



Carnegie State Vehicular Recreation Area Rare Plant and Native Grassland Survey Report



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Table of Contents

1	Introduction	3
2	Methods	3
2.1	Identification of Target Species	4
2.2	Precipitation and Survey Dates	5
2.3	Native Grassland.....	6
3	Results	7
3.1	Special-status Plants.....	7
3.2	Native Grassland.....	14
4	Literature Cited.....	17
Appendix A Figures		18
	Figure 1 Regional Location.....	19
	Figure 2 Carnegie SVRA Area Map.....	20
	Figure 3a Rare Plant Occurrences – 2021 Surveys.....	21
	Figure 3b Rare Plant Occurrences – 2021 Surveys.....	22
	Figure 3c Rare Plant Occurrences – 2021 Surveys.....	23
	Figure 3d Rare Plant Occurrences – 2021 Surveys.....	24
	Figure 3e Rare Plant Occurrences – 2021 Surveys.....	25
	Figure 3f Rare Plant Occurrences – 2021 Surveys.....	26
	Figure 4 Rare Plant Occurrences – Pre-2021 Surveys.....	27
	Figure 5a Native Grassland Occurrences.....	28
	Figure 5b Native Grassland Occurrences.....	29
	Figure 5c Native Grassland Occurrences.....	30
	Figure 5d Native Grassland Occurrences.....	31
	Figure 5e Native Grassland Occurrences.....	32
Appendix B Identification of Target Species Memo		33
Appendix C Photographs		34
Appendix D List of Plants Observed		48

1 Introduction

Carnegie State Vehicular Recreation Area (SVRA), a unit of the California Department of Parks and Recreation, is a 5,000-acre off-highway recreation area open primarily to motorcycles and all-terrain vehicles (ATVs). It is located in southeast Alameda and southwest San Joaquin Counties and is situated in a rural area, approximately 15 miles east of Livermore and 6 miles south of Tracy (Appendix A, Figure 1). Surrounding land use is primarily open space ranch land used for cattle grazing as well as the 7,000-acre Lawrence Livermore National Laboratory Experimental Test Site to the north, which is mostly open space. Carnegie SVRA is situated in the *Altamont*, *Cedar Mtn*, and *Midway* U.S. Geological Survey (USGS) 7.5-minute quadrangles.

Prior to 1930, Carnegie was the site of a large cattle grazing operation and as early as the 1930s, the area was used for off-road motorcycle riding. The topography consists of rolling hills with some areas of extremely steep terrain and ranges in elevation from 600 to 2200 feet North American Vertical Datum of 1988 NAVD88 (Google Inc. 2021). Approximately 1,600 acres of Carnegie SVRA is open to off-highway vehicular use with the remaining area closed to the public. The area closed to the public is accessible by a network of maintained dirt roads. Corral Hollow Creek, a semi-perennial creek, which drains a portion of the Diablo Range east of Livermore into the San Joaquin River basin of the Central Valley, flows through the western portion of Carnegie and along the northern boundary. Also, there are numerous stock ponds throughout the SVRA (Appendix A, Figure 2).

The region is classified as semi-arid with a Mediterranean climate, with most rain falling in the winter and spring. Mild cool temperatures are common in the winter. Hot to mild temperatures are common in the summer. Vegetation communities mapped within Carnegie SVRA include *Blue Oak Woodland and Forest Alliance*, *California Sagebrush – Black sage Scrub Alliance*, *Fremont Cottonwood Forest and Woodland Alliance*, and *Wild Oats and Annual Brome Grasslands Semi-natural Alliance* (Carnegie SVRA 2015).

To inform impact assessment, a protocol-level survey for special-status plants was conducted by MIG. This report documents the findings surveys conducted in March, April, May, August, and September 2021.

2 Methods

MIG senior biologist and plant ecologist, David Gallagher, M.S. with the assistance of MIG and State Parks staff conducted surveys in 2021 to determine the presence or absence of special-status plants within Carnegie SVRA on 22-25 and 29-30 March; 1-2, 21-23, and 26-28 April; 18-20 and 25 May; 25 August; and 15 September (Table 1). Additionally, native grasslands were identified and mapped during the surveys. During the surveys, special-status plant populations and native grasslands were mapped using a tablet with an Arrow 100 submeter GPS receiver and a geo-spatial mobile-device application. The surveys were conducted in accordance with recommended California Department of Fish and Wildlife protocols (CDFW 2018) as follows:

- Prior to conducting the initial survey, an extensive background review of relevant botanical information, including California Natural Diversity Database (CNDDDB) records was conducted.
- Surveys were floristic in nature (every plant taxon detectable in the project area was identified to the level necessary to determine rarity and listing status).
- 20 site visits were made during the year to detect species that bloom and are identifiable at various times of the year.
- Event though reference populations were not visited, representative photographs of potentially occurring special-status species were reviewed prior to the surveys.

Table 1. List of MIG and State Parks Staff

MIG/California State Parks Staff	
David Gallagher	Senior Biologist, MIG
Megan Kalyankar	Senior Biologist, MIG
Alex Broskoff,	Biologist, MIG
Jenna Tuttle	Biologist, MIG
Tara Kerss	Environmental Scientist, Carnegie SVRA
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Melissa Patten	Environmental Scientist, Off Highway Motor Vehicle Recreation Division
Shane Emerson	Environmental Scientist, Off Highway Motor Vehicle Recreation Division
Michelle Winn	Environmental Scientist, Off Highway Motor Vehicle Recreation Division
Ashley Payne	Forestry Aide, Carnegie SVRA

2.1 Identification of Target Species

MIG performed a background search and literature review to develop a list of special-status plant species known to occur or potentially occur in the project area prior to the start of protocol level surveys for special-status plants within Carnegie SVRA. The results were submitted to Parks on 25 February 2021 and are attached in Appendix B, *Carnegie State Vehicular Recreation Area (SVRA) 2021 Special-status Plant and Native Grassland Surveys*. A list of 18 special-status species that occur or may occur within Carnegie SVRA was compiled based upon the habitats and edaphic conditions present, CNDDDB and Calflora records within the immediate vicinity of the area, and MIG's knowledge of sensitive plant species in the area (Baldwin et al. 2012; Calflora 2021; CNDDDB 2021). See Appendