

Attachment B

Sonoma County Fire District – Windsor Area Regional Parks CalVTP # 2022 - 28



Biological Resource Assessment

As per SPR BIO-1, a reconnaissance level survey was conducted by the RPF, to determine what habitats where 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, tree squirrel, ground squirrel, coyote, mountain lion, red tail hawk, crow, raven, pileated woodpecker, blue jay, starling, oriole, robin, hummingbird.

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.

<u>Birds</u>

• <u>A note on birds of prey and the treatments proposed on this project:</u> 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. 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.

American Peregrine Falcon (Falco peregrinus anatum)

Status: Federally and State Delisted

Habitat Requirements: American peregrine falcons are year-long residents in Sonoma County. Peregrine falcons require protected cliffs and ledges for cover. Peregrines often breed near wetlands, lakes, rivers, or other water on high cliffs, banks, dunes or mounds (Zeiner et al. 1990a); however, they will nest on human-made structures and will occasionally use snag cavities or old nests of other raptors. Nests are a scrape on a depression or ledge in an open site. Peregrines feed almost exclusively on other birds, usually songbirds, pigeons, shorebirds and waterfowl, which they kill in midair. The Peregrine falcon has re-occupied most of its historical breeding range in California, including the Coast and Cascade Ranges. They inhabit all counties in the state at various times of the year.

<u>Potential for Occurrence:</u> There is a moderate to low potential for occurrence in the project area. High quality habitat is generally lacking throughout the project area. Areas which would make ideal peregrine nests were examined (i.e. sheer ridges and rocky overlooks) and no nests or individual occurrences were observed.



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

Cooper's hawk (Accipiter cooperii)

<u>Status:</u> None

<u>Habitat Requirements:</u> Cooper's hawks are yearlong residents of Sonoma County. They frequent landscapes where wooded areas occur in patches and groves (Beebe 1974) and near open water or riparian vegetation. They often use patchy woodlands and edges with snags for perching. Dense stands with moderate crown-depths are used for nesting.

<u>Potential for Occurrence:</u> There is a moderate potential for occurrence in the project area. Areas which would make ideal peregrine nests were examined (i.e. large snags with broken or flat tops) and no nests or individual occurrences were observed.

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

Tricolored Blackbird (Agelaius tricolor)

Status: California Threatened

<u>Habitat Requirements:</u> 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 the ground or water and up to several meters high in trees. They exhibit highly social nesting, some colonies may have over 100,000 nests.

"Historically Tricolored Blackbirds nested in wetlands with cattails, bulrushes, and willows, but as wetlands were converted to agricultural fields, towns, and business parks they started nesting in agricultural fields." 1.) Cornell lab of Ornithology

Where wetlands are available Tricolored Blackbirds continue to use them for nesting and foraging. Tricolored Blackbirds may also been found nesting in patches of Himalayan blackberry near stock ponds or irrigated pastures in the foothills of the Sierra Nevada, California. <u>Potential for Occurrence:</u> There is a moderate potential for habitat within the project area, mainly around the various wet areas, and ponds. No individuals or nests were observed during reconnaissance.

<u>Potential Project Impact:</u> 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 will mitigate impacts to this species.

Sharp-shinned hawk (Accipiter striatus)

Status: None

<u>Habitat Requirements:</u> Sharp-shinned hawks are found in ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine habitats. Sharp-shinned hawks roost in intermediate to high-canopy forests, and nest in dense, pole/small-tree stands of conifers, which are cool, moist, well shaded and usually within 275 feet of water. They forage in openings at the edges of woodlands. North-facing slopes with plucking perches are critical requirements for this species.



<u>Potential for Occurrence</u>: There is a moderate potential for occurrence in the project area. Areas which would make ideal peregrine nests were examined (i.e., large snags with broken or flat tops) and no nests or individual occurrences were observed.

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

Osprey (Pandion haliaetus)

Status: Watch list

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.

<u>Potential for Occurrence</u>: There is a low to moderate potential for habitat within the project area, mainly around the various wet areas, and ponds. No individuals or nests were observed during reconnaissance.

<u>Potential Project Impact:</u> The potential for the proposed activities to impact this species is highly unlikely (see note on birds of prey above). If habitat exists within the treatment units, watercourse and wetland protection measures along with BIO SPRs will prevent damage to this species.

Burrowing owl (Athene cunicularia)

Status: None

<u>Habitat Requirements:</u> Burrowing owls are yearlong residents of Sonoma County. 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.

<u>Potential for Occurrence</u>: There is a moderate potential for occurrence in the project area. No nests or individual occurrences were observed during reconnaissance.

<u>Potential Project Impact</u>: Due to the level of treatments proposed, there is a potential for impact to this species (if it occurs within the project area), mainly during prescribed burning treatments and grazing within grasslands. With the implementation of the SPRs listed in the PSA and the improvement of foraging habitat through ecological restoration treatments, it is anticipated there would be a less than significant impact to this species or its habitat. Also, this species is not federally, or state listed as threatened, rare, or endangered.

