Attachment B

Geysers VTP # 2024-21

Biological Resource Assessment

As per SPR BIO-1, a reconnaissance level survey was conducted by the RPF, to determine what habitats were present within the project area. This habitat analysis informed the subsequent listed and non-listed species impact analysis. During the field reconnaissance, the following animal species were identified either visually or otherwise (i.e. scatt, tracks, etc…):

Black tail deer, wild pig, black bear, tree squirrel, ground squirrel, coyote, mountain lion, bobcat, bald eagle, red tail hawk, crow, raven, pileated woodpecker, blue jay, starling, oriole, robin, hummingbird, rainbow trout, and foothill yellow legged frog.

- The following are all rare, threatened, endangered, and Species of Special Concern with potential to occur within the project area. Species listed in the CNDDB within 1.3 miles of the project area along with species within the 9-quad with a high potential for occurrence will be included in the PSA, based on the results of reconnaissance level habitat surveys.

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. A high degree of 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. These trees will be assessed by an RPF or qualified biologist prior to removal.

Northern Spotted Owl (*Strix occidentalis caurina*)
Status: Federally Threatened; California Threatened
Habitat Requirements: Northern spotted owls (NSO) are old growth to second 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 very low potential for this species to occur. Habitat within the treatment area is poor due to a lack of mid – late seral stage forest or old growth forests. The closest known activity center is approximately 2.6 miles northeast of the project area.

Potential Project Impact: The potential for impact to this species is very low. Treatment is expected to have a positive impact on foraging habitat.

Bald Eagle (*Haliaeetus leucocephalus*)
Status: State Endangered
Habitat Requirements: Bald eagles require large bodies of water or free-flowing rivers with abundant fish and adjacent snags, cliffs, or perches (Zeiner et al. 1990a). Perches are often high in large-limbed trees on snags, broken-topped trees, or on rocks near water. Nests are found in large, old-growth, or dominant live trees with open branches (Call 1978). Nest stands frequently have less than 40% canopy, with some foliage shading the nest, and are within a mile of a permanent water source. In the winter, they roost communally in dense, sheltered, remote conifer stands often within 10 to 12 miles from feeding areas. Although bald eagle populations are recovering in the western U.S., nesting bald eagles are still very rare in this region. Bald eagles are tolerant of human activity when feeding, and may congregate around fish processing plants, dumps, and below dams where fish concentrate. In winter, bald eagles can also be seen in dry, open uplands if there is access to open water for fishing.
Potential for Occurrence: There is a low potential for this species to occur within the project area. Habitat in the project area is poor due to a lack of large trees and large bodies of water. The closest known observation is over 7 miles east of the project area.
Potential Project Impact: Due to the level of treatments proposed, the potential for impact is very low. SPR HYD-4 will ensure that the bald eagles main food source (fish) will not be impacted. Retention of large trees and snags will further protect habitat for this species.

Bell's Sparrow (*Artemisiospiza belli belli*)
Status: SSC
Habitat Requirements: Bell's sparrows bred in coastal sagebrush, chaparral, and other open, scrubby habitats. In chaparral, they tend toward younger, less dense stands; they are less common in older, taller stands. They forage on seeds and insects during the breeding season, taking beetles, grasshoppers, caterpillars, and other insects, plus spiders, seeds, small fruits and vegetation. During the nonbreeding season, they feed mostly on seeds from grasses, pigweed, and mustard plant. Bell's sparrows nest mainly within shrubs, bunchgrasses, and occasionally on the ground under shrubs, including California sagebrush, brittlebush, white sage, black sage, California buckwheat, bush mallow, chamise, cholla, and willow. Nests are built of twigs and coarse grasses, formed into a cup-shape, and lined with finer grasses, thin bark, and feathers, wool and animal hair (The Cornell Lab of Ornithology – All About Birds).
Potential for Occurrence: There is a low to moderate potential for this species to occur. Suitable habitat is present in the project area. No individuals or nests were observed during reconnaissance. The closest known occurrence is 4 miles Northwest of the project area.
Potential Project Impact: The potential for impact to this species is low. Current chaparral conditions are older and overgrown, treatment is expected to improve habitat quality for this species.

Burrowing owl (*Athene cunicularia*)
Status: Candidate State Endangered
Habitat Requirements: Burrowing owls are yearlong residents of Sonoma, Mendocino, and Lake Counties. They 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 potential for this species to occur within the project area is moderate. Suitable open dry grassland habitat is present within the project area. No individuals or nests were observed during reconnaissance. The closest known occurrence is over 6 miles Southwest of the project area.
Potential Project Impact: The potential for the proposed activities to impact this species is low. Areas with suitable habitat are not targeted for manual treatment due to lack of fuel. Prescribed burning will likely have a positive effect on habitat quality. The implementation of SPR BIO-2 will train crew members to identify and avoid this and other special status species.

Osprey (*Pandion haliaetus*)
Status: SSC, BFS
Habitat Requirements: Some osprey are year-round residents in this part of the state, 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: The potential for this species to occur within the project area is low, due to the lack of deep fish bearing waters, such as ponds, lakes, or rivers. The closest known occurrence is over 7 miles North of the project area.
Potential Project Impact: The potential for impact to this species is low due to retention of large trees and snags and the low habitat potential.

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 cactus (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 low potential for this species to occur. Habitat is poor within the project area due to a lack of old growth trees. The closest known occurrence is .2 miles east of the project area.
Potential Project Impact: The potential for impact to this species is low due to retention of large trees and snags.

Tricolored Blackbird (*Agelaius tricolor*)
Status: California Threatened
Habitat Requirements: The tricolored blackbird is a breeding resident in most of California, primarily in the Central Valley, and coastal areas from southern Sonoma County along the coast to San Diego County. They breed and forage in a variety of habitats, including salt marshes, moist grasslands, freshwater marshes, bay-shore habitats, riparian forests, and oak savannahs. This species commonly builds nests just above ground or water and up to several meters high in trees. Usually, nests are close to water or near spiny vegetation to inhibit access by predators.
Potential for Occurrence: There is a low potential for this species to occur. Habitat within the project area is mainly around the various wet areas, and ponds. No individuals or nests were observed during reconnaissance and the closest known occurrence is more than 6 miles Northwest of the project area.
Potential Project Impact: The potential for the proposed activities to impact this species is highly unlikely. If habitat exists within the treatment units, watercourse and wetland protection measures such as SPR HYD-4 will prevent damage to this species crucial habitat.

Mammals

Fisher (*Pekania pennanti*) [West Coast Distinct Population Segment (DPS)]
Status: SSC, ST
Habitat Requirements: P. pennanti is a stocky, dark brown weasel with a long brushy tail. Fishers are primarily nocturnal and known to be solitary except during the breeding season in late February through April. This fur-bearing mammal travels along fallen logs and move among branches from tree to tree and often den in hollow downed wood or large snags. Habitat components for the West Coast DPS fishers includes forest stands with late-successional characteristics such as high canopy closure, large trees and snags, and large woody debris (USFWS 2004). If these characteristics exist in earlier aged stands, fishers may still be present as den site and prey availability were found to be related to these habitat attributes (USFWS 2004).
Potential for Occurrence: There is a low potential for habitat in the project area due to the lack of late successional forest stands. The closest known occurrence is approximately 2 miles south of project area.
Potential Project Impact: There is a low potential for impact to this species due to the retention of large trees and snags and general lack of habitat. Prescribed burning will likely have a positive effect on habitat quality.

Fringed myotis (*Myotis thysanodes*)
Status: BFS
Habitat Requirements: Optimal habitats for the Fringed myotis are pinyon-juniper, valley and foothill grassland and hardwood-conifer habitats. They roost in caves, mines, buildings, and crevices. They forage around streams, lakes, and ponds.
Potential for Occurrence: There is a moderate potential for occurrence for this species. There is suitable habitat present within the project area in any caves, mines, buildings, or crevices. Several mines are mapped within the project area, no open mines were discovered during reconnaissance. No individuals were observed during reconnaissance and the closest known occurrence is over 2 miles northeast of the project area.
Potential Project Impact: There is a low potential for impact to this species. Areas where roosting is likely are not targeted for intensive treatment. Bridges, buildings, and other structures are not proposed for alteration. Broadcast burning treatments are not expected to impact this species due to the insulation against sounds and temperature provided by caves and mines. The implementation of SPR BIO-2 will train crew members to identify and avoid this and other special status species.

Hoary Bat (*Lasiurus cinereus*)
Status: SSC
Habitat Requirements: Hoary bats can be yearlong residents of Mendocino County. 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 a low potential for this species to occur, suitable habitat is present within the project area. No individuals were observed during reconnaissance and the closest known occurrence is over 2 miles northeast of the project area.
Potential Project Impact: There is a low potential for impact to this species due to the retention of large trees.

Long-eared myotis (*Myotis evotis*)
Status: BFS
Habitat Requirements: The Long-eared myotis have been found in nearly all brush, woodland and forest habitats, but seems to prefer coniferous woodlands and forests. They roost in caves, under bark, snags, and crevices. They forage along habitat edges, in open habitats and over water.

Potential for Occurrence: There is a moderate potential for occurrence for this species. There is suitable habitat present in the project area. No individuals were observed and there were no natural caves or mines found within the assessment area during reconnaissance. The closest known occurrence is over 2 miles northeast of the project area
Potential Project Impact: There is a low potential for impact to this species.

North American Porcupine (*Erethizon dorsatum*)
Status: SSC
Habitat Requirements: North American porcupines range from Canada, Alaska, and 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 low to moderate potential for this species to occur within the treatment units. No individuals were observed during field reconnaissance and the closest known occurrence is more than 3 miles from the project area.
Potential Project Impact: There is a low potential for this species to be impacted by operations. SPR BIO-2 will ensure workers are trained on identifying and retaining potential habitat for this species. The use of prescribed fire will likely create new potential habitat by enhancing tree and log basal hollows.

Pallid Bat (*Antrozous pallidus*)
Status: None
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 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 moderate potential for this species to occur. Habitat is present within the project area under any bridges, buildings, caves, and other suitable roosting structures. Several mines are mapped within the project area, no open mines were discovered during reconnaissance. The closest known occurrence is over two miles northeast of the project area.

