



Potential Project Impact: The potential for this species to be impacted by operations is very low. Due to the habitat requirements of this species, it is anticipated that there will be a net benefit through grassland expansion. Burning oak woodlands will have the potential to create new grassy openings and meadows; this will create new opportunities for this species to establish, while removing competing invasives.

White-flowered rein orchid (*Piperia candida*)

Status: None

Habitat requirements and description: Orchid native to western North America from Alaska to San Francisco Bay Area. Found in coniferous forests, oak woodland forests, and serpentine soils. Grows erect to half a meter and produce a spikelike inflorescence of many honey scented flowers.

Potential for Occurrence: There is a moderate potential for this species to occur within mixed conifer forest and oak woodland forest types.

Potential Project Impact: The potential for this species to be impacted by operations is very low. Due to the habitat requirements of this species, it is anticipated that there will be a net benefit through increased sunlight reaching shaded out mixed conifer understory. This species will be included in SPR BIO-2 trainings, which will reduce the potential for accidental removal of individuals.

Survey Methods

Many of the above listed plant species require a serpentine soil type to occur. Some are only found in the serpentine canyon of the Cedars area in Sonoma County. The Cedar's manzanita (which is known to occur on serpentine soils) was the only CESA or ESA listed species known to occur within the 9-quads queried. Soils data from the USGS Web Soil Survey was analyzed, along with a reconnaissance survey, to narrow the list of target species. There is one area within the Cooley Ranch with serpentine soils, which will be excluded from treatment activities. See Attachment C maps for location. As a result, serpentine endemic species were not included on the target list for the botanical survey.

Species were ruled out for consideration if their required habitat was not present, or it was determined that impact could clearly be avoided during operations. See individual species impact determinations above. A majority of the project area will be treated under the ecological restoration treatment type. As stated in the PEIR, Biological Resources section 3.6 Pg 133,

“In the ecological restoration treatment type, the objective is to restore degraded, damaged, or destroyed ecosystems and habitats in fire-adapted vegetation types by returning them to their natural fire regime and returning vegetation in Condition Classes 2 and 3 to Condition Class 1¹. This would benefit special-status plants associated with these habitats in the long-term by restoring the historic vegetation composition, structure, and habitat values and function under which these species evolved. Removal of overgrown shrubs and thinning tree canopies could benefit special-status plant populations in the short term by allowing more light to reach them



Survey Results

No listed or non-listed species were located during the botany surveys. An early season survey was conducted between March 13th – 17th, 2023 and a mid-season survey was conducted between May 15th – 18th, 2023. During these surveys the mechanical treatment areas/ shaded fuel breaks were traversed, covering approximately 90% of the total area.

There was one recorded occurrence of beaked tracyina located at the confluence of Dry Creek and Galloway Creek. This area was surveyed extensively, but no individuals were relocated. Despite this, the area will be protected by the WLPZ protection measures outlined by the SPRs. These measures will prevent impact to this species if it does exist within the mapped location. See Attachment A. During the surveys, the following species were identified.

Identified Species

Pacific madrone (*Arbutus menziesii*)
California bay (*Umbellularia californica*)
Toyon (*Heteromeles arbutifolia*)
California coffeeberry (*Frangula californica*)
Large leather-root (*Hoita macrostachya*)
Leather oak (*Quercus durata*)
Pointleaf manzanita (*Arctostaphylos pungens*)
Yerba santa (*Eriodictyon californicum*)
Sweetshrub (*Calycanthus occidentalis*)
Douglas-fir (*Pseudotsuga menziesii*)
Coast live oak (*Quercus angustifolia*)
Valley oak (*Quercus lobata*)
California black oak (*Quercus kelloggii*)
Oregon white oak (*Quercus garryana*)
Ranger buttons (*Sphenosciadium capitellatum*)
Northern maidenhair (*Adiantum pedatum*)
Timothy grass (*Phleum pratense*)
Pinemat manzanita (*Arctostaphylos nevadensis*)
Spanish broom (*Spartium junceum*)
Coastal wood fern (*Dryopteris arguta*)
Yarrow (*Achillea millefolium*)
Deer brush (*Ceanothus integerrimus*)



Serviceberry (*Amelanchier alnifolia*)
California buckeye (*Aesculus californica*)
Big berry manzanita (*Arctostaphylos glauca*)
Blackwood acacia (*Acacia melanoxylon*)
Eastwoods manzanita (*Arctostaphylos glandulosa*)
Yellow monkeyflower (*Mimulus guttatus*)
Coyote mint (*Monardella villosa*)
French broom (*Genista monspessulana*)
Beaked hazelnut (*Corylus cornuta*)
Coastal Woodfern (*Dryopteris arguta*)
Douglas iris (*Iris douglasiana*)
Bigleaf maple (*Acer macrophyllum*)
Drops of gold (*Prosartes hookeri*)
Dwarf rose (*Rosa gymnocarpa*)
Redwood insideout flower (*Vancouveria planipetala*)
Creambush (*Holodiscus discolor*)
St john's wort (*Hypericum perforatum*)
Stinkwort (*Dittrichia graveolens*)
Mugwort (*Artemisia Douglasii*)
White sweetclover (*Melilotus albus*)
Narrowleaf willow (*Salix exigua*)
Twiggy mullein (*Verbascum virgatum*)
Mule fat (*Baccharis salicifolia*)
White alder (*Alnus rhombifolia*)
Large-flower primrose-willow (*Ludwigia grandiflora*)
River bulrush (*Bolboschoenus fluviatilis*)
Water speedwell (*Veronica anagallis-aquatica*)
Blazing star (*Mentzelia laevicaulis*)
Common chicory (*Cichorium intybus*)
Southern catalpa (*Catalpa bignonioides*)
Pennyroyal (*Mentha pulegium*)
Wild carrot (*Daucus carota*)



Hayfield tarweed (*Hemizonia congesta*)
Crested wheatgrass (*Agropyron cristatum*)
Blue oak (*Quercus douglasii*)
Poison hemlock (*Conium maculatum*)
California buckwheat (*Eriogonum fasciculatum*)
Black cottonwood (*Populus balsamifera ssp. Trichocarpa*)
Miner's lettuce (*Claytonia perfoliate*)
Bur Chervil (*Anthriscus caucalis*)
Western buttercup (*Ranunculus occidentalis*)
Chickweed (*Stellaria media*)
Chilean tarweed (*Madia sativa*)
Tolmie star-tulip (*Calchortus tolmiei*)
California poppy (*Eschscholzia californica*)