Attachment B

Gallo, Delicato & Stone CalVTP # 2023-02

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 CNDDB 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 potential for this species habitat within the project area. A small pond occurs within the project area, but the presence of fish within the pond is unknown. The closest fish bearing class 1 watercourse is over 1 mile from the project boundary. The project area has a general lack of high quality potential nest trees required by osprey. 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 if located within the boundary 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: Species of Special Concern
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 a very low 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. It is anticipated that a net benefit from proposed treatments will occur as a result of the improvement to foraging habitat.

Great Blue Heron (*Ardea herodias*)
Status: Species of Special Concern
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 to moderate potential for this species to occur within the project area. The small ponds within the project boundary provide potential habitat. This species was not observed during reconnaissance surveys and the closest known occurrence is over 3 miles from the project.
Potential Project Impact: Due to the scope of treatments proposed and the inclusion of this species in SPR BIO-2 crew training, the potential impact will be less than significant.

Burrowing owl (*Athene cunicularia*)
Status: Board of Forestry Sensitive
Habitat Requirements: Burrowing owls occur in open, dry grassland and desert habitats, and in grassland, forb and open shrub stages of pinyon-juniper and ponderosa pine habitats. They use rodent or other burrows for roosting and nesting cover.
Potential for Occurrence: The habitat for this species is lacking within the project area. The closest known occurrence is approximately ½ a mile to the north east of the property boundary. The individual was observed using a drain pipe within a vineyard.
Potential Project Impact: Due to the lack of habitat and scope of treatments proposed it is highly unlikely that this species will be impacted negatively. There is expected to be an improvement in foraging habitat resulting from treatments.

Purple Martin (*Progne subis*)
Status: SSC
Habitat Requirements: Purple martins often nest in tall old-growth trees or snags in coniferous forests with multilayered canopy. They are second cavity nesters, using old woodpecker cavities and crevices in rocks, trees, and cacti (Baicich and Harrison 2005). Nests are typically found in open areas near water. Purple martins typically nest in colonies. The purple martin diet consists of beetles, flies, dragonflies, damselflies, leafhoppers, grasshoppers, crickets, butterflies, moths, wasps, bees, caddisflies, spiders, cicadas, termites, and mayflies.
Potential for Occurrence: There is a low potential for habitat within the project area. No individuals were observed during reconnaissance surveys and the closest known occurrence is greater than 3 miles.
Potential Project Impact: Due to the low potential for occurrence and scope of treatments proposed it is highly unlikely that this species or its habitat will be impacted negatively.

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 due to lack of preferred habitat. No individuals were located during field reconnaissance. Suitable habitat was not located and the closest known occurrence is greater than 1 mile south west of the project area near dry creek road.
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.
Potential Project Impact: The project as proposed is not anticipated to have a significant effect on this species. Treatments as proposed will not significantly alter potential habitat.

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. No discarded resin ducts or STV nests were observed; however, they could be hidden up in the canopy. The closest known occurrence is more than 3 miles.
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 over 3 miles from 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.

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 - moderate potential for this species to occur within the project area mainly around the ponds.
Potential Project Impact: There is low potential for this species to be impacted by operations due to WLPZ protection measures implemented with SPR HYD-4. If egg nests happen to be located outside of the WLPZ, there is potential for them to be impacted by operations. SPR BIO-2 training for workers will reduce this potential impact to a level of insignificance.

California Giant Salamander (*Dicamptodon ensatus*)
Status: SSC

Habitation Requirements: *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 moderate potential for occurrence within the project area around class II watercourses and wet areas. The closest known occurrence was immediately adjacent to the project area along Peterson creek. 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-moderate 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. 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. This species will be included in SPR BIO-2 worker training.

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 potential for individuals to occur within the treatment areas, particularly near perennial watercourses within the treatment areas. No individuals were encountered during field reconnaissance. The closest known occurrence is greater than 3 miles from the project area.
Potential Project Impact: There is a low 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 boylii)*
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.

Fish & Crustacean

Coho salmon *(Oncorhynchus kisutch)* Central California Coast ESU,
Steelhead *(Oncorhynchus mykiss)* Central California Coast DPS
California freshwater shrimp *(Syncaris pacifica)*
hardhead *(Mylopharodon conocephalus)*
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 outside the project area. The closest class I is over 1 mile from 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, through 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 a low potential for occurrence within the project area because the required habitat is mostly lacking and of poor quality. Small forest openings exists but they are few and generally less than ½ acre in size. The closest known occurrence is more than 3 miles from 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 speices and are considered generalist pollinators of a wide variety of flowing 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 a low potential for occurrence within the project area because the required habitat is mostly lacking and of poor quality. Small forest openings exists but they are few and generally less than ½ acre in size. The closest known occurrence is more than 3 miles from the project boundary.

