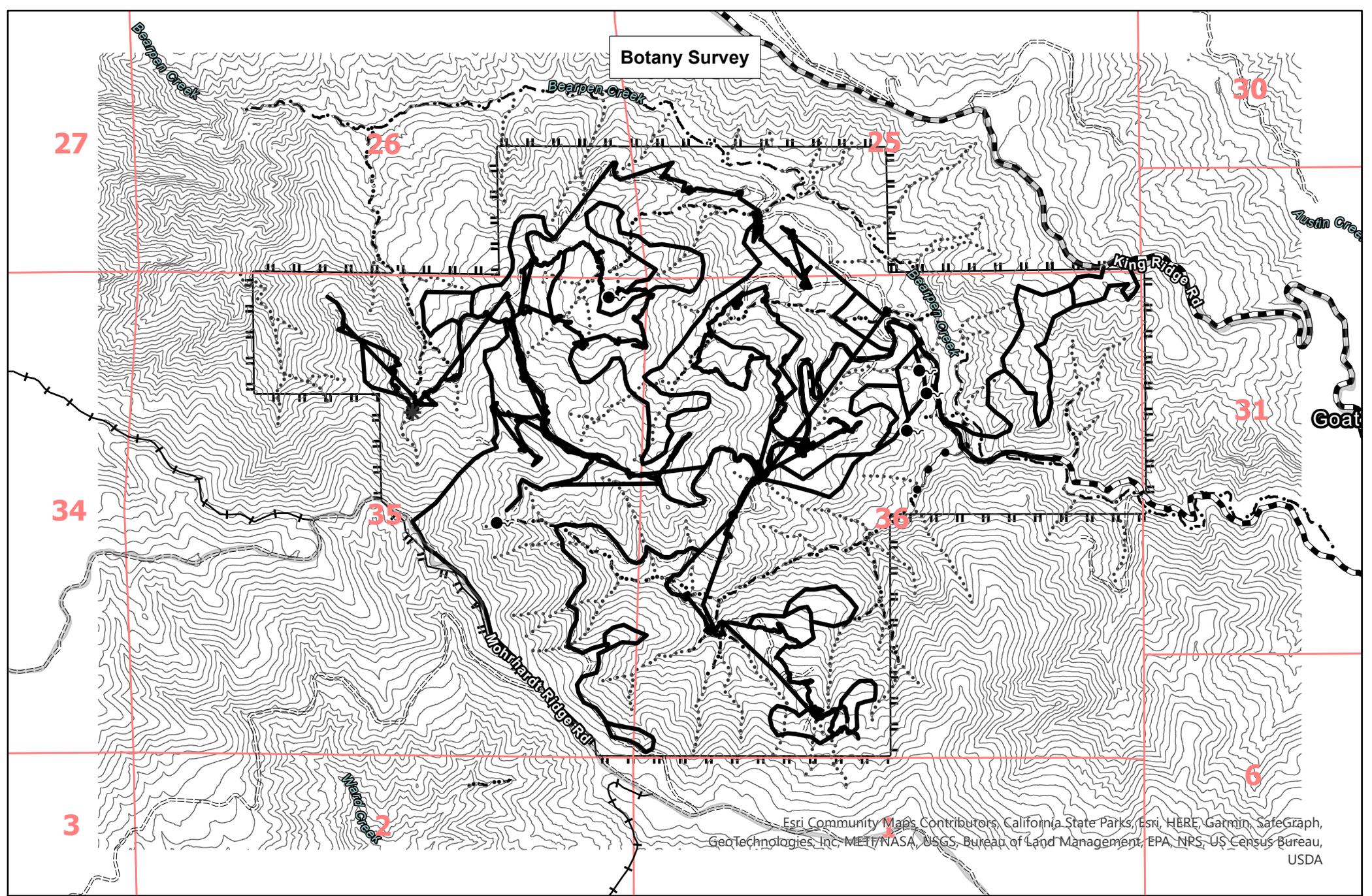
Spanish broom (*Spartium junceum*)

Coastal wood fern (*Dryopteris arguta*)

Yarrow (*Achillea millefolium*)

Deer brush (*Ceanothus integerrimus*)
Serviceberry (*Amelanchier alnifolia*)
California buckeye (*Aesculus californica*)
Big berry manzanita (*Arctostaphylos glauca*)
Eastwoods manzanita (*Arctostaphylos glandulosa*)
Yellow monkeyflower (*Mimulus guttatus*)
French broom (*Genista monspessulana*)
Dwarf rose (*Rosa gymnocarpa*)
Stinkwort (*Dittrichia graveolens*)
Mugwort (*Artemisia Douglasii*)
White sweetclover (*Melilotus albus*)
Mule fat (*Baccharis salicifolia*)
White alder (*Alnus rhombifolia*)
Common chicory (*Cichorium intybus*)
Southern catalpa (*Catalpa bignonioides*)
Pennyroyal (*Mentha pulegium*)
Crested wheatgrass (*Agropyron cristatum*)
Poison hemlock (*Conium maculatum*)
Wood anemone (*Anemone quinquefolia*)
Modesty (*Whipplea modesta*)
Common pacific pea (*Lathyrus verstitus*)
Western blue-eyed grass (*Sisyrinchium bellum*)
Desert Rockpurslane (*Calandrinia ciliate*)
Bearded iris (*Iris germanica*)
Bigleaf periwinkle (*Vinca major*)
Wild daffodil (*Narcissus pseudonarcissus*)
Juniper haircap (*Polytrichum juniperinum*)
Silver lupine (*Lupinus albifrons*)
Miniature lupine (*Lupinus bicolor*)
Gray's biscuitroot (*Lomatium grayi*)
Baby Blue eyes (*Nemophila menziesii*)
Blue dicks (*Dichelostemma capitatum*)
Western blue-eyed grass (*Sisyrinchium bellum*)
Western buttercup (*Rununculus occidentalis*)
Milkmaids (*Cardamine californica*)
Sierra gooseberry (*Ribes roezlii*)
Swordfern (*Polystichum munitum*)
Shooting star (*Dodecatheon meadia*)
Golden poppy (*Eschscholzia californica*)
Canyon live oak (*Quercus chrysolepis*)
Scrub oak (*Quercus berberidifolia*)
Miner's lettuce (*Claytonia perfoliate*)
Bracken fern (*Pteridum aquilinum*)
Pacific Yew (*Taxus brevifolia*)

Botany Survey



Esri Community Maps Contributors, California State Parks, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc., METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA



Shelterwood Bearpen CalVTP

Sections 25, 26, 35, & 36 T09N, R12W MDBM
Fort Ross USGS 7.5 Minute Quadrangles



JH 9/29/23

Watercourse

Class

- - - • 2
- • • • 3
- 2L
- - • 1

Roads

PERM_CLASS

- EP
- ES
- ET

ExteriorBoundary

PLS

Domestic_H2O_Spring

Botany_Survey

Hydro_pt



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