Great Blue Heron (Ardea herodias)

<u>Status:</u> None

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.

<u>Potential for Occurrence</u>: This species was identified within the project area near a pond at the foothill regional park.

<u>Potential Project Impact</u>: 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 anticipated there would be a less than significant impact to this species or its habitat. Watercourse protection measures will ensure protection of crucial habitat. Also, this species is not federally, or state listed as threatened, rare, or endangered.

White-Tailed Kite (Elanus leucurus)

<u>Status:</u> None

<u>Habitat Requirements:</u> 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.

<u>Potential for Occurrence</u>: There is a 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.

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

<u>Mammals</u>

Pallid Bat (Antrozous pallidus)

Status: None

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



before dawn. Specializes in foraging on insects on the ground, versus in the air, by listening for the insect footsteps. The pallid bat is found throughout most of the western U. S. and Mexico. In California, the bat is widespread in low elevations with the exception of the high Sierra Nevadas from Shasta to Kern counties and in the northwestern corner of the state from Del Norte and western Siskiyou counties to northern Mendocino County (Zeiner et al. 1990b). Potential for Occurrence: There is a low potential for occurrence within the treatment area. No individuals were located during field reconnaissance. Suitable habitat was not located. 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 habitat within the project area.

Townsend's Big-Eared Bat (Corynorhinus townsendii)

Status: None

<u>Habitat Requirements:</u> *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.

<u>Potential for Occurrence:</u> 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 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.

Hoary Bat (Lasiurus cinereus)

Status: None

<u>Habitat Requirements</u>: 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.



<u>Potential for Occurrence</u>: There is moderate potential for this species to occur within the treatment units. No individuals nor suitable nest sites were observed during field reconnaissance.

Fringed myotis (Myotis thysanodes)

<u>Status:</u> None

<u>Habitat Requirements:</u> 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.

<u>Potential for Occurrence:</u> There is a low potential for this species to occur within the treatment units. No individuals nor suitable nest sites were observed during field reconnaissance. The plan area is quite hot during the late summer months and there are no natural caves or mines within the assessment area.

Yuma myotis (Myotis yumanensis)

Status: None

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

<u>Potential for Occurrence</u>: No roosts, or evidence of their presence, were observed within the project area during the site assessment. The habitat requirements for this species are generally lacking within the project area.

<u>Sonoma Tree Vole (Arborimus pomo)</u>

<u>Status:</u> None

<u>Habitat Requirements</u>: This species occurs along the North Coast of California. Red 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 feeds 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 Red Tree Vole nests is usually complimented by an inspection of the forest floor, upon which, matted clusters of resin ducts can usually be observed.

<u>Potential for Occurrence</u>: The project area does contain potential habitat for the Sonoma Tree Vole. A visual search of the canopy for stick nests and the forest floor for discarded resin ducts, which accumulate below vole nests was conducted. Resin ducts or nests were not observed above in the trees; however, they could be hidden up in the canopy.

<u>Potential Project Impact:</u> 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)

<u>Status:</u> None

<u>Habitat Requirements:</u> 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. <u>Potential for Occurrence:</u> There is a moderate potential for this species to occur within the treatment units. No individuals or their dens were observed during field reconnaissance. **Fisher** (*Pekania pennanti*) [West Coast Distinct Population Segment (DPS)]

Status: None

<u>Habitat Requirements:</u> *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).

<u>Potential for Occurrence:</u> There is no potential for this species to occur within the treatment units. The project areas lack the habitat required by this species.

American Badger (Taxidea taxus)

Status: None

<u>Habitat Requirements:</u> A small carnivore, with a distinctive white badge-like mark on its forehead. This species is most abundant in drier open stages of most shrub, forest and herbaceous habitats, with friable soils (Zeiner et al. 1990b). They dig burrows in the friable soils and frequently reuse old burrows. They prey on burrowing rodents, especially ground squirrels and pocket gophers, also on birds, insects, reptiles and carrion. Their diet shifts seasonally depending on the availability of prey. American badgers are non-migratory and are found throughout most of California, except the northern North Coast area (Grinnell et al. 1937). Potential for Occurrence: There is a low to moderate potential for this species to occur within the treatment units. No individuals or burrows were observed during field reconnaissance.

Amphibians and Reptiles

Western Pond Turtle (Emys marmorata)

<u>Status</u>: None

<u>Habitat Requirements:</u> 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).

<u>Potential for Occurrence</u>: There is a high potential for occurrence within the ponds located within the project area. Multiple individuals were observed within foothill regional park during reconnaissance.



<u>Potential Project Impact</u>: 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 anticipated there would be a less than significant impact to this species or its habitat. Watercourse protection measures will ensure retention of crucial habitat. Also, this species is not federally, or state listed as threatened, rare, or endangered.