Sensitive Natural Communities

The *Quercus Kelloggii – Arctostaphylos patula* relationship is listed as sensitive and the *Quercus agrifolia – Quercus kelloggii* is listed sensitive as well. This stand will be protected with mitigation measures listed in the biological section below. See impact BIO-3 for more information.

- Avoid high intensity fire within this area. Limit burn pile density to < 17 piles/acre, or ~ 50 ft between piles.
- For all treatments within this mapped area, a minimum of 50 percent relative cover of existing Manzanita and associated native understory vegetation will be retained (evenly or in a mosaic pattern) throughout the treatment area.
- Retain all Oak species not posing a risk to public safety.

Botany Report to be Amended
Pending Late Season Survey Results

Botanical Report for the Gallo, Delicato & Stone CalVTP #2023-02

8/21/2023

Prepared for:

Northern Sonoma County Fire Protection District

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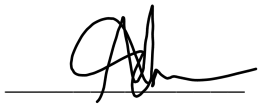

Jacob Harrower | RPF #3070

Frontier Resource Management

Special Status Plants Within the CNDDB 9 Quad Search:

Scientific Name	Common Name	Fed List	Cal List	Rank
Navarretia leucocephala ssp. bakeri	Baker's navarretia	None	None	1B.1
Eriastrum brandegeeae	Brandegee's eriastrum	None	None	1B.1
Carex comosa	bristly sedge	None	None	2B.1
Lasthenia burkei	Burke's goldfields	Endangered	Endangered	1B.1
Ceanothus divergens	Calistoga ceanothus	None	None	1B.2
Eriogonum cedrorum	Cedars buckwheat	None	None	1B.3
Calochortus raichei	Cedars fairy-lantern	None	None	1B.2
Arctostaphylos bakeri ssp. sublaevis	Cedars manzanita	None	Rare	1B.2
Lupinus sericatus	Cobb Mountain lupine	None	None	1B.2
Layia septentrionalis	Colusa layia	None	None	1B.2
Hemizonia congesta ssp. congesta	congested-headed hayfield tarplant	None	None	1B.2
Streptanthus morrisonii ssp. hirtiflorus	Dorr's Cabin jewelflower	None	None	1B.2
Downingia pusilla	dwarf downingia	None	None	2B.2
Chlorogalum pomeridianum var. minus	dwarf soaproot	None	None	1B.2
Navarretia leucocephala ssp. pauciflora	few-flowered navarretia	Endangered	Threatened	1B.1
Fritillaria liliacea	fragrant fritillary	None	None	1B.2
Allium peninsulare var. franciscanum	Franciscan onion	None	None	1B.2
Streptanthus brachiatus ssp. hoffmanii	Freed's jewelflower	None	None	1B.2
Panicum acuminatum var. thermale	Geysers panicum	None	Endangered	1B.2
Hesperolinon adenophyllum	glandular western flax	None	None	1B.2
Erigeron greenei	Greene's narrow-leaved daisy	None	None	1B.2
Harmonia hallii	Hall's harmonia	None	None	1B.2
Streptanthus glandulosus ssp. hoffmanii	Hoffman's bristly jewelflower	None	None	1B.3
Ceanothus purpureus	holly-leaved ceanothus	None	None	1B.2
Leptosiphon jepsonii	Jepson's leptosiphon	None	None	1B.2
Arctostaphylos manzanita ssp. elegans	Konocti manzanita	None	None	1B.3
Navarretia leucocephala ssp. plieantha	many-flowered navarretia	Endangered	Endangered	1B.2
Sidalcea oregana ssp. hydrophila	marsh checkerbloom	None	None	1B.2
Microseris paludosa	marsh microseris	None	None	1B.2
Streptanthus morrisonii ssp. morrisonii	Morrison's jewelflower	None	None	1B.2
Amorpha californica var. napensis	Napa false indigo	None	None	1B.2