Potential Project Impact: There is a low potential for impact to this species. Bridges, buildings, and other structures are not proposed for alteration; large trees and snags will also be retained. Broadcast burning treatments are not expected to impact this species due to the insulation against sounds and temperature provided by caves and mines. The implementation of SPR BIO-2 will train crew members to identify and avoid this and other special status species.

Silver-haired bat (*Lasionycteris noctivagans*)
Status: SSC
Habitat Requirements: Silver-haired bat (*Lasionycteris noctivagans*): The silver-haired bat is primarily a coastal and montane forest dweller, roosting and foraging within lower montane coniferous forest, oldgrowth, and riparian forests. Roosting habitat consists of within hollow trees, beneath exfoliating bark, abandoned woodpecker holes, snags, buildings, caves and rarely under rocks. *L. noctivagans* feeds over streams, ponds and open brushy areas.
Potential for Occurrence: There is moderate potential for this species to occur within the project area. Potential habitat is present in large trees or snags in the project area as well as buildings and caves. Several mines are mapped within the project area, no open mines were discovered during reconnaissance. The closest known occurrence is a 1924 collection 2 miles east of the project area.

Potential Project Impact: There is low potential for impact to this species. Existing structures are not proposed for alteration; Large trees and snags will be retained. Broadcast burning treatments are not expected to impact this species due to the insulation against sounds and temperature provided by caves and mines. The implementation of SPR BIO-2 will train crew members to identify and avoid this and other special status species.

Townsend's Big-Eared Bat (*Corynorhinus townsendii)*
Status: None
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 moderate potential for this species to occur within the project area. Man made structures are present for potential roosting habitat. According to CNDDB, one individual was observed in an old house adjacent to the project area in 1954, the exact location is unknown and is mapped generally 3 miles WNW of Middletown, Lake Co. There were no trees large enough to provide habitat for this species observed during reconnaissance. Several mines are mapped within the project area, no open mines were discovered during reconnaissance.

Potential Project Impact: There is a low potential for impact to this species due to the retention of large trees and structures. The implementation of SPR BIO-2 will train crew members to identify and avoid this and other special status species.

Western Red Bat (*Lasirurs blossevillii)*
Status: SSC
Habitat Requirements: Western red bats are solitary animals who prefer riparian areas dominated by walnuts, oaks, willows, cottonwoods, and sycamores where they roost in these broad-leafed trees. They roost only in tree foliage, and in leaf litter in the winter. Peak foraging time occurs one to two hours after sunset. Studies of these bats indicate they migrate to the southern part of their range to hibernate. They are solitary by nature but will gather in larger nursery roosts during the summer. Currently there is no proposal for listing this bat as threatened or endangered by the United States Fish and Wildlife Service. However, bat biologists are concerned that the loss of suitable riparian habitats are affecting the population and are keeping a close watch on this species.
Potential for Occurrence: There is low potential for this species to occur within riparian zones in the project area. The closest known observation is over 2 miles northeast of the project area.
Potential Project Impact: There is a low potential for impact to this species. Implementation of SPR HYD-4 will ensure protection of riparian areas where this species roosts and SPR BIO-2 will train crew members in identifying and avoiding this species.

Amphibians and Reptiles

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 of this species. Suitable habitat is present in class 1 and 2 watercourses throughout the project area. No individuals were observed during reconnaissance. There are multiple known observations within the project area. The most recent is a 2000 observation during electrofishing surveys in Big Sulphur Creek, this is located in the phase two treatment unit on the southern border. Followed by a 1987 collection of three individuals in an unnamed tributary to Big Sulphur Creek above unit 3 near the edge of unit 1B. A 1925 collection of one larva in an unnamed tributary to Kelsey Creek on the northeast slope of Cobb Mountain. Mapped circle overlaps phase two. A 1919 collection of one adult at Castle Rock Springs, a tributary of Anderson Creek. This collection is mapped along the eastern edge of unit 7. As well as a 1890-1911 collection of one adult in Glenbrook, just north of the project area but mapped into a portion of phase 2. Date and exact location not recorded, likely collected from Alder Creek or Kelsey Creek.
Potential Project Impact: The potential for the project to impact this species is low. The watercourse protection measures, particularly SPR HYD-4 will ensure protection of individuals and critical habitat from damaging effects of treatments. Also, SPRs GEO-1, GEO-2, and GEO-3 will prevent ground disturbance during periods of soil saturation, when this species may wander outside the WLPZ.

California Red-Legged Frog (*Rana draytonii*)
Status: FT, SP, SSC
Habitat 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 ranid frog will also use upland habitats outside of the breeding season and may be discovered under logs, rocks, and other debris during wet conditions. CRLF were historically believed to prefer only habitats and shorelines with extensive vegetation.
Potential for Occurrence: There is a moderate to high potential for this species to occur in the streams or ponds within the project area. No individuals were observed during reconnaissance. The closest known observation is a 1945 collection near the edge of the project area in the forest lake resort community along Putah Creek, mapped less than 900 feet into the project area in the phase 2 treatment unit.
Potential Project Impact: The potential for the project to impact this species is low. The watercourse protection measures, particularly SPR HYD-4 will ensure protection of individuals and critical habitat from damaging effects of treatments. Also, SPRs GEO-1, GEO-2, and GEO-3 will prevent ground disturbance during periods of soil saturation, when this species may wander outside the WLPZ.

Foothill Yellow-Legged Frog *(Rana boylii)*
Status: SSC; CDFW determined this species not to be special status within the coastal range.
Habitat Requirements: Foothill Yellow-Legged Frogs (FYLF) are associated with lower elevation streams draining the Pacific slope from west-central Oregon to northwestern Baja California. They have declined from over 50% of their historic range. 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. FYLF reproduce in the spring by depositing egg masses into glide habitats within larger watercourses (typically Class I waters). Egg masses are deposited on the down-stream side of cobble size rocks during April-May. Larval forms (tadpoles) rear in watercourses until early fall. Post-metamorphic frogs tend to stay in close proximity to their water source. Adults can migrate down the drainage network to channels that are broad and more sunlit. Seasonal variation in streamflow has a strong influence on life history and movement. Breeding and rearing typically occur in open sunny portions of class I and II watercourses which are gently flowing and low-gradient.
Potential for Occurrence: There is a high potential for this species to occur in the suitable habitat within streams or ponds in the project area. No individuals were observed during reconnaissance. There are 15 known observations within the project area.
The most recent being 124 individuals caught and released in 2017 in Mayacamas creek, a tributary of Big Sulphur Creek. Other observations are in class 2 watercourses throughout the treatment area, this species is locally abundant and is not expected to be adversely impacted by treatment.
Potential Project Impact: The potential for the project to impact this species is very low. The watercourse protection measures, particularly SPR HYD-4 will ensure protection of individuals and critical habitat from damaging effects of treatments. Also, SPRs GEO-1, GEO-2, and GEO-3 will prevent ground disturbance during periods of soil saturation, when this species may wander outside the WLPZ.

Red-Bellied Newt (*Taricha rivularis*)
Status: SSC
Habitat Requirements: The red-bellied newt ranges within Mendocino, Sonoma, Humboldt, and Lake Counties. They are predominantly found in redwood forests, along the coast, however have also been detected in Douglas-fir, tan oak, mixed conifer, valley-foothill woodland, montane woodland, hardwood-conifer and madrone 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 high potential for this species to occur. There are three known observations within the project area. The first is along the road above unit 3 and Big Sulphur Creek; 6 individuals collected in 1951, 2011, and 2012. In 1991, 19 individuals were collected from Big Sulphur Creek near the corner of units 1A, 1B, and 3. 2 individuals were collected in 1969 and again in 1977 16 miles NE of Geyserville, mapped at Cobb Mountain in the phase 2 treatment unit.
Potential Project Impact: The potential for the project to impact this species is low. The watercourse protection measures, particularly SPR HYD-4 will ensure protection of individuals and critical habitat from damaging effects of treatments. Also, SPRs GEO-1, GEO-2, and GEO-3 will prevent ground disturbance during periods of soil saturation. This will protect this species during its breeding period, immediately following heavy winter rain events.

Western Pond Turtle *(Emys marmorata)*
Status: None
Habitat Requirements: The pond turtle is associated with permanent ponds, lakes, streams, or permanent pools along intermittent streams in a wide variety of habitats. It requires basking sites in the aquatic environment, grassy openings for nest sites, and nests 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 a moderate to high potential for this species to occur. The closest known observation is on the northern edge of the project area.
Potential Project Impact: The potential for the project to impact this species is low. The watercourse protection measures, particularly SPR HYD-4 will ensure protection of individuals and critical habitat from damaging effects of treatments. Nest sites near the project area have the potential to be impacted if located outside of the WLPZ. SPR BIO-2 will require training for workers to identify and avoid nesting sites during treatment.

Fish

Coho Salmon (Oncorhynchus kisutch) [Central California Coast Evolutionarily Significant Unit]
Status: FE, SE
Habitat Requirements: The coho requires specific habitat for each life stage. Upstream adult spawning migration generally occurs from late October to mid-February (Flosi and Reynolds 1994) Coho migrate up and spawn in streams that flow directly into the ocean or tributaries of larger rivers. Constraints to upstream access include insufficient precipitation and runoff to enable upstream movement; barriers (debris jams, falls, or improperly constructed crossings); and low water quality (temperatures, low dissolved oxygen, high turbidity).

Downstream migration to the ocean starts around March when the coho are about 1 year old. The migration peaks around mid-May and continues until mid-June. Coho will spend two to three years at sea before migrating back to their natal stream to spawn.

The eggs and alevins, hatchlings with yolk sacs, are more sensitive to adverse conditions than the other developmental phases. Reduced inter-gravel water velocity depletes dissolved oxygen and concentrates metabolic wastes.