California Giant Salamander (Dicamptodon ensatus)

Status: None

<u>Habitation Requirements:</u> 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.

<u>Potential for Occurrence</u>: There is a very low potential for occurrence within the project area because it lacks the essential habitat. There are no cold perennial streams within the project area. The closest creek with potential for occurrence would be Mark West creek, a class I watercourse. This area is not included in the treatment units.

California Red-Legged Frog (Rana draytonii)

Status: Federally Threatened

<u>Habitation Requirements:</u> 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. CRLF were historically believed to prefer only habitats and shorelines with extensive vegetation.

<u>Potential for Occurrence:</u> There is a moderate potential for individuals to occur within the treatment areas near ponds. No individuals were encountered during field reconnaissance. <u>Potential Project Impact:</u> 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. Consultation with CDFW was requested on December 20th, 2022 via email. The results are listed below.

California tiger salamander – Sonoma County DPS (*Ambystoma californiense pop. 3*) Status: Federally endangered; California threatened

<u>Habitation Requirements:</u> The California tiger salamander is associated with annual grasslands with seasonal rainwater ponds or vernal pools for breeding. They also use California ground squirrel burrows when migrating upland.



<u>Potential for Occurrence:</u> There is a moderate potential for this species to occur within the treatment areas around water sources. There is also a vernal pool located near the southern end of the Shiloh Regional Park. This vernal pool was surveyed by the RPF in December - 5 days after 3 inches of rain accumulation. There was no standing water within the vernal pool, making its status marginal. There was a general lack of high-quality habitat (logs, rocks, and burrows). No individuals were identified.

<u>Potential Project Impact</u>: 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. Consultation with CDFW was requested on December 20th, 2022 via email. The results are listed below.

Red-Bellied Newt (Taricha rivularis)

Status: None

<u>Habitation Requirements</u>: 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).

<u>Potential for Occurrence</u>: There is a low potential for individuals to occur within the treatment areas near ponds since there are no perennial watercourses within the treatment areas. No individuals were encountered during field reconnaissance.

Foothill Yellow-Legged Frog (Rana boylii)

Status: California endangered throughout inland range

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.



<u>Fish</u>

Hardhead (Mylopharodon conocepalus)

Status: None

<u>Habitation Requirements:</u> 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.

<u>Potential for Occurrence:</u> There is a low potential for this species to occur within the project area. The highest probability for occurrence would be within the ponds.

<u>Potential Project Impact:</u> Due to the scope of treatments proposed and the lack of habitat, 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 anticipated there would be a less than significant impact to this species or its habitat. Watercourse protection measures will ensure retention of crucial habitat.

Russian River tule perch (Hysterocarpus traskii pomo)

Status: None

<u>Habitation Requirements</u>: The Russian River tule perch inhabits streams and rivers, generally, in areas with beds of vegetation or overhangs. This species is one of three subspecies of tule perch and is endemic to the Russian River and the lower parts of its tributaries.

<u>Potential for occurrence</u>: There is no potential for this species to occur within the treatment areas, as there are no class I watercourses within the project.

Coho salmon (Oncorhynchus kisutch) Central California Coast ESU

Status: State and Federally Endangered.

Habitat: Class I watercourses.

<u>Life history</u>: Adults return to their natal Watercourses to spawn in the winter. Juveniles spend one year rearing in the freshwater environment before migrating towards the ocean. At age 3 most coho salmon return to their natal Watercourses again to spawn.

<u>Potential for occurrence</u>: There is no potential for this species to occur within the treatment areas, as there are no class I watercourses within the project.

Steelhead (Oncorhynchus mykiss) Central California Coast DPS

Status: Federally Threatened/Species of Special Concern.

Habitat: Class I watercourses.

<u>Life history</u>: 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.

<u>Potential for occurrence</u>: There is no potential for this species to occur within the treatment areas, as there are no class I watercourses within the project.

California freshwater shrimp (Syncaris pacifica)

Status: State endangered and federally endangered

<u>Habitation Requirements:</u> California freshwater shrimp occur only in a limited range within the northern San Francisco Bay area. They prefer streams that have water flowing year-round with predominately low gradient flows.



<u>Potential for occurrence</u>: None. The project area lacks perennial streams which would provide habitat for this species.

California linderella (Linderiella occidentalis)

Status: None

<u>Habitation Requirements</u>: California linderiella are the most common fairy shrimp in the Central Valley. They are often found in the same vernal pools as the Vernal pool fairy shrimp. <u>Potential for occurrence</u>: There is a low potential for this species to occur within the ponds within the treatment areas. There is no potential for impact due to the SPRs described in attachment A.

Insects

Obscure bumblebee (Bombus califinosus)

Status: None

<u>Habitat Requirements</u>: 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.