Brodiaea leptandra	narrow-anthered brodiaea	None	None	1B.2
Centromadia parryi ssp. parryi	pappose tarplant	None	None	1B.2
Cordylanthus tenuis ssp. capillaris	Pennell's bird's-beak	Endangered	Rare	1B.2
Sidalcea malviflora ssp. purpurea	purple-stemmed checkerbloom	None	None	1B.2
Arctostaphylos stanfordiana ssp. raichei	Raiche's manzanita	None	None	1B.1
Ceanothus confusus	Rincon Ridge ceanothus	None	None	1B.1
Arctostaphylos stanfordiana ssp. decumbens	Rincon Ridge manzanita	None	None	1B.1
Trifolium buckwestiorum	Santa Cruz clover	None	None	1B.1
Limnanthes vinculans	Sebastopol meadowfoam	Endangered	Endangered	1B.1
Cryptantha dissita	serpentine cryptantha	None	None	1B.2
Erigeron serpentinus	serpentine daisy	None	None	1B.3
Kopsiopsis hookeri	small groundcone	None	None	2B.3
Streptanthus brachiatus ssp. brachiatus	Socrates Mine jewelflower	None	None	1B.2
Blennosperma bakeri	Sonoma sunshine	Endangered	Endangered	1B.1
Horkelia tenuiloba	thin-lobed horkelia	None	None	1B.2
Calystegia collina ssp. tridactylosa	three-fingered morning-glory	None	None	1B.2
Piperia candida	white-flowered rein orchid	None	None	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 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.

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 lower potential impacts to a level of insignificance.

Most 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,

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> *"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 1[1]. 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.

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Target Plant List for G/D/S CalVTP

SNAME	CNAME	FEDLIST	CALLIST	RPLANTRANK	Bloom Period
Navarretia leucocephala ssp. bakeri	Baker's navarretia	None	None	1B.1	
Eriastrum brandegeeae	Brandegee's eriastrum	None	None	1B.1	Apr-Aug
Carex comosa	bristly sedge	None	None	2B.1	May-Sep
Lasthenia burkei	Burke's goldfields	Endangered	Endangered	1B.1	
Lupinus sericatus	Cobb Mountain lupine	None	None	1B.2	Mar-Jun
Layia septentrionalis	Colusa layia	None	None	1B.2	Apr-May
Hemizonia congesta ssp. congesta	congested-headed hayfield tarplant	None	None	1B.2	Apr-Nov
Chlorogalum pomeridianum var. minus	dwarf soaproot	None	None	1B.2	May-Aug
Navarretia leucocephala ssp. pauciflora	few-flowered navarretia	Endangered	Threatened	1B.1	May-Jun
Streptanthus brachiatus ssp. hoffmanii	Freed's jewelflower	None	None	1B.2	May-July
Hesperolinon adenophyllum	glandular western flax	None	None	1B.2	May-Aug
Erigeron greenei	Greene's narrow-leaved daisy	None	None	1B.2	May-Sep
Harmonia hallii	Hall's harmonia	None	None	1B.2	Apr-Jun
Streptanthus glandulosus ssp. hoffmanii	Hoffman's bristly jewelflower	None	None	1B.3	Mar-Jul
Ceanothus purpureus	holly-leaved ceanothus	None	None	1B.2	Mar-May
Leptosiphon jepsonii	Jepson's leptosiphon	None	None	1B.2	Mar-May
Arctostaphylos manzanita ssp. elegans	Konocti manzanita	None	None	1B.3	Mar-May
Microseris paludosa	marsh microseris	None	None	1B.2	Apr-Jun
Amorpha californica var. napensis	Napa false indigo	None	None	1B.2	Apr-Jul
Brodiaea leptandra	narrow-anthered brodiaea	None	None	1B.2	May-July
Centromadia parryi ssp. parryi	pappose tarplant	None	None	1B.2	May-Nov
Ceanothus confusus	Rincon Ridge ceanothus	None	None	1B.1	Feb-Jun
Trifolium buckwestiorum	Santa Cruz clover	None	None	1B.1	April-Oct
Kopsiopsis hookeri	small groundcone	None	None	2B.3	April-Aug
Streptanthus brachiatus ssp. brachiatus	Socrates Mine jewelflower	None	None	1B.2	May-July
Blennosperma bakeri	Sonoma sunshine	Endangered	Endangered	1B.1	Mar-May
Horkelia tenuiloba	thin-lobed horkelia	None	None	1B.2	May-July

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Calystegia collina ssp. tridactylosa	three-fingered morning-glory	None	None	1B.2	Apr-Jun
Piperia candida	white-flowered rein orchid	None	None	1B.2	May-Sep

Survey Results

Three seasonally specific surveys were conducted (an early, mid, and late season). Surveys took place on March 6th – 7th, May 25th – 26th, and August 15th – 16th. During these dates the surveyor traversed the shaded fuel break and mechanical treatment areas (see Attachment C Maps) and identified all species present. When an unknown species was confronted, pictures and/or illustrations were obtained to key the individual while in the office. There were no listed or non-listed special status species located during the botanical surveys.

Identified Species

The following species were identified during the botanical survey:

Coast Redwood *(Sequoia sempervirens)*
Douglas-fir *(Pseudotsuga menziesii)*
California black oak *(Quercus kelloggii)*
Oregon white oak *(Quercus garryana)*
Coast live oak *(Quercus angustifolia)*
Interior live oak *(Quercus wislizeni)*
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)*
Pointleaf manzanita *(Arctostaphylos pungens)*
Coastal wood fern *(Dryopteris arguta)*
Yarrow *(Achillea millefolium)*
Deer brush *(Ceanothus integerrimus)*
Big manzanita *(Arctostaphylos manzanita)*
Yellow monkeyflower *(Mimulus guttatus)*
French broom *(Genista monspessulana)*
Dwarf rose *(Rosa gymnocarpa)*
Mugwort *(Artemisia Douglasii)*
Common pacific pea *(Lathyrus verstitus)*
Bearded iris *(Iris germanica)*
Silver lupine *(Lupinus albifrons)*

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Baby Blue eyes *(Nemophila menziesii)*
Blue dicks *(Dichelostemma capitatum)*
Western buttercup *(Runnunculus occidentalis)*
Milkmaids *(Cardamine californica)*
Sierra gooseberry *(Ribes roezlii)*
Swordfern *(Polystichum munitum)*
Golden poppy *(Eschscholzia californica)*
Canyon live oak *(Quercus chrysolepis)*
Scrub oak *(Quercus berberidifolia)*
Miner's lettuce *(Claytonia perfoliate)*
Bracken fern *(Pteriduim aquilinum)*
Pacific Yew *(Taxus brevifolia)*
Great Hound's Tongue (*Adelinia grande)*
Shooting star (*Dodecatheon pulchellum)*
Whiteleaf manzanita (*Arctostaphylos viscida)*
Bowltube iris (*Iris macrosiphon)*
Chocolate lily (*Fritillaria affinis)*
California buttercup (*Ranunculus californicus)*
Broadleaf lupine (*Lupinus latifolius)*
Stinking chamomile (*Anthemis cotula)*
Red larkspur (*Delphinium nudicaule)*
False garlic (*Nothoscordum bivalve)*
Death camus (*Toxicoscordion venenosum)*
Narrowleaf mule ears (*Wyethia angustifolia)*
Common dandelion (*Taraxacum officinale)*
Jersey cudweed (*Helichrysum luteoalbum)*
Treasure flower *(Ganzania linearis)*
Cardinal catchfly (*Silene laciniata)*
Creambush (*Holodiscus discolor)*
Rough hawkbit (*Leontodon saxatilis)*
Gold nuggets (*Calochortus luteus)*
Woolly sunflower (*Eriophyllum lanatum)*
Short lily (*Calochortus amabilis)*

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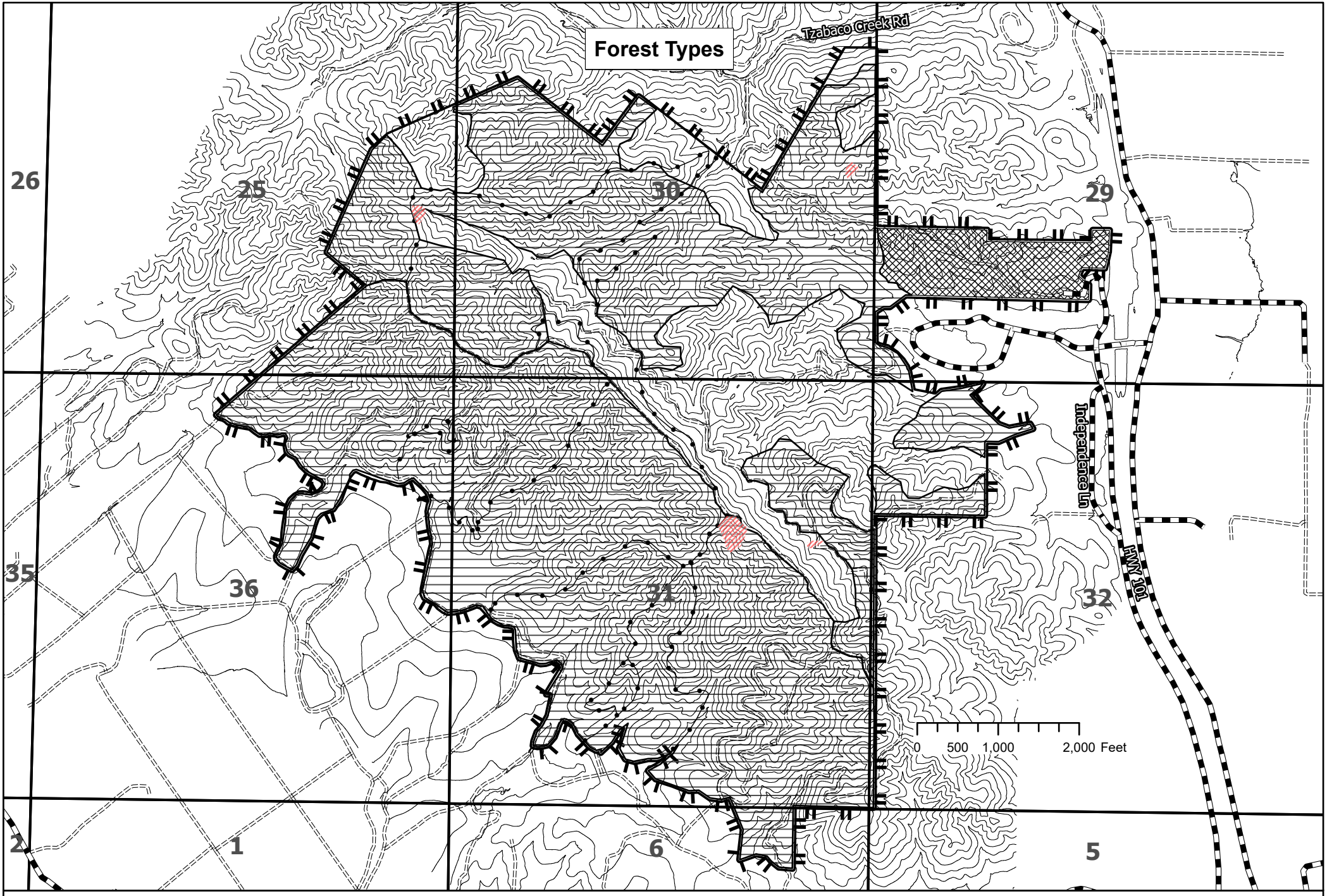


Gallo, Delicato, Stone CalVTP

Sections 29, 30, 31, & 32 T10N, R9W;
Sections 25 & 36 T10NN, R10W;
Section 6 T9N, R9W MDBM
Geyserville USGS 7.5 Minute Quadrangle