Coho rear in freshwater for about 15 months between emergence from the gravel until migration to the ocean. After emergence the fry disperse both up and down stream from the redd into available habitat. Fry rear in edgewater habitats moving gradually into deeper water as they grow larger. Highest densities area usually associated with deep pools (≥1m), with plenty of

overhead cover, undercut banks, logs, and other woody debris and water temperatures not exceeding 25°C (72-77°F) for extended periods of time (Moyle 1976). Preferred water temperatures are in the 7.2-16.7°C (45-62°F) range (Hassler 1987). Weekly average water temperatures in central Sonoma County found coho salmon to be 18.0 – 18.3° C, with lethal temperatures occurring above 23.4°C. The primary food source for Salmonids is invertebrates. Production of invertebrates is related to the fertility of the watercourse, stream temperature, solar radiation, and amount of organic material available in the stream.
Potential for Occurrence: There is a low potential for this species to occur. The closest known occurrence is over 9 miles southwest of the project area.
Potential Project Impact: There is a very low potential for impact to this species. Implementation of SPR HYD-4 will protect individuals and habitat from any adverse impacts from treatment.

Hardhead (Mylopharodon conocepalus)
Status: SSC
Habitat Requirements: Hardheads are typically found in small to large streams in low to mid elevation environment. They may also inhabit lakes or reservoirs. Within a stream, hardheads tend to prefer warmer temperatures than salmonids and they are often found associated with pikeminnows and suckers. The hardhead minnow is usually found in clear deep streams with a slow but present flow.
Potential for Occurrence: There is a low potential for occurrence. The closest known observation is over 5 miles southwest of the project area.
Potential Project Impact: The potential for the project to impact this species is low. The watercourse protection measures, particularly SPR HYD-4 will ensure protection of individuals and critical habitat from damaging effects of treatments.

Steelhead *(Oncorhynchus mykiss)* Central California Coast DPS
Status: Federally Threatened/Species of Special Concern.
Habitat Requirements: Inhabits class I watercourses. Adults return to their natal watercourses in the winter and spring to spawn. Juveniles spend from 1 year to their entire lives rearing in freshwater environments before migrating to the ocean.
Potential for Occurrence: There is high potential for occurrence within the project area. There is a known observation within the project area in Mayacamas Creek, a tributary to Big Sulphur Creek; 207 adults and 270 juveniles were observed at sample stations in 1998.
Potential Project Impact: The potential for the project to impact this species is low. The watercourse protection measures, particularly SPR HYD-4 will ensure protection of individuals and critical habitat from damaging effects of treatments**.**

Insects

Obscure Bumblebee (*Bombus caligninosus)*
Status: SSC
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 moderate to high potential for this species to occur, habitat does exist within the project area. The closest known observation is a 1963 collection near the northern edge of the project area. No individuals or hives were encountered during field reconnaissance
Potential Project Impact: There is a moderate potential for impact to this species. Grassland and oak woodland habitats are not targeted for intensive treatments. Prescribed burning treatments are expected to have a positive impact on this species by improving habitat quality.

Ricksecker's water scavenger beetle (*Hydrochara ricksecker*i)
Status: SSC
Habitation Requirements: Habitat is considered unknown, however individuals have been observed in artificial ponds and vernal ponds, and adults of the species are capable of flight, however are aquatic by nature. All known collection records are from December 27 to July 30 (most in April and May), which would correspond to when vernal pools are most likely to contain water (Short, Post, Toussaint, 2017).
Potential for Occurrence: There is a moderate potential for this species to occur in ponds in the treatment area. The closest known observation is at Boggs Lake just past the northern edge of the project area.
Potential Project Impact: The potential for the project to impact this species is low. The watercourse protection measures, particularly SPR HYD-4 will ensure protection of individuals and critical habitat from damaging effects of treatments.

Serpentine cypress wood-boring beetle (Trachykele hartmani**)**
Status: SSC
Habitation Requirements: The serpentine cypress wood-boring beetle is associated with Sargent and McNab cypress trees. Larvae develop in Sargent cypress. This species is restricted to Napa, Colusa, and Lake counties. The last known occurrence of this species was on February 26, 1986 accessed via the CNDDB RareFind (version 5.2.14).
Potential for Occurrence: There is a low to moderate potential for this species to occur. The closest known occurrence of this species is over 5 miles south of the project area.
Potential Project Impact: The potential for impact to this species is moderate. Prescribed fire treatments are expected to have a net positive impact on habitat quality. Use of fire will provide dead and dying trees for this species to utilize.

Western bumblebee (*Bombus occidentalis*)
Status: Candidate State Endangered
Habitation Requirements: The western bumble bee was once very common in the western United States and western Canada. It is mostly currently restricted to high meadows and coastal environments. It requires floral resources, undisturbed nest sites and overwintering sites. Nesting habitat is typically underground, such as in old animal burrows, but also possibly above ground such as in cavities in logs. Overwintering sites are probably under plant litter and debris. Flight period in California is from early February to late November, peaking in late June and late September. Western bumble bees primarily nest in underground cavities such as old squirrel burrows on open west-southwest facing slopes bordered by trees. Colonies can contain as many as 1,685 workers and produce up to 360 new queens.
Potential for Occurrence: There is a moderate to high potential for this species to occur within the project area. One sighting occurred during initial project reconnaissance. One individual was found in the Roads treatment unit between units 2A and 2B on June 24, 2024. An additional survey covering the surrounding acre was conducted on July 16, 2024 with no individuals found. The closest known occurrence, aside from this observation, is a 1960 collection at Cobb Mountain within the project area. See attachment C maps.
Potential Project Impact: There is a low potential for impact to this species. Prescribed fire treatments are expected to have a net positive impact on habitat quality and floral resources. This is due to their lower intensity compared to wildfires which maintains seedbank integrity and promotes native plant biodiversity. This increase to floral resources will promote bee diversity through habitat improvement. Implementation of the treatments proposed in this project will also prevent large scale wildfires that burn during suboptimal weather conditions, which would damage bumble bee habitat. Thus the implementation of prescribed fire will help to prevent this otherwise damaging event from taking place, by removing excess fuel within these areas during periods of mild fire weather (i.e. a high degree of vegetation will be retained).
Mitigations: Treatments will be conducted in a patchy pattern to the extent feasible in suitable habitat, such that the entirety of the habitat is not burned or removed and untreated portions of occupied or suitable habitat are retained (e.g., fire breaks will be aligned to allow for areas of unburned floral resources for special-status bumble bees within the treatment area). Reconnaissance surveys were conducted throughout the treatment area. Although habitat was identified (most oak woodlands contain suitable habitat) only one individual of this species was

positively identified and no colonies were discovered. Much of the treatment area contains overgrown chapparal and forest. These areas represent poor habitat for this species. Overall, these areas of poor habitat will be targeted for treatment by this project, because they also represent the areas of highest fire danger. Focusing on treatment in these areas will provide more habitat for this species to expand, if there are any colonies present. Impact to this species in the short term will not be significant and the long term effect of the project on this species is expected to be a net benefit through habitat creation and improvement.

Crustaceans

California linderiella (*Linderiella occidentalis*)
Status: non listed
Habitat Requirements: The California linderiella is widely distributed in California. It can be found in seasonal ponds and the habitats may be very small.
Potential for Occurrence: There is a moderate potential for this species to occur. The closest known observation is at Boggs Lake just outside the northern border of the project area.
Potential Project Impact: The potential for the project to impact this species is low. The watercourse protection measures, particularly SPR HYD-4 will ensure protection of individuals and critical habitat from damaging effects of treatments.

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Botany Report for The Geysers VTP # 2024-21

10/18/2024

Prepared for:

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_____

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Frontier Resource Management

Introduction:

The goal of this botanical survey and report is to search for special status plant species within the portion of the Geysers VTP. The treatment area is approximately 27,285 acres and is depicted on the attached map. The legal description is Section 6 T10N R7W, Sections 1, 4, & 5 T10N R8W, Sections 29, 30, 31, 32, & 33 T11N R7W, Sections 3, 4, 5, 6, 7, 8, 9, 10, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, & 36 T11N R8W, Sections 1, 2, 3, 4, 5, 9, 10, 11, 12, 13, 14, 15, 23, 24, & 25 T11N R9W, Sections 18, 19, 30, 31, 32, 33 T12N R8W, Sections 24, 25, 26, 27, 28, 33, 34, 35, & 36 T12N R9W, MDBM within Kelseyville, Asti, The Geysers, Whispering Pines USGS 7.5 Minute Quadrangles. The treatment area is within Mendocino, Sonoma, and Lake Counties between Highway 175 and Geysers Road and has an elevation range of approximately 720 - 4720 feet above sea level.

The entire project area is included in the Geysers VTP. Shaded fuel breaks and ecological restoration treatment types shall be utilized, both of which have a low potential for impacting special status plant species. This is due to the minimal alterations to the vegetation community through the retention of large trees. Vegetation may be cut, masticated, grazed, and/or treated in accordance with the Standard Project Requirements (SPRs) and treatment specifications outlined in the CalVTP PSA. See the PEIR treatment descriptions for more detail.

Nevertheless, there is potential for special status plant species to be impacted individually, albeit not on a large community wide scale. During the initial reconnaissance surveys, it was thus determined that a seasonally specific, floristic survey was necessary to protect special status species from potential impact. With the implementation of these surveys, the potential for impact will be reduced to a level of insignificance.

Soils & Vegetation Types:

The following are the dominant soil types within the project area. Those comprising less than 5% of the total project area were omitted. Approximately 11% of the project area contains 173 & 174 - Maymen-Hopland-Mayacama association. This soil type is a gravelly loam with sandstone and shale as their parent material. Soil depths are 10 – 40 inches to lithic or paralithic bedrock. Approximately 7% of the project area contains LhG - Laughlin-Yorkville complex. This is a complex of sandy clay loam and clay loam that is Residuum from mostly sedimentary rock. Soil depths are 20 – 60 inches to lithic or paralithic bedrock. Approximately 8% of the project area is LkG – Los Gatos loam. This is a gravely loam which is Residuum from sedimentary rock. Soil depths are 24 to 39 inches to lithic bedrock. Approximately 5% of the project area is McF - Maymen gravelly sandy loam. This is a gravelly sandy loam which is residuum weathered from sedimentary rock. Soil depth is 10 – 20 inches to lithic bedrock. Approximately 5% of the project area is RoG – Rock Land. This is 0 – 10 inches of residuum from igneous, metamorphic and sedimentary rock on top of lithic bedrock. Approximately 15% of the project area contains SoG - Stonyford gravelly loam. This is a gravelly clay loam with igneous rock as its parent material. Soil depth is 10 – 20 inches to lithic bedrock. The remaining 49% of the project area is comprised of many minor components of various soil types.