<u>Potential for Occurrence</u>: There is moderate potential for occurrence within meadows and open areas. No sightings occurred during field reconnaissance.

<u>Potential Impacts:</u> There is a potential for this species to be impacted by this project during brush removal. The long term effect of the project will likely be the creation of high quality habitat, and the prevention of tree encroachment into grasslands and meadows. Mitigation measure Bio-2g, incorporated to protect Western bumblebee, will prevent impact to this species.

Western bumblebee (Bombus occidentalis)

Status: Candidate under CESA

<u>Habitation Requirements:</u> 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.

<u>Potential for Occurrence</u>: There is low to moderate potential for occurrence throughout areas with habitat. During field reconnaissance, approximately 80 acres of oak savannah, grasslands, and chaparral habitat were observed.

<u>Potential Impacts:</u> There is a potential for this species to be impacted by this project during brush and tree removal or during prescribed burning. Mitigation measure BIO-2g will be implemented for this species' potential habitat (see Special Status Bumblebee Habitat Maps in attachment C). This will restrict prescribed burning within these ~ 80 acres to between October and February. The long-term effect of the project will likely be the creation of high-quality



habitat, and the prevention of tree encroachment into grasslands and meadows. Consultation with CDFW was requested on December 20th, 2022 via email. Their response is listed below.

Blennosperma vernal pool andrenid bee (Andrena blennospermatis)

Status: None

<u>Habitation Requirements:</u> Blennosperma vernal pool andrenid bees are associated with the early spring bloom of Common stickyseed (*Blennosperma nanum*) and Baker's stickyseed (*Blennosperma bakeri*). The blooming period for Common stickyseed is from February through April, whereas the blooming period for Baker's stickyseed is from March through May. *A. blennospermatis* is a solitary, ground-nesting bee. Adults emerge early in the spring, with males emerging slightly earlier and dying off sooner than females. After emergence, the females of this species mate, and then begin excavating nests in the upland areas around vernal pools. The flight period for females ranges from late February to late April (Thorp and Leong, 1995). *A. blennospermatis* spatially restricts its foraging activities to near-neighbor flowers. Thus, bees may have difficulty colonizing areas around artificially-constructed vernal pools, because of their limited flight ability and low dispersal tendencies (Leong 1994, Thorp and Leong 1995, Leong, Randolph, and Thorp 1995).

<u>Potential for Occurrence:</u> There is moderate potential for occurrence near the vernal pool within Shiloh Regional Park.

<u>Potential Project Impact</u>: 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 anticipated there would be a less than significant impact to this species or its habitat. Watercourse protection measures will ensure retention of crucial habitat surrounding the vernal pools.

Serpentine cypress wood-boring beetle (Trachykele hartmani)

<u>Status:</u> None

<u>Habitation Requirements</u>: 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).

<u>Habitation Potential:</u> There is no potential for this species to occur. The project area lacks the required habitat.

Communities

Northern Hardpan Vernal Pool

This system includes shallow ephemeral waterbodies found in depressions among grasslands and open woodlands. They are found from British Columbia through California. There is a cemented layer of clay or bedrock that forms the hardpan, enabling the pools to retain water through most of the spring. By late summer, these pools are usually dry. They are usually up to several acres in size and contain endemic and federally listed species.

<u>Potential for occurrence</u>: The closest occurrence of this type of vernal pool is within 1.5 miles of the project area along highway 101. This community does not exist within the project area. There is a low quality, small vernal pool which fails to hold water for more than a few days after a



significant rain event, as it lacks clay or bedrock hardpan. Nevertheless, this area will be protected with class II watercourse protection. See SPR HYD-4.

CDFW Consultation Results (email response received January 16th, 2023):

The California Department of Fish and Wildlife (CDFW) has received your request for consultation regarding the proposed **Sonoma County Fire District - Windsor Area Regional Parks CalVTP (ID # 2022-28)** project. The project proposes vegetation treatments within the Shiloh Ranch Regional Park and Foothill Regional Park in Sonoma County. The purpose of the consultation is to review and recommend proposed mitigation measures for the California tiger Salamander (*Ambystoma californiense*; state threatened, federally endangered), California red-legged frog (*Rana draytonii*; federally threatened), and special status bumble bees, which all have the potential to occur within the project areas during vegetation treatment activities. The following are CDFW comments and/or recommendations to provide to the proposed CalVTP project.

<u>Amphibians</u>

The CalVTP project areas are within the range for both California tiger salamanders (CTS) and California red-legged frogs (CRLF) and contain ponds and watercourses which have the potential for suitable amphibian habitat. CTS inhabit underground mammal burrows most of the year. Adults migrate nocturnally above ground to/from breeding ponds following fall/winter rainfall events. In late spring/early summer, juveniles disperse from breeding ponds at night to upland underground burrows. CRLF inhabit pools of streams and occasionally ponds. Adults are known to move nocturnally within the terrestrial landscape between aquatic habitats for breeding following fall/winter rainfall events. While it is unlikely that proposed vegetation treatments will have an impact to CTS inhabiting mammal burrows, vegetation treatments may have impacts to both species during their movements on the terrestrial landscape.

CDFW concurs with and recommends implementing CalVTP mitigation measures *SPR GEO-1 Suspend Disturbance during Heavy Precipitation* and *SPR HYD-4 Identify and Protect Watercourse and Lake Protection Zones*, which will avoid significant impacts to existing aquatic habitat and will avoid project activities during significant rainfall events that may impede amphibian overland movement. In addition, CDFW recommends that project activities occur during daylight hours to avoid any nocturnal movement of amphibians.

Special Status Bumble Bees

On September 30th, 2022, candidacy was reinstated for the four bumble bee species petitioned for listing—franklin's, crotch, western, and suckley cuckoo—under the California Endangered Species Act (CESA). Candidate species are given protection under CESA until a determination is made on their listing status. More information on the bumble bee listing can be found on the Fish and Game Commission website at https://fgc.ca.gov/CESA#bb.

The candidate bumble bee species within the range of the proposed CalVTP project and with the potential to occur during vegetation treatment activities are the Crotch bumble bee (*Bombus crotchii*) and, to a lesser degree, the Western bumble bee (*Bombus occidentalis occidentalis*).



All bumble bees have three basic habitat requirements: suitable nesting sites for the colonies, availability of nectar and pollen from floral resources throughout the duration of the colony period (spring, summer, and fall), and suitable overwintering sites. Nests are often located underground in abandoned rodent burrows or similar cavities, aboveground in tufts of grass or empty cavities, or occasionally abandoned bird nests. Information regarding overwintering habitat is roughly unknown, though it is speculated that they may nest underground in small cavities. Since bumble bee colonies or overwintering sites are located near surface or subsurface, vegetation treatment activities have the potential to impact bumble bee populations present within the project areas.

Suitable Habitat and Floral Resources

Bumble bees depend on the availability of habitats with a rich supply of floral resources that bloom continuously during the entirety of the colony's life. Suitable habitat for the crotch bumble bee can be defined as open grasslands, shrublands, and chaparral. While the western bumble bee can be found in meadows and grasslands with abundant floral resources and some natural areas within urban environments. Although bumble bees are generalist foragers and do not depend on any one flower type, there are plant families known to be associated with bumble bee observations.

Plant families most associated with the crotch bumble bee include pea (*Fabaceae*), milkweed (*Asclepiadaceae*), forget-me-not (*Boraginaceae*), sunflower or daisy (*Asteraceae*), mint (*Lamiaceae*), dogbane (*Apocynaceae*), and waterleaf (*Hydrophyllaceae*).

Plant genera most associated with the western bumble bee include plume thistles (*Cirsium*), wild buckwheat (*Erigonum*), goldenrods (*Solidago*), *Aster, Ceanothus, Centaurea*, and beardtongues (*Penstemon*). Plant families include pea (*Fabaceae*), sunflower (*Asteraceae*), buckthorn (*Rhamnaceae*), and rose (*Rosaceae*).

Note that these floral associations do not necessarily represent preference for these plants over other flowering plants, but rather may represent the prevalence of these flowers in the landscape where this species occurs.

CDFW recommends that during the implementation of CalVTP mitigation measure *SPR BIO-1: Review and Survey Project-Specific Biological Resources*, a qualified RPF or biologist conduct reconnaissance surveys for suitable candidate bumble bee habitat (grassland, meadows, shrub) that contain the above-described associated floral resources. Surveys for floral resources should be floristic in nature and timed to coincide with the blooming period of the target flowering species. If suitable candidate bumble bee habitat is present, CDFW recommends implementing *Mitigation Measure BIO-2g: Design Treatment to Avoid Mortality, Injury, or Disturbance and Maintain Habitat Function for Special-Status Bumble Bees (All Treatment Activities)* to those specific areas of the project.



Botanical Resources

Special Status Plants Within the CNDDB 9 Quad Search:

Scientific Name	Common Name	Federal Status	State Status	Rank	Rare Plant Rank	Bloom Period
Alopecurus aequalis var. sonomensis	Sonoma alopecurus	Endangered	None	S1	1B.1	May-July
Amorpha californica var. napensis	Napa false indigo	None	None	S2	1B.2	April-July
Amsinckia lunaris	bent-flowered fiddleneck	None	None	S3	1B.2	March- June
Anomobryum julaceum	slender silver moss	None	None	S2	4.2	N/A
Arctostaphylos bakeri ssp. sublaevis	Cedars manzanita	None	Rare	S2	1B.2	Feb-May
Arctostaphylos densiflora	Vine Hill manzanita	None	Endangered	S1	1B.1	Feb-April
Arctostaphylos manzanita ssp. elegans	Konocti manzanita	None	None	S3	1B.3	March- May
Arctostaphylos stanfordiana ssp. decumbens	Rincon Ridge manzanita	None	None	S1	1B.1	Feb-April
Astragalus claranus	Clara Hunt's milk-vetch	Endangered	Endangered	S1	1B.1	March- May
Astragalus rattanii var. jepsonianus	Jepson's milk- vetch	None	None	S3	1B.2	March- June
Balsamorhiza macrolepis	big-scale balsamroot	None	None	S2	1B.2	March- June
Blennosperma bakeri	Sonoma sunshine	Endangered	Endangered	S1	1B.1	March- May
Brodiaea leptandra	narrow-anthered brodiaea	None	None	S3?	1B.2	May-July
Calamagrostis crassiglumis	Thurber's reed grass	None	None	S2	2B.1	May-July
Calochortus raichei	Cedars fairy- lantern	None	None	S2	1B.2	May-Aug
Calystegia collina ssp. oxyphylla	Mt. Saint Helena morning-glory	None	None	S3	4.2	April-June
Campanula californica	swamp harebell	None	None	S3	1B.2	June-Oct
Carex comosa	bristly sedge	None	None	S2	2B.1	May-Sep
Castilleja uliginosa	Pitkin Marsh paintbrush	None	Endangered	SX	1A	June-July
Ceanothus confusus	Rincon Ridge ceanothus	None	None	S1	1B.1	Feb-June
Ceanothus divergens	Calistoga ceanothus	None	None	S2	1B.2	Feb-April



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serpentinusIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	Erigeron	sernentine daisy	None	None	S2	1B 2	May-Aug
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nervulosumbuckwheatImage and the second button and the		Snow Mountain	Nono	Nono	Sa	1R 0	Juna San
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Gratiola heterosepalaBoggs Lake hedge-hyssopNoneEndangeredS21B.2April-AugHemizonia congesta ssp. headed hayfield congestaCongested- headed hayfield tarplantNoneNoneS21B.2April-NovHesperolinon bicarpellatumtwo-carpellate western flaxNoneNoneS21B.2May-JulyHorkelia tenuilobathin-lobed horkeliaNoneNoneS21B.2May-JulyKopsiopsis hookerismall groundcone hookeriNoneNoneS1S22B.3April-AugLasthenia californica ssp. bakeriBaker's goldfieldsNoneNoneS11B.1April-June		0 ,					1
heterosepalahedge-hyssopImage: congested-problemNoneNoneS21B.2April-NovCongesta ssp. congestaheaded hayfield tarplantNoneNoneS21B.2April-NovHesperolinon bicarpellatumtwo-carpellate western flaxNoneNoneS21B.2May-JulyHorkeliathin-lobed horkeliaNoneNoneS21B.2May-JulyKopsiopsis hookerismall groundcone bokeriNoneNoneS1S22B.3April-AugLasthenia californica ssp. bakeriBaker's goldfieldsEndangeredEndangeredS11B.2April-Oct		Boggs Lake	None	Endangered	S2	1B 2	April-Aug
Hemizonia congesta ssp. congestaCongested- headed hayfield tarplantNoneNoneS21B.2April-NovHesperolinon bicarpellatumtwo-carpellate western flaxNoneNoneS21B.2May-JulyHorkelia tenuilobathin-lobed horkeliaNoneNoneS21B.2May-JulyKopsiopsis hookerismall groundcone bookeriNoneNoneS1S22B.3April-AugLasthenia californica ssp. bakeriBaker's goldfieldsEndangeredEndangeredS11B.1April-June			rone	Lindungereu	5-	12.2	inpin mug
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Hesperolinon bicarpellatumtwo-carpellate western flaxNoneNoneS21B.2May-JulyHorkeliathin-lobed horkeliaNoneNoneS21B.2May-JulyKopsiopsis hookerismall groundcone hookeriNoneNoneS1S22B.3April-AugLasthenia burkeiBurke's goldfieldsEndangeredEndangeredS11B.1April-JuneLasthenia bakeriBaker's goldfieldsNoneNoneS11B.2April-Oct							
bicarpellatumwestern flaxImage: Constraint of the sector of the se							-
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tenuilobahorkeliaImage: Constraint of the second sec	bicarpellatum	western flax					
tenuilobahorkeliaImage: Constraint of the second sec	Horkelia	thin-lobed	None	None	S2	1B.2	Mav-Julv
Kopsiopsis hookerismall groundconeNoneNoneS1S22B.3April-AugLasthenia burkeiBurke's goldfieldsEndangeredEndangeredS11B.1April-JuneLasthenia californica ssp. bakeriBaker's goldfieldsNoneNoneS11B.2April-Oct					_	-	5 5
hookeriImage: Constraint of the second s			None	None	S1S2	2B.3	April-Aug
Lasthenia burkeiBurke's goldfieldsEndangeredEndangeredS11B.1April-JuneLastheniaBaker's goldfieldsNoneNoneS11B.2April-Octcalifornica ssp.bakeriImage: Californica structureImage: Californica structureImage: Californica structureImage: Californica structureImage: Californica structure		Siliun groundeone	rtone	TIONE	5152	20.5	inpin mug
Lasthenia californica ssp. bakeriBaker's goldfieldsNoneNoneS11B.2April-Oct		Burke's goldfields	Endangered	Endangered	S1	1R 1	April-Jupe
californica ssp. bakeri		_	-	-			-
bakeri		Baker's goldfields	None	None	S1	1B.2	Aprii-Oct
Lorrio Coluga Jorrio Nama Nama Ca Da 4 "							
	Layia	Colusa layia	None	None	S2	1B.2	April-may
septentrionalis							
Legenere limosa legenere None None S2 1B.1 April-June	Legenere limosa	legenere	None	None	S2	1B.1	April-June



Leptosiphon	Jepson's	None	None	S2S3	1B.2	March-
jepsonii	leptosiphon	None	None	5253	1D.2	may
Lilium	Pitkin Marsh lily	Endangered	Endangered	S1	1B.1	June-July
pardalinum ssp.		0.0	0.0	-		
pitkinense						
Limnanthes	Sebastopol	Endangered	Endangered	S1	1B.1	April-May
vinculans	meadowfoam	-	_			
Lupinus	Cobb Mountain	None	None	S2?	1B.2	March-
sericatus	lupine					June
Microseris	marsh microseris	None	None	S2	1B.2	April-June
paludosa						
Navarretia	Baker's	None	None	S2	1B.1	April-July
leucocephala	navarretia					
ssp. bakeri						
Navarretia	many-flowered	Endangered	Endangered	S1	1B.2	April-June
leucocephala	navarretia					
ssp. plieantha						
Penstemon	Sonoma	None	None	S_3	1B.3	April-Aug
newberryi var.	beardtongue					
sonomensis						
Piperia candida	white-flowered	None	None	S_3	1B.2	May-Sep
	rein orchid					-
Plagiobothrys	Calistoga	Endangered	Threatened	S1	1B.1	March-
strictus	popcornflower					June
Poa napensis	Napa blue grass	Endangered	Endangered	S1	1B.1	May-Aug
Puccinellia	California alkali	None	None	S2	1B.2	March-
simplex	grass					May
Rhynchospora	white beaked-	None	None	S2	2B.2	July-Aug
alba	rush					
Rhynchospora	California	None	None	S1	1B.1	May-July
californica	beaked-rush					
Rhynchospora	brownish beaked-	None	None	S1	2B.2	July-Aug
capitellata	rush					
Rhynchospora	round-headed	None	None	S1	2B.1	July-Aug
globularis	beaked-rush					
Sidalcea	Napa	None	None	S1	1B.1	April-June
hickmanii ssp.	checkerbloom					-
napensis						
Sidalcea oregana	Kenwood Marsh	Endangered	Endangered	S1	1B.1	June-Sep
ssp. valida	checkerbloom					
Spergularia	long-styled sand-	None	None	S2	1B.2	Feb-May
macrotheca var.	spurrey			-	-	
longistyla						
Streptanthus	Freed's	None	None	S2	1B.2	may-july
brachiatus ssp.	jewelflower	-	_			55-5
hoffmanii						
Streptanthus	Hoffman's bristly	None	None	S2	1B.3	March-
glandulosus ssp.	jewelflower				Ŭ	July
hoffmanii						-
Stuckenia	northern slender	None	None	S2S3	2B.2	N/A
filiformis ssp.	pondweed			5		
alpina	-					
Trifolium	two-fork clover	Endangered	None	S1	1B.1	April-June
amoenum		-	1			1



Trifolium buckwestiorum	Santa Cruz clover	None	None	S2	1B.1	April-Oct
Trifolium hydrophilum	saline clover	None	None	S2	1B.2	April-June
Triquetrella californica	coastal triquetrella	None	None	S2	1B.2	N/A
Usnea longissima	Methuselah's beard lichen	None	None	S4	4.2	N/A
Viburnum ellipticum	oval-leaved viburnum	None	None	S3?	2B.3	May-June



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Shiloh/Foothill CAL VTP, Rare Plant Survey 2019-2022

Shiloh Regional Park

Initial survey efforts by Sonoma County Regional Parks staff led by field lead Len Mazur to document Shiloh Ranch Regional Park's sensitive botanical resources began in Spring of 2019. These surveys targeted roads, trails and other high impact areas and focused primarily on relocating and recording historic rare plant occurrences within the park boundary. Survey targets included Napa false indigo, *Amorpha californica var. napensis* (CRPR 1B.1), Lobb's aquatic buttercup, *Ranunculus lobbii* (CRPR, 4.2) and other associated vernal pool species, and green coyote mint, *Monardella viridis* (CRPR, 4.2). Georeferenced data including population and habitat quality assessment were collected and stored using the online data management tool, CalFlora.org using a standardized CNDDB format. Documentation of botanical resources has continued via periodic ongoing seasonal survey efforts between 2019 and 2022.

An official nine-quad survey effort was assigned to Natural Resources field staff in spring of 2022. Beginning in April (4/19/2022) and extending into early May of 2022, spring surveys of Shiloh's existing roads and trails network, high ridges, and wildland urban interface (WUI) sections along the northern and southern park boundaries were conducted in preparation for ongoing fuels reduction work planned for the park. A team of four field technicians, with oversight from field lead (Len Mazur) conducted surveys focusing on seasonally appropriate targets identified in the nine-quad query. Survey efforts began in the northeastern sections of the park, focusing on relic road systems, ridges and WUI, moving systematically through the park's trail network, then finalizing the survey efforts in the WUI sections along the southern park boundary. Some areas of the southern WUI were unable to be surveyed due to steep drainages and unstable slopes. Focused surveys were conducted around vernal pools, chaparral, edge habitats, and other potentially sensitive areas.

Previous biological surveys from the 2001 Shiloh Ranch Regional Park Management Plan (Becker) documented the presence of *Navarretia leucocephala ssp. plieantha* (CRPR 1B.2) within the vernal pool areas. Due to the timing of the surveys, and possibly due to external environmental factors, these populations have not been relocated by parks staff over several years of surveying. The vernal pools, however, have been well mapped and will be identified as avoidance areas for vegetation management.

A follow-up late season survey with five field staff and field lead Len Mazur was conducted over the course of two weeks beginning on August 8, 2022 and ending August 15, 2022. Areas identified for spring field surveys were resurveyed for late-season occurrences outlined in the nine-quad plant query. Survey efforts replicated the same routes conducted in the early spring surveys.

Several previously unrecorded, large populations of *Amorpha californica var. napensis*, were documented during survey efforts. No other identified targets from the 9 quad survey list were located. Several randomly selected, and disparate occurrences of Arctostaphylos manzanita were keyed using Field Guide to Manzanitas (Backcountry Press, 2015) to confirm they were not the rare species on the list. Several other plant occurrences were keyed using the Jepson Manual, Vascular Plants of California 2nd edition/Jepson Online and Plants of the San Francisco Bay Region (Beidleman and Kolzoff) to confirm their identities. Lack of rare plant occurrences is likely due to decadent forest conditions, and absence of soil types that encourage obligate rarity, such as clay or serpentine soils.

Data collected were subject to a quality control process by field lead, Len Mazur to confirm the accuracy of location, population, and habitat information. These data are stored on the online data management tool, Calflora.org.

Foothill Regional Park

Initial survey efforts by Sonoma County Regional Parks staff led by field lead Len Mazur to document Foothill Regional Park's sensitive botanical resources began in Spring of 2019. These surveys targeted roads, trails and other high impact areas and focused primarily on relocating and recording historic rare plant occurrences within the park boundary. One full survey of the park area was completed in the Spring/Summer field season of 2019 in which no sensitive plant species were documented. In fall of 2019, nearly 100% of the park area was consumed by wildfire during the Kincaide Fire (October – November 2019). The following field season (2020), Foothill Regional Park was elevated in priority for surveying for rare or uncommon fire-following species. Nearly all of the park's 210 acres were surveyed during this period, and again, no sensitive or rare plant species were detected. Several return surveys and follow-up invasives work has been completed at the park in the months and years following the fire without detection of rare or sensitive species.

A review of existing literature confirms the trends observed by current field staff. A biological assessment of the park included in the 1992 Foothill Regional Park Master Plan (Singer & Hodges Inc.), states that... 'surveys conducted by Golden Bear Biostudies during the fall of 1991 and the spring of 1992 found no occurrences of rare or endangered plants on the park site.'

A nine-quad survey was not conducted at Foothill Regional Park. However, an assessment of soils, geology, existing vegetation communities, and previously published literature, in combination with extensive spring, summer and fall pre- and post-fire surveying by trained parks staff between 2019 and 2022, resulting in no documented rare or sensitive species present, makes the potential for rare or endangered species at this location exceedingly low.

Lenihan Mazur

Lenihan Mazur Sonoma County Regional Parks Natural Resources Division Vegetation Management Technician





Shiloh Ranch Regional Park 2022 VTP Botanical Survey

Sonoma County Regional Parks Natural Resources Division



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•	Amorpha californica var, napensis		Park Trails
0	Ranunculus lobbii	Shilo	h CalVTP
	Amorpha californica var. napensis		Ecological Restoration
11/1	Ranunculus lobbii	Page	143 Shaded Fuel Break
	Park Boundaov		Mildiand Linhan Interface