Scale: 1:18,000

Project Boundary

Unstable_Area

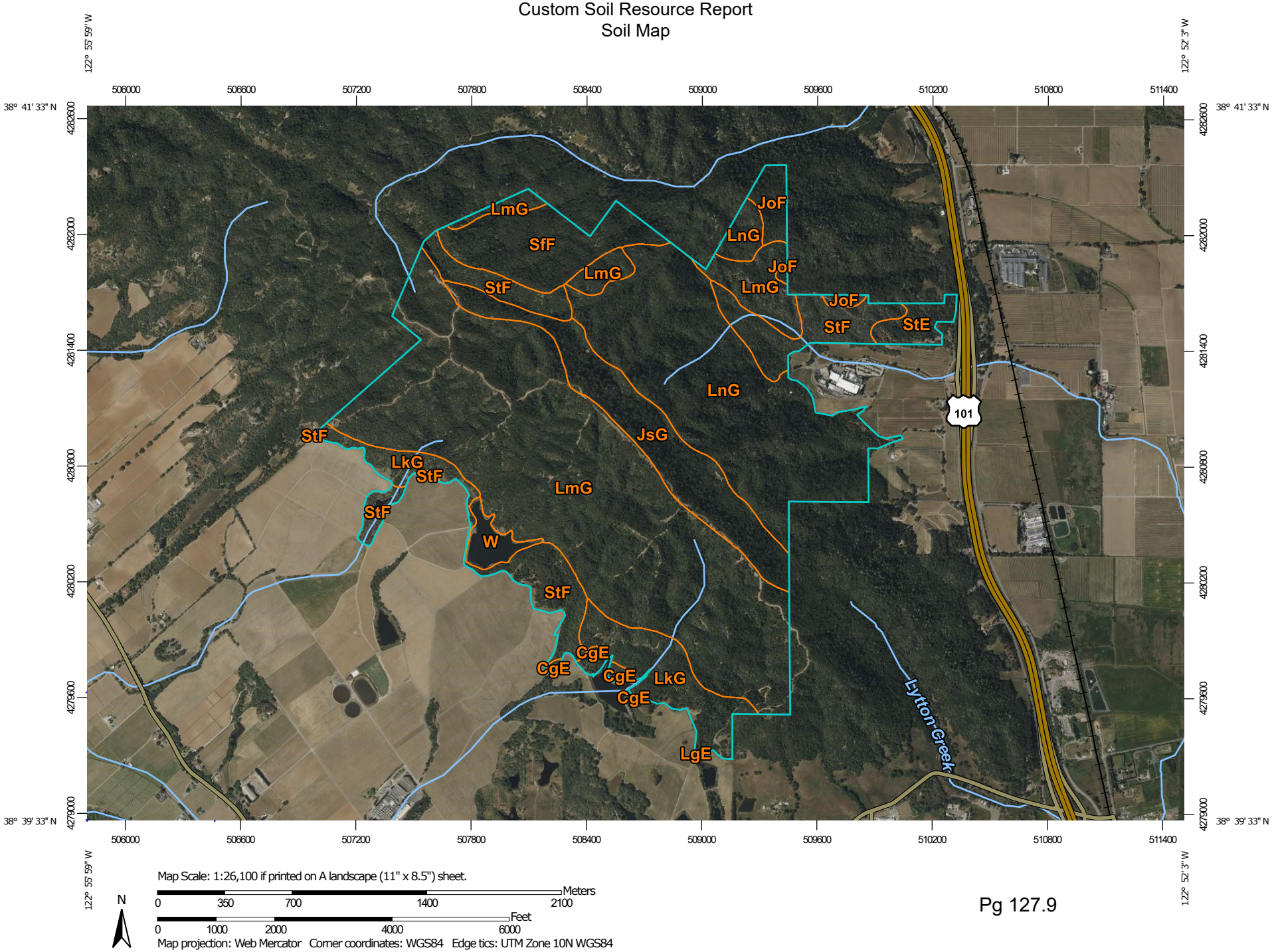
Roads
- Existing Permanent
- Existing Seasonal
- Needs Reconnaissance
- Jeep Trail

Strata
- Oak Woodland
- Oak/Manzanita
- Coast Redwood/Douglas-fir

Pg 127.8

N

JH 8/11/23


122° 55' 59" W
122° 52' 3" W
38° 41' 33" N
38° 39' 33" N
506000
506600
507200
507800
508400
509000
509600
510200
510800
511400
4282600
4282000
4281400
4280800
4280200
4279600
4279000
LmG
SfF
StF
JoF
LnG
JoF
LmG
JoF
StF
StE
LnG
101
StF
LkG
StF
JsG
LmG
StF
W
StF
CgE
CgE
CgE
LkG
CgE
LgE
Lytton Creek
Map Scale: 1:26,100 if printed on A landscape (11" x 8.5") sheet.
N
Meters
0
350
700
1400
2100
Feet
0
1000
2000
4000
6000
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Sonoma County, California
Survey Area Data: Version 16, Sep 14, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 26, 2022—Apr 25, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CgE	Clough gravelly loam, 15 to 30 percent slopes	7.1	0.6%
JoF	Josephine loam, 30 to 50 percent slopes	18.5	1.5%
JsG	Josephine-Sites loams, 30 to 75 percent slopes	103.4	8.4%
LgE	Laughlin loam, 2 to 30 percent slopes	0.0	0.0%
LkG	Los Gatos loam, 30 to 75 percent slopes, MLRA 15	80.2	6.5%
LmG	Los Gatos gravelly loam, 30 to 75 percent slopes	535.3	43.4%
LnG	Los Gatos-Josephine complex, 30 to 75 percent slopes	268.8	21.8%
SfF	Sites loam, 30 to 50 percent slopes	73.5	6.0%
StE	Suther loam, 15 to 30 percent slopes	17.3	1.4%
StF	Suther loam, 30 to 50 percent slopes	114.5	9.3%
W	Water	14.6	1.2%
Totals for Area of Interest		**1,233.2**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a

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