The vegetation types present are best characterized as Chaparral, Mixed hardwood, Conifer, Oak woodland, and Perennial Grassland. Due to the size of the project area, it has been divided into treatment units based on roads, topography, watercourses, and vegetation; See PSA for further detail. Tree and shrub species present include but are not limited to California bay laurel (Umbellularia californica), Pacific madrone (Arbutus menziesii), Douglass fir (Psuedotsuga menziesii), knobcone pine (Pinus attenuata), bigleaf maple (Acer macrophyllum), canyon live oak (Quercus chrysolepis), interior live oak (Quercus wislizeni), ponderosa pine (Pinus ponderosa), ghost pine (Pinus sabiniana), Oregon white oak (Quercus garryana), blue oak (Quercus douglasii), black oak (Quercus kelloggii), valley oak (Quercus lobata), California buckeye (Aesculus californica), Chamise (Adenostoma fasciculatum), yerba santa (Eriodictyon californicum), mountain mahogany (Cercocarpus betuloides), and buckbrush (Ceanothus cuneatus). The understory contains young saplings and seedlings of the overstory species as well as various forbs and grasses.

CNDDB & CNPS Special Status Plants Within the 9 Quads:

SNAME	CNAME	FEDLIST	CALLIST	RPLANTRANK
Navarretia leucocephala ssp. bakeri	Baker's navarretia	None	None	1B.1
Amsinckia lunaris	bent-flowered fiddleneck	None	None	1B.2
Gratiola heterosepala	Boggs Lake hedge-hyssop	None	Endangered	1B.2
Horkelia bolanderi	Bolander's horkelia	None	None	1B.2
Eriastrum brandegeeae	Brandegee's eriastrum	None	None	1B.1
Lasthenia burkei	Burke's goldfields	Endangered	Endangered	1B.1
Ceanothus divergens	Calistoga ceanothus	None	None	1B.2
Downingia willamettensis	Cascade downingia	None	None	2B.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
Antirrhinum subcordatum	dimorphic snapdragon	None	None	4.3
Chlorogalum pomeridianum var. minus	dwarf soaproot	None	None	1B.2
Potamogeton zosteriformis	eel-grass pondweed	None	None	2B.2
Mielichhoferia elongata	elongate copper moss	None	None	4.3
Navarretia leucocephala ssp. pauciflora	few-flowered navarretia	Endangered	Threatened	1B.1
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
Camissonia lacustris	grassland suncup	None	None	1B.2
Streptanthus hesperidis	green jewelflower	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

Leptosiphon jepsonii	Jepson's leptosiphon	None	None	1B.2
Astragalus rattanii var. jepsonianus	Jepson's milk-vetch	None	None	1B.2
Sidalcea oregana ssp. valida	Kenwood Marsh checkerbloom	Endangered	Endangered	1B.1
Arctostaphylos manzanita ssp. elegans	Konocti manzanita	None	None	1B.3
Sedella leiocarpa	Lake County stonecrop	Endangered	Endangered	1B.1
Hesperolinon didymocarpum	Lake County western flax	None	Endangered	1B.2
Legenere limosa	legenere	None	None	1B.1
Eryngium constancei	Loch Lomond button-celery	Endangered	Endangered	1B.1
Navarretia leucocephala ssp. Plieantha	many-flowered navarretia	Endangered	Endangered	1B.2
Sidalcea oregana ssp. hydrophila	marsh checkerbloom	None	None	1B.2
Calystegia collina ssp. oxyphylla	Mt. Saint Helena morning-glory	None	None	4.2
Trichostema ruygtii	Napa bluecurls	None	None	1B.2
Brodiaea leptandra	narrow-anthered brodiaea	None	None	1B.2
Carex praticola	northern meadow sedge	None	None	2B.2
Stuckenia filiformis ssp. alpina	northern slender pondweed	None	None	2B.2
Castilleja rubicundula var. rubicundula	pink creamsacs	None	None	1B.2
Navarretia paradoxinota	Porter's navarretia	None	None	1B.3
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 hydrophilum	saline clover	None	None	1B.2
Limnanthes vinculans	Sebastopol meadowfoam	Endangered	Endangered	1B.1
Cryptantha dissita	serpentine cryptantha	None	None	1B.2
Hesperolinon sharsmithiae	Sharsmith's western flax	None	None	1B.2
Orcuttia tenuis	slender Orcutt grass	Threatened	Endangered	1B.1
Calycadenia micrantha	small-flowered calycadenia	None	None	1B.2

Eriogonum nervulosum	Snow Mountain buckwheat	None	None	1B.2
Streptanthus brachiatus ssp. brachiatus	Socrates Mine jewelflower	None	None	1B.2
Penstemon newberryi var. sonomensis	Sonoma beardtongue	None	None	1B.3
Horkelia tenuiloba	thin-lobed horkelia	None	None	1B.2
Calystegia collina ssp. tridactylosa	three-fingered morning-glory	None	None	1B.2
Grimmia torenii	Toren's grimmia	None	None	1B.3
Hesperolinon bicarpellatum	two-carpellate western flax	None	None	1B.2
Brasenia schreberi	watershield	None	None	2B.3
Limnanthes floccosa ssp. floccosa	woolly meadowfoam	None	None	4.2

Survey Methods & Pre-field Research

Pre-field research along with reconnaissance surveys were conducted to determine the habitat and soil types present within the project area. Soils data from the USGS Web Soil Survey was analyzed, followed by field observations. See the soil and vegetation assessment above.

Results of this habitat assessment were used to narrow the list of potential special status plants. Perennial watercourses were noted, however, the CalVTP WLPZ protection measures outlined in SPR HYD-4 and SPR BIO-4 will prevent potential impact to plants within these habitats. Thus, riparian species were not included in the target list. The elevation range and lack of extreme soil pH levels were used to further narrow the list.

The survey dates were chosen based on the overlapping peak blooming periods of the target species list. The project area was surveyed on foot during the 3 seasonally specific blooming periods. All plant species encountered during the surveys were identified and are listed at the end of this report.

Special status plants include those which are state/federally listed as rare, threatened, or endangered; or those which have been given a rare plant rank of 1, 2, or 3 by the California Native Plant Society. The CNPS Rare plant rank is as follows:

- 1A: Plants presumed extirpated in California, and either rare or extinct elsewhere
- 1B: Plants rare, threatened or endangered in California and elsewhere.
- 2A: Plants presumed extirpated in California but more common elsewhere
- 2B: Plants rare, threatened, or endangered in California but more common elsewhere.
- 3: Plants on which more information is needed.

California Native Plant Society Threat Codes:

- .1 Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
- .2 Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
- .3 Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

The resulting list of all plants encountered during the survey is included in the results section below.

Botany Survey Target Species

Scientific Name	Common Name	Federal Listing	State Listing	Rare Plant Rank	Bloom	Habitat
Navarretia leucocephala ssp. bakeri	Baker's navarretia	None	None	1B.1	Apr-Jul	Wetlands, meadows, vernal-pools. Usually in wetlands, but may occur in Meadows.
Arctostaphylos bakeri	Baker's manzanita	None (has an endangered subspecies)	None (has an endangered subspecies)	n/a	Feb - Mar	Closed-cone Pine Forest, Mixed Evergreen Forest, Chaparral (has an endangered serpentine ssp.)
Amsinckia lunaris	bent-flowered fiddleneck	None	None	1B.2	Mar - Jun	Roadsides (sometimes) and serpentine substrates (sometimes) in most forest types
Horkelia bolanderi	Bolander's horkelia	None	None	1B.2	Jun - Aug	Meadows, yellow pine forest, valley grassland, wetland-riparian
Lasthenia burkei	Burke's goldfields	Endangered	Endangered	1B.1	Apr-Jun	Vernal-pools and swales
Ceanothus divergens	Calistoga ceanothus	None	None	1B.2	Feb - Apr	Shady mesic areas in broadleafed upland forest and chaparral
Calochortus raichei	Cedars fairy lantern	None	None	1B.2	May-Aug	Open serpentine in woodland
Arctostaphylos bakeri ssp. sublaevis	cedars manzanita	None	Endangered	1B.2	Feb - May	Serpentine chaparral near coast
Lupinus sericatus	Cobb Mountain lupine	None	None	1B.2	Mar - Jun	Yellow Pine Forest, Foothill woodland, chaparral
Layia septentrionalis	Colusa layia	None	None	1B.2	Apr - May	Foothill woodland, valley grassland, Chaparral
Hemizonia congesta ssp. congesta	congested-headed hayfield tarplant	None	None	1B.2	Apr - Nov	Grassy sites, marsh edges

Chlorogalum pomeridianum var. minus	dwarf soaproot	None	None	1B.2	May - Aug	Serpentine outcrops in chaparral
Streptanthus brachiatus ssp. hoffmanii	Freed's jewelflower	None	None	1B.2	May - Jul	Serpentine barrens, open chaparral or woodland
Panicum acuminatum var. thermale	Geysers panicum	None	Endangered	1B.2	Jun - Sep	Peaty meadows and pockets, often at hot springs and fumaroles
Hesperolinon adenophyllum	glandular western flax	None	None	1B.2	May - Aug	Serpentine, Foothill Woodland, Chaparral, Valley Grassland
Camissonia lacustris	grassland suncup	None	None	1B.2	Apr - Jun	grassland, woodland, volcanic, broad serpentine endemic
Streptanthus hesperidis	green jewelflower	None	None	1B.2	May - Jul	Serpentine barrens, associated openings in chaparral/oak woodland, cypress woodland
Erigeron greenei	Greene's narrow-leaved daisy	None	None	1B.2	May - Sep	Generally on serpentine, sometimes rocky alluvium, chaparral, woodland, conifer forest
Harmonia hallii	Hall's harmonia	None	None	1B.2	Apr - Jun	Open sites, disturbed areas in serpentine chaparral
Streptanthus glandulosus ssp. Hoffmanii	Hoffman's bristly jewelflower	None	None	1B.3	Mar - Jul	Serpentine outcrops
Leptosiphon jepsonii	Jepson's leptosiphon	None	None	1B.2	Mar - May	Open or partially shaded grassy slopes
Astragalus rattanii var. jepsonianus	Jepson's milk-vetch	None	None	1B.2	Mar - Jun	Grasslands, grassy openings in woodland and chaparral, vertic clay, often serpentine
Sidalcea oregana ssp. valida	Kenwood Marsh checkerbloom	Endangered	Endangered	1B.1	Jun - Sep	Marsh, Occurs usually in wetlands, occasionally in non wetlands
Arctostaphylos manzanita ssp. elegans	Konocti manzanita	None	None	1B.3	Mar - May	Woodland, chaparral, conifer forest, generally volcanic soils
Sedella leiocarpa	Lake County stonecrop	Endangered	Endangered	1B.1	Apr - May	Dry vernal pools, rocky depressions
Hesperolinon didymocarpum	Lake County western flax	None	Endangered	1B.2	May - Jul	Serpentine, chaparral, grassland
Sidalcea oregana ssp. hydrophila	marsh checkerbloom	None	None	1B.2	Jul - Aug	Wet soil of streambanks, meadows
Trichostema ruygtii	Napa bluecurls	None	None	1B.2	Jun - Oct	Open areas, generally thin clay soils, possibly seasonally saturated
Brodiaea leptandra	narrow-anthered brodiaea	None	None	1B.2	May - Jul	Open mixed-evergreen forest, chaparral, gravelly soil

Carex praticola	northern meadow sedge	None	None	2B.2	May - Jul	Moist to wet meadows, riparian edges, open forest
Cordylanthus tenuis ssp. capillaris	Pennell's bird's beak	Endangered	Endangered	1B.2	Jun - Sep	Serpentine in chaparral
Castilleja rubicundula var. rubicundula	pink creamsacs	None	None	1B.2	Apr - Jun	Open grassland
Navarretia paradoxinota	Porter's navarretia	None	None	1B.3	May - Jul	Open, seasonally wet areas, meadows, serpentine soils
Arctostaphylos stanfordiana ssp. raichei	Raiche's manzanita	None	None	1B.1	Feb - Apr	Chaparral
Ceanothus confusus	Rincon Ridge ceanothus	None	None	1B.1	Feb - Jun	Volcanic slopes, chaparral, pine/oak woodland
Arctostaphylos stanfordiana ssp. decumbens	Rincon Ridge manzanita	None	None	1B.1	Feb - Apr	Chaparrral
Trifolium hydrophilum	saline clover	None	None	1B.2	Apr - Jun	Salt marshes, open areas in alkaline soils
Cryptantha dissita	serpentine cryptantha	None	None	1B.2	Apr - Jun	Rocky outcrops, gravelly slopes, serpentine endemic, chaparral, foothill woodland
Erigeron serpentinus	Serpentine daisy	None	None	1B.3	May - Aug	Serpentine scrub
Calamagrostis ophitidis	Serpentine reed grass	None	None	4.3	Apr - Jul	Meadows, seeps, grassland, chaparral, forest, generally on serpentine soils
Hesperolinon sharsmithiae	Sharsmith's western flax	None	None	1B.2	May - Jul	serpentine soils in chaparral or Sargent cypress forests
Calycadenia micrantha	small-flowered calycadenia	None	None	1B.2	Jun - Sep	Dry, open rocky ridges, hillsides, talus; openings in scrub, woodland
Eriogonum nervulosum	Snow Mountain buckwheat	None	None	1B.2	Jun - Sep	Serpentine, Chaparral
Streptanthus brachiatus ssp. brachiatus	Socrates Mine jewelflower	None	None	1B.2	May - Jul	Serpentine barrens, open chaparral or woodland
Penstemon newberryi var. sonomensis	Sonoma beardtongue	None	None	1B.3	Apr - Aug	Outcrops, talus, Chaparral

Horkelia tenuiloba	thin-lobed horkelia	None	None	1B.2	May - Jul	Sandy soils, open chaparral
Calystegia collina ssp. tridactylosa	three-fingered morning-glory	None	None	1B.2	Apr - Jun	Open grassy or rocky places or in open oak/pine woodland, often serpentine
Grimmia torenii	Toren's grimmia	None	None	1B.3	NA	openings, rocky, boulder and rock walls, carbonate, volcanic. prefer acidic sandstones and granites
Hesperolinon bicarpellatum	two-carpellate western flax	None	None	1B.2	May - Jul	Chaparral, Serpentine

Survey Results

Three seasonally specific surveys were conducted (an early, mid, and late season). The survey dates were chosen based on overlapping peak blooming periods for the target species. The survey dates were March 26th – 28th, April 1st – 11th, June 5th – 7th, and September 23rd and 24th. During these dates 1-3 surveyors traversed all proposed mechanical treatments, along with fuel breaks that intersect serpentine soil types. See attachment C maps for locations of mechanical treatment areas and serpentine soils. Burn units were only surveyed in areas where ground disturbance was expected. All of the species on the target list are fire adapted. In fact, the greatest threat to the majority of these species is from competition and invasion from non-fire adapted species. During the survey, all species encountered were identified, whether on the list or not. When an unknown species was confronted, pictures and/or illustrations were obtained to key the individual in the office.

Geysers panicum (Panicum acuminatum var. thermale),

Status: California Endangered with rare plant rank 1B.2

This species was identified on the CNDDB list 6 times as occurring within the project area, and has been extensively monitored, most recently in the *2023 Monitoring of Geysers Panicum Populations at The Geysers* report which looked at 10 known populations. These 10 populations are divided into 6 named occurrences for monitoring.

- Occurrence 1, Historic Geysers resort Site, holds population 1 and is located west of the intersection of Geysers Resort Rd and Big Geysers Rd. This is in 1B and the Roads planning units. Population 1 has 20,000 plants over an estimated 21 acres.
- Occurrence 2, Hot Springs Creek, holds populations 2 and 3, and is located just north of the intersection of Big Sulphur Creek Rd and Burned Mountain Rd. This occurrence is in Unit 5 and the roads planning unit. Population 2 has 2,000 plants over approximately 7 acres and population 3 has 25 plants over approximately 2 acres.
- Occurrence 3, Little Geysers Area, holds populations 6 and 7, and is located between Big Sulphur Creek Rd and Kincade Rd. This area is in Unit 5 and the roads planning unit. Population 6 has 1,085 plants over approximately 1.2 acres and population 7 has an estimated 100,000 plants over approximately 3.8 acres.
- Occurrence 4, USGS Bench Mark 2163, holds population 5 and is located along Big Sulphur Creek Rd. This is in the Phase 2 and roads planning units. Population 5 has approximately 4,000 plants over approximately 2.8 acres.
- Occurrence 7, Big Sulphur Creek Rd., contains population 4 and is located along Big Sulphur Creek Rd. This is in planning units 5, the roads, and phase 2. Population 4 has 526 plants over approximately 3 acres.

- Occurrence 10, Sulphur Bank Drive Area, holds populations 8, 9, and 10, and is located between Big Geysers Rd and Big Sulphur Creek. This occurrence is in Unit 1B. Population 8 has declined but does not have a population estimate for this year, mapped as 1 acre. Population 9 has 5,300 plants across approximately 2.5 acres. Population 10a has 4,500 plants and 10b has 450 plants, mapped over a combined 5.2 acres.

Protection Measures:

These populations will be protected from damaging effects, through the establishment of a 50 ft STZ. The STZ will be flagged by an RPF. The project proponent shall implement the following protection measures within the STZ:

- No heavy equipment shall be operated within this zone, except along existing roadways.
- All trees will be retained within the STZs, unless posing a hazard to public safety. If a tree is planned for removal within the STZ an RPF or botanist shall be consulted to prevent take of individuals. Other understory species of brush or vines may be removed.
- Burn piles shall not be constructed within this zone.
- An RPF or botanist shall meet with the operations crew or equipment operator prior to treatments to provide training on identification and mitigation measures for this species.
- Prior to broadcast burning, a control line will be established and maintained around this STZ with either a hand or wet line to prevent damage to this population.

> *Wildfires within and adjacent to Geysers panicum populations do not appear to have negatively affected the populations, potentially as a result of the fact that this perennial grass often has substantial living vegetation during the fire season (late summer-fall) and grows in areas that are not densely vegetated and therefore do not carry groundfires. Invasive plants are persistent at several populations (populations 2 and 7), and Bermuda grass appears to be expanding at populations 3 and 8.*

Based on the above excerpt from the 2023 monitoring report, it is not anticipated that this species will be adversely impacted by fuel treatments. The protections in the STZ above will ensure the species is not harmed during treatment. Broadcast burning near these populations is not anticipated to harm this species, and mechanical treatments will be excluded.

Cobb Mountain Lupine (*Lupinus sericatus*)

Status: Rare plant rank 1B.2

This species was identified on the CNDDB list as occurring along Socrates Mine Road about 0.25 mile from Ridgetop Fire Road, west face of Mayacamas Mountains. A population was identified on 4-5-24 at this location alongside Socrates Mine Rd underneath a steam pipe. The existing CNDDB observation is <50 plants observed in 1990 on a bend in the road. The current population appears unchanged and is mapped in a 17-acre STZ. This population is in the roads planning unit adjacent to planning unit 6. Plants were not in bloom at time of discovery and were identified based on leaf phenology.

Protection Measures:

- These populations will be protected from damaging effects, through the establishment of a 50 ft STZ. The project proponent shall implement the following protection measures within the STZ:
- No heavy equipment shall be operated within this zone, except along existing roadways.
- All trees will be retained within the STZs, unless posing a hazard to public safety. If a tree is planned for removal within the STZ an RPF or botanist shall be consulted to prevent take of individuals. Other understory species of brush or vines may be removed.
- Burn piles shall not be constructed within this zone.
- Prior to broadcast burning, a control line will be established and maintained around this STZ with either a hand or wet line to prevent damage to this population.
- An RPF or botanist shall meet with the operations crew or equipment operator prior to treatments to provide training on identification and mitigation measures for this species.

Rincon Ridge Ceanothus (*Ceanothus confusus*)

Status: Rare plant rank 1B.1

This species was identified on the CNDDB list as occurring on Cobb Mountain, the exact location is unknown and is mapped to include most of the mountain. This observation is in the phase 2 planning unit and was not surveyed. A population (not yet listed in CNDDB database) was discovered approximately 2.4 miles southwest of Cobb Mountain .2 miles east of the intersection of Burned Mountain Road and Big Sulphur Creek Road in planning unit 5. The population is locally abundant with 100+ individuals located; the average size of individuals is under 10 inches in diameter. Plants were in bloom at the time of discovery and were identified based on phenology of leaves and flowers.

Protection Measures:

- These populations will be protected from damaging effects, through the establishment of a 50 ft STZ. The project proponent shall implement the following protection measures within the STZ:
- No heavy equipment shall be operated within this zone, except along existing roadways.
- All trees will be retained within the STZs, unless posing a hazard to public safety. If a tree is planned for removal within the STZ an RPF or botanist shall be consulted to prevent take of individuals. Other understory species of brush or vines may be removed.
- Burn piles shall not be constructed within this zone.
- Prior to broadcast burning, a control line will be established and maintained around this STZ with either a hand or wet line to prevent damage to this population.
- An RPF or botanist shall meet with the operations crew or equipment operator prior to treatments to provide training on identification and mitigation measures for this species.

Vine Hill Ceanothus (Ceanothus foliosus var. vineatus)

Status: Rare plant rank 1B.1

This species was identified at the same location as the Rincon Ridge Ceanothus, approximately 2.4 miles southwest of Cobb Mountain .2 miles east of the intersection of Burned Mountain Road and Big Sulphur Creek Road in planning unit 5. The population (not yet listed in CNDDB database) is locally abundant with 300+ individuals along the hillside with an average size of 2.5 feet diameter and 1.5 feet tall. Plants were in bloom at the time of discovery and were identified based on phenology of leaves and flowers.

Protection Measures:

- These populations will be protected from damaging effects, through the establishment of a 50 ft STZ. The project proponent shall implement the following protection measures within the STZ:
- No heavy equipment shall be operated within this zone, except along existing roadways.
- All trees will be retained within the STZs, unless posing a hazard to public safety. If a tree is planned for removal within the STZ an RPF or botanist shall be consulted to prevent take of individuals. Other understory species of brush or vines may be removed.
- Burn piles shall not be constructed within this zone.
- An RPF or botanist shall meet with the operations crew or equipment operator prior to treatments to provide training on identification and mitigation measures for this species.
- Prior to broadcast burning, a control line will be established and maintained around this STZ with either a hand or wet line to prevent damage to this population.

Three Fingered Morning Glory (Calystegia collina ssp. tridactylosa)

Status: Rare plant rank 1B.2

This species was identified on the CNDDB list as occurring on the northern border of the project area near a tributary to High Valley Creek. During the survey two populations were identified. Population A; a small population (not yet listed in CNDDB database) of 10 individuals discovered along Old Socrates Mine Rd in the roads planning unit. the Average size of individuals was under 6 inches in diameter growing close to the ground, several individuals had evidence of herbivory. Population B; a small population (not yet listed in CNDDB database) of 13 individuals averaging 3 inches in diameter growing on the side of a skid trail roughly 2400 feet east of Old Socrates Mine Rd in the phase 2 planning unit. The plants were not in bloom at time of discovery but were identified based on phenology of the leaves.

Protection Measures:

These populations will be protected from damaging effects, through the establishment of a 50 ft STZ. The project proponent shall implement the following protection measures within the STZ:

- No heavy equipment shall be operated within this zone, except along existing roadways.
- All trees will be retained within the STZs, unless posing a hazard to public safety. If a tree is planned for removal within the STZ an RPF or botanist shall be consulted to prevent take of individuals. Other understory species of brush or vines may be removed.
- Burn piles shall not be constructed within this zone.
- Prior to broadcast burning, a control line will be established and maintained around this STZ with either a hand or wet line to prevent damage to this population.
- An RPF or botanist shall meet with the operations crew or equipment operator prior to treatments to provide training on identification and mitigation measures for this species.

Photographic Record

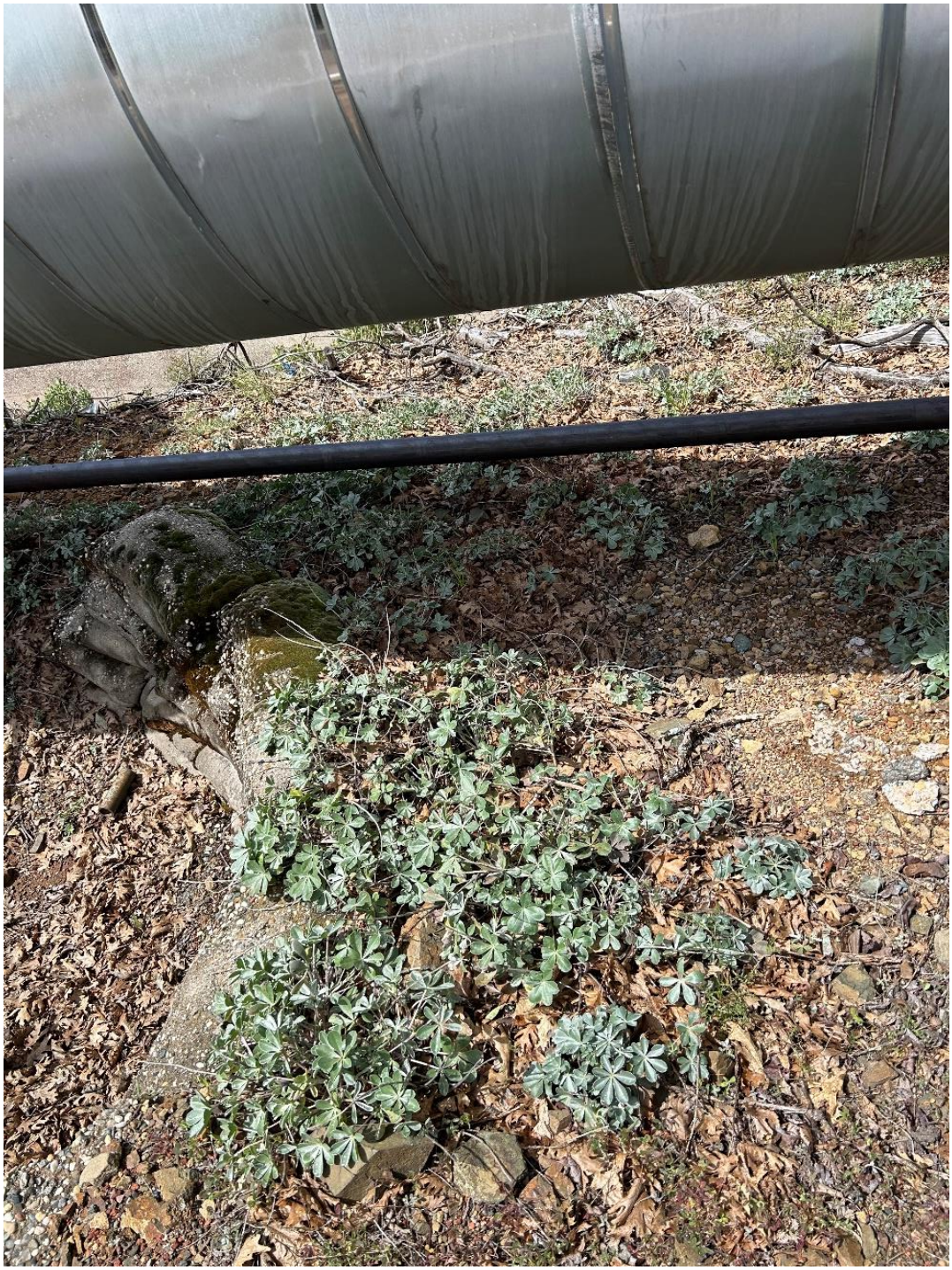

Photo 1: Cobb Mountain Lupine

Photo 2: Rincon ridge Ceanothus

Photo 3: Vine Hill Ceanothus

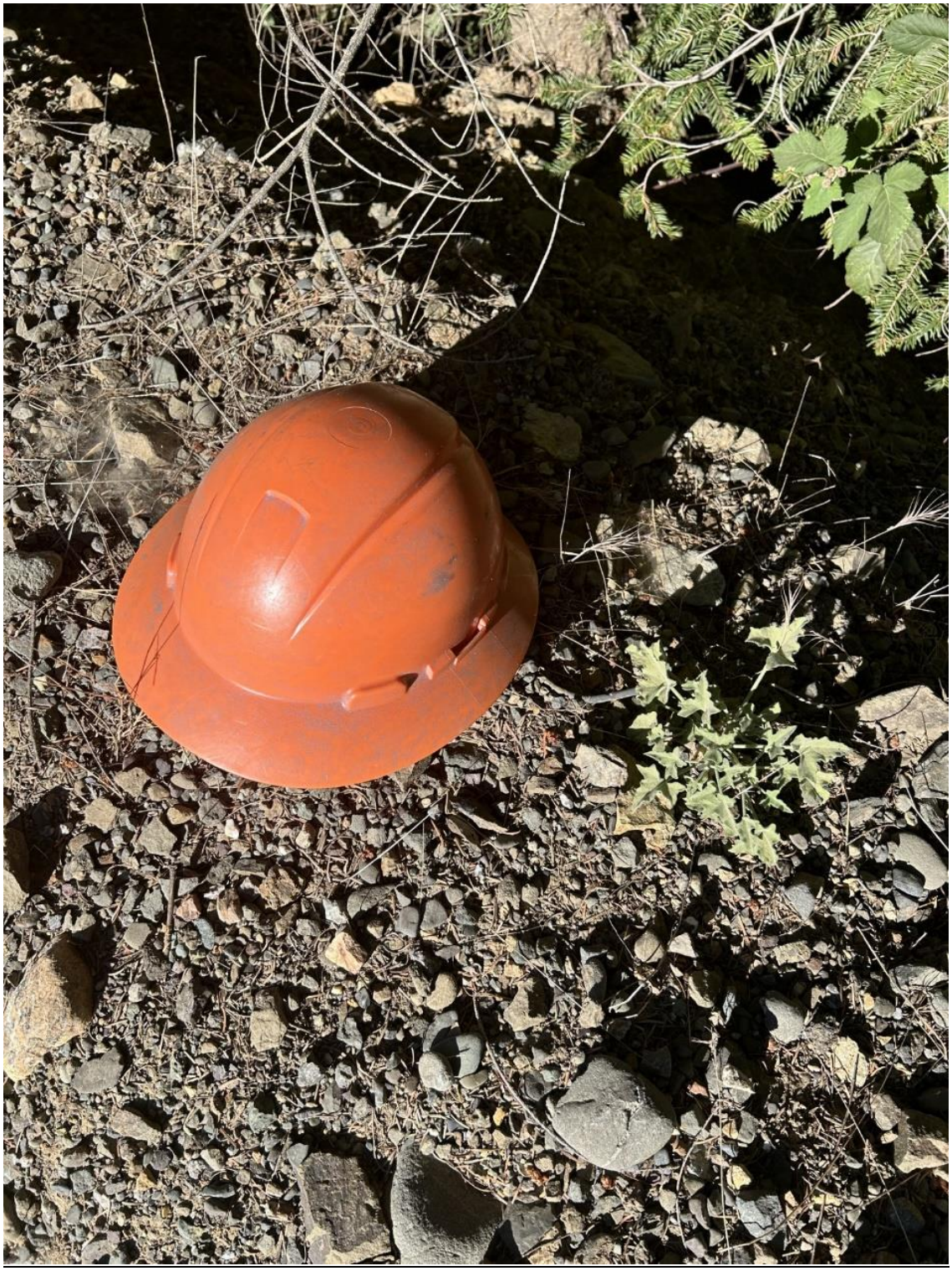

Photo 4: Three Fingered Morning Glory; Population A

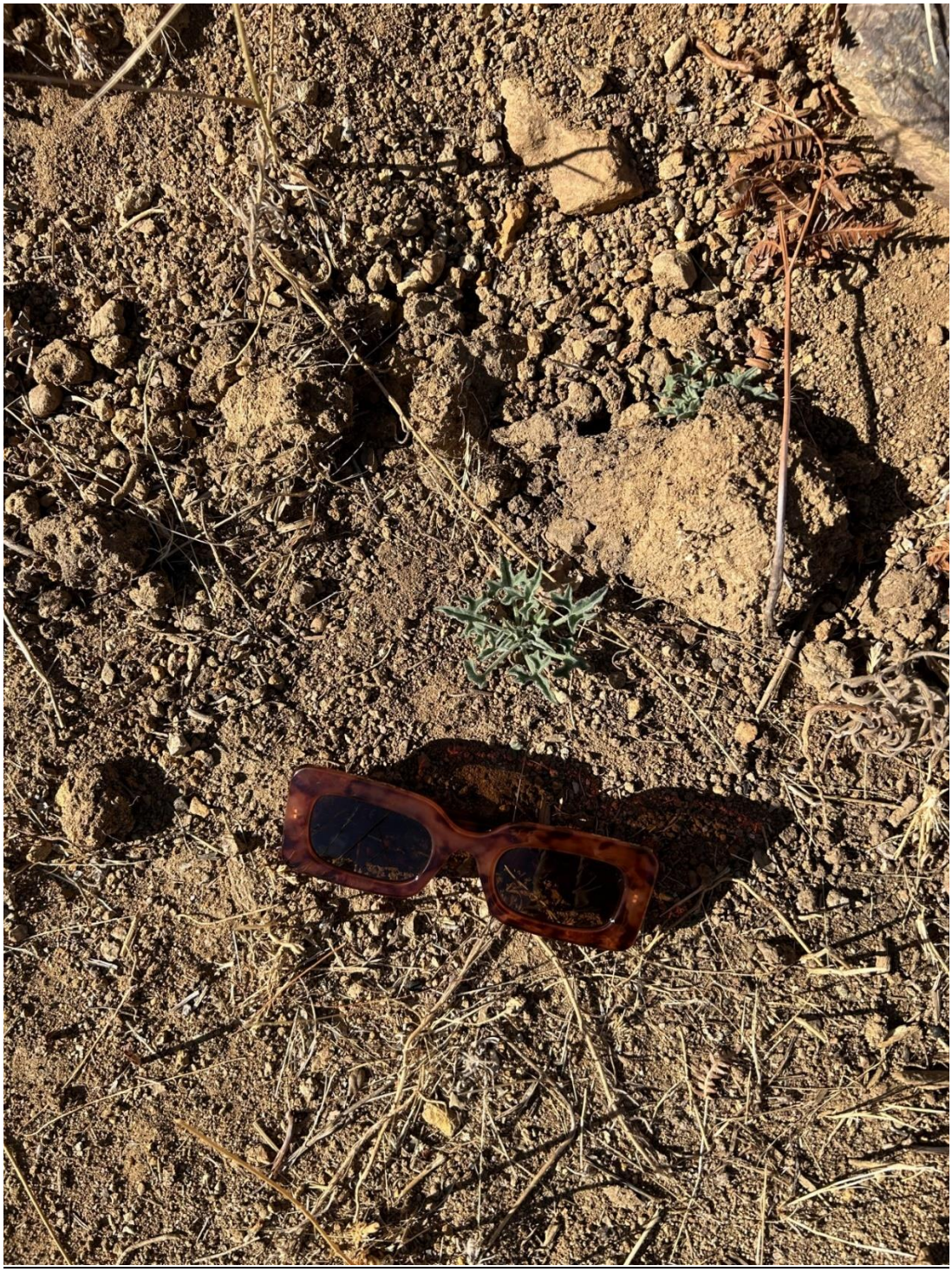

Photo 5: Three Fingered Morning Glory; Population B

Identified Species

The following species were identified during the botanical survey:

American brooklime (Veronica americana)

American trailplant (Adenocaulon bicolor)

Annual fireweed (Epilobium brachycarpum)

Annual yellow sweetclover (Melilotus indicus)

Arroyo lupine (Lupinus succulentus)

Arroyo willow (Salix lasiolepis)

Ashy silktassels (Garrya flavescens)

Baby blue eyes (Nemophila menziesii)

Barestem biscuitroot (Lomatium nudicaule)

Beaked cornsalad (Valerianella radiata)

Bearded Jewelflower (Streptanthus barbiger)

Bermuda buttercup (Oxalis pes-caprae)

bermuda grass (Cynodon dactylon)

Big manzanita (Arctostaphylos manzanita)

Bigberry manzanita (Arctostaphylos glauca)

Bigleaf maple (Acer macrophyllum)

Birchleaf mountain mahogany (Cercocarpus betuloides)

Birdfoot deervetch (Lotus corniculatus)

Bitter cherry (Prunus emarginata)

Bitter dock (Rumex obtusifolius)

Blue blossom (Ceanothus thyrsiflorus)

Blue dicks (Dichelostemma capitatum)

Blue field-madder (Sherardia arvensis)

Blue oak (Quercus douglasii)

Bolander's rush (Juncus bolanderi)

Bolander's sunflower (Helianthus bolanderi)

Broad leaved lotus (Hosackia crassifolia)

Broadleaf cattail (Typha latifolia)

Broadleaf filaree (Erodium botrys)

Broadleaf stonecrop (Sedum spathulifolium)

Brook saxifrage (Micranthes odontoloma)

Buckbrush (Ceanothus cuneatus)

Bull thistle (Cirsium vulgare)

Bunchleaf penstemon (Penstemon heterophyllus)

Bur chervil (Anthriscus caucalis)

Bush poppy (Dendromecon rigida)

California angelica (Angelica californica)

California bay laurel (Umbellularia californica)

California bedstraw (Galium californicum)

California black oak (Quercus kelloggii)

California blackberry (Rubus ursinus)

California Brickellbush (Brickellia californica)

California buckeye (Aesculus californica)

California buckwheat (Eriogonum fasciculatum)

California cliffbrake (Pellaea mucronata)

California coffeeberry (Frangula californica)

California dandelion (Agoseris grandiflora)

California Fescue (Festuca californica)

California Fuchsia (Epilobium canum)

California goldenbanner (Thermopsis californica)

California hedgenettle (Stachys bullata)

California hemp (Hoita macrostachya)

California maidenhair (Adiantum jordanii)

California man-root (Marah fabacea)

California mugwort (Artemisia douglasiana)

California nutmeg (Torreya californica)

California poppy (Eschscholzia californica)

California scrub oak (Quercus berberidifolia)

California spikenard (Aralia californica)

California wild grape (Vitis californica)

California wildrose (Rosa californica)

Canyon live oak (Quercus chrysolepis)

Canyon live-forever (Dudleya cymosa)

Cardinal catchfly (Silene laciniata)

cardinal monkeyflower (Erythranthe cardinalis)

Carolina crane's-bill (Geranium carolinianum)

Chamise (Adenostoma fasciculatum)

Chaparral blazing star (Mentzelia micrantha)

Chaparral dodder (Cuscuta californica)

Chickasaw plum (Prunus angustifolia)

Chicory (Cichorium intybus)

Childing pink (Petrorhagia prolifera)

Chinese houses (Collinsia heterophylla)

Cleavers (Galium aparine)

Clustered broomrape (Aphyllon fasciculatum)

Clustered dock (Rumex conglomeratus)

Coast indian paintbrush (Castilleja affinis)

Coast live oak (Quercus agrifolia)

Coast man-root (Marah oregana)

Cobb mountain lupine (Lupinus sericatus)

Cobwebby thistle (Cirsium occidentale)

Coffee cliffbrake (Pellaea andromedifolia)

Common broom (Cytisus scoparius)

Common centaury (Centaurium erythraea)

Common chickweed (Stellaria media)

Common cocklebur (Xanthium orientale)

Common elderberry (Sambucus canadensis)

Common fig (Ficus carica)

Common groundsel (Senecio vulgaris)

Common gumplant (Grindelia camporum)

Common lomatium (Lomatium utriculatum)

Common madia (Madia elegans)

Common marsh bedstraw (Galium palustre)

Common mullein (Verbascum thapsus)

Common pacific pea (Lathyrus vestitus)

Common snowberry (Symphoricarpos albus)

Common sowthistle (Sonchus oleraceus)

Common sunflower (Helianthus annuus)

Common vetch (Vicia sativa)

Common wintercress (Barbarea vulgaris)

Common wooly sunflower (Eriodictyon lanatum)

Cow parsnip (Heracleum maximum)

Coyote brush (Baccharis pilularis)

Coyote mint (Monardella villosa)

Creambush (Holodiscus discolor)

Creeping snowberry (Symphoricarpos mollis)

Crevice alumroot (Heuchera micrantha)

Crimson clover (Trifolium incarnatum)

Crimson columbine (Aquilegia formosa)

Curly dock (Rumex crispus)

Cutleaf geranium (Geranium dissectum)

Dallis grass (Paspalum dilatatum)

Death camas (Toxicoscordion venenosum)

Deerbrush ceanothus (Ceanothus integerrimus)

Desert Rockpurslane (Calandrinia ciliata)

Desert starvine (Echinopepon bigelovii)

Douglas fir (Pseudotsuga menziesii)

Dove weed (Croton setigerus)

Dove's foot crane's-bill (Geranium molle)

Drops of gold (Prosartes hookeri)

Dwarf fireweed (Epilobium latifolium)

Dyer's weed (Reseda luteola)

Eastwood's manzanita (Arctostaphylos glandulosa)

Elderberry (Sambucus nigra)

Elegant clarkia (Clarkia unguiculata)

Everlasting pea (Lathyrus latifolius)

Farewell to spring (Clarkia amoena)

Fendler's Meadow-rue (Thalictrum fendleri)

Fennel (Foeniculum vulgare)

Fernalds iris (Iris Fernaldii)

Fernleaf biscuitroot (Lomatium dissectum)

Field Bindweed (Convolvulus arvensis)

Field hedge parsley (Torilis arvensis)

Fragrant sumac (Rhus aromatica)

French broom (Genista monspessulana)

Fringed willowherb (Epilobium ciliatum)

German chamomile (Matricaria chamomilla)

Geysers panicum (Panicum acuminatum var. thermale)

Giant chain fern (Woodwardia fimbriata)

Giant horsetail (Equisetum telmateia)

Golden dog's tail (Lamarckia aurea)

Golden fairy lantern (Calochortus amabilis)

Gray pine (Pinus sabiniana)

Gray's biscuitroot (Lomatium grayi)

Great hound's tongue (Adelinia grande)

Greater periwinkle (Vinca major)

Greenleaf manzanita (Arctostaphylos patula)

Gumweed (Madia gracilis)

Hairy bittercress (Cardamine hirsuta)

Hairy false goldenaster (Heterotheca villosa)

Hairy gumweed (Grindelia hirsutula)

Hairy vetch (Vicia villosa)

Harvest brodiaea (Brodiaea elegans)

Hayfield tarweed (Hemizonia congesta)

Hayfield tarweed (Hemizonia congesta ssp. luzulifolia)

Heartleaf arnica (Arnica cordifolia)

Heartleaf keckiella (Keckiella cordifolia)

Heart-leaf milkweed (Asclepias cordifolia)

Hedge bedstraw (Galium mollugo)

Henbit (Lamium amplexicaule)

Herb robert (Geranium robertianum)

Hillside gooseberry (Ribes californicum)

Horseweed (Erigeron canadensis)

Imbricate phacelia (Phacelia imbricata)

Incense cedar (Calocedrus decurrens)

Interior live oak (Quercus wislizeni)

Italian thistle (Carduus pycnocephalus)

Ithuriel's spear (Triteleia laxa)

Jepson ceanothus (Ceanothus jepsonii)

Jimsonweed (Datura wrightii)

Knobcone pine (Pinus attenuata)

Ladies tobacco (Pseudognaphalium californicum)

Leafy fleabane (Erigeron foliosus)

Leather oak (Quercus durata)

Little bur clover (Medicago minima)

Lobeleaf groundsel (Packera multilobata)

London rocket (Sisymbrium irio)

Low larkspur (Delphinium nuttallianum)

Macnab cypress (Hesperocyparis macnabiana)

Marsh parsley (Cyclospermum leptophyllum)

Mayweed (Anthemis cotula)

Menzies fiddleneck (Amsinckia menziesii)

Miner's lettuce (Claytonia perfoliata)

Miniature lupine (Lupinus bicolor)

Modesty (Wipplea modesta)

Montana chaparral pea (Pickeringia montana)

Morning glory (Calystegia purpurata)

Moth mullein (Verbascum blattaria)

Mountain sweet cicely (Osmorhiza berteroi)

Muehlenberg's centaury (Zeltnera muehlenbergii)

Naked buckwheat (Eriogonum nudum)

Narrowleaf cattail (Typha angustifolia)

Narrowleaf milkweed (Asclepias fascicularis)

Narrowleaf onion (Allium amplectens)

Narrowleaf willow (Salix exigua)

Nettleleaf giant hyssop (Agastache urticifolia)

Northern california black walnut (Juglans hindsii)

Oleander (Nerium oleander)

Ookow (Dichelostemma congestum)

Oregon grape (Berberis aquifolium)

Oregon oak (Quercus garryana)

Pacific blacksnakeroot (Sanicula crassicaulis)

Pacific dogwood (Cornus nuttallii)

Pacific false bindweed (Calystegia purpurata)

Pacific madrone (Arbutus menziesii)

Pacific ninebark (Physocarpus capitatus)

Pearly everlasting (Anaphalis margaritacea)

Pennyroyal (Mentha pulegium)

Pin oak (Quercus palustris)

Pineapple weed (Matricaria discoidea)

Pinemat manzanita (Arctostaphylos nevadensis)

Pink honeysuckle (Lonicera hispidula)

Pipestem Clematis (Clematis lasiantha)

Plantian pussytoes (Antennaria plantaginifolia)

Pointleaf manzanita (Arctostaphylos pungens)

Ponderosa pine (Pinus Ponderosa)

Pretty shooting star (Dodecatheon pulchellum)

Prickly lettuce (Lactuca serriola)

Purple nightshade (Solanum xanti)

Pygmy stonecrop (Crassula connata)

Red beardtounge (Keckiella corymbosa)

Red larkspur (Delphinium nudicaule)

Red ribbons (Clarkia concinna)

Red willow (Salix laevigata)

Redstem stork's bill (Erodium cicutarium)

Rincon ridge ceanothus (Ceanothus confusus)

Rose clover (Trifolium hirtum)

Rosemary (Salvia rosmarinus)

Rosilla (Helenium puberulum)

Rough hawkbit (Leontodon saxatilis)

Rough hedgenettle (Stachys rigida)

Rubber rabbitbrush (Ericameria nauseosa)

Rusty popcornflower (Plagiobothrys nothofulvus)

Sacred thorn apple (Datura wrightii)

Salad burnet (Poterium sanguisorba subsp. Sanguisorba)

Salmonberry (Rubus spectabilis)

Sand fringepod (Thysanocarpus curvipes)

Sargent cypress (Hesperocyparis sargentii)

Scarlet pimpernel (Lysimachia arvensis subsp. Arvensis)

Seep monkeyflower (Erythranthe guttata)

Sheep sorrel (Rumex acetosella)

Showy milkweed (Asclepias speciosa)

Siberian spring beauty (Claytonia sibirica)

Sierra gooseberry (Ribes roezlii)

Silk tassel bush (Garrya eliptica)

Silver lupine (Lupinus albifrons)

Silverback fern (Pentagramma triangularis)

Silverleaf Scorpionweed (Phacelia hastata)

Slender centaury (Centaurium tenuiflorum)

Slender phlox (Phlox gracilis)

Small baby blue eyes (Nemophila heterophylla)

Smooth cat's ear (Hypochaeris glabra)

Smooth horsetail (Equisetum laevigatum)

Snowbrush ceanothus (Ceanothus velutinus)

Spanish clover (Acmispon americanus)

Spiny sowthistle (Sonchus asper)

Spring draba (Draba verna)

St. John's Wort (Hypericum perforatum)

Sticky chickweed (Cerastium glomeratum)

Sticky cinquefoil (Drymocallis glandulosa)

Sticky monkeyflower (Diplacus aurantiacus)

Stinging nettle (Urtica dioica)

Tall flatsedge (Cyperus eragrostis)

Tansy ragwort (Senecio jacobaea)

Three fingered morning glory (Calystegia collina subsp. tridactylosa)

Threenerve goldenrod (Solidago velutina)

Toothed plagiomnium moss (Plagiomnium cuspidatum)

Tower rock cress (Turritis glabra)

Toyon (Heteromeles arbutifolia)

Valley oak (Quercus lobata)

Variableleaf collomia (Collomia heterophylla)

Vine hill ceanothus (Ceanothus foliosus var. vineatus)

Vinegarweed (Trichostema lanceolatum)

Virginia pepperweed (Lepidium virginicum)

Warrior's plume (Pedicularis densiflora)

Water parsley (Oenanthe sarmentosa)

Watercress (Nasturtium officinale)

Wavy leaf paintbrush (Castilleja applegatei)

Wavy-leaf soap plant (Chlorogalum pomeridianum)

Western buttercup (Ranunculus occidentalis)

Western raspberry (Rubus leucodermis)

Western redbud (Cercis occidentalis)

Western sweetroot (Osmorhiza occidentalis)

Western sweetshrub (Calycanthus occidentalis)

Western swordfern (Polystichum munitum)

Western vervain (Verbena lasiostachys)

Whispering bells (Emmenanthe penduliflora)

White alder (Alnus rhombifolia)

White hawkweed (Pilosella albiflora)

White horehound (Marrubium vulgare)

Whiteleaf manzanita (Arctostaphylos viscida)

Whitethorn ceanothus (Ceanothus cordulatus)

Wholeleaf saxifrage (Micranthes integrifolia)

Wild mustard (Hirschfeldia incana)

Winecup clarkia (Clarkia purpurea)

Woodbalm (Lepechinia calycina)

Woodland madia (Anisocarpus madoiodes)

Woolly distaff thistle (Carthamus lanatus)

Wooly indian paintbrush (Castilleja foliolosa)

Wooly mule's ears (Wyethia mollis)

Wright's cudweed (Pseudognaphalium microcephalum)

Yarrow (Achillea millefolium)

Yellow mariposa (Calochortus superbus)

Yellow salsify (Tragopogon dubius)

Yellow star thistle (Centaurea solstitialis)

Yellow sweet clover (Melilotus officinalis)

Yerba buena (Micromeria douglasii)

Yerba santa (Eriodictyon californicum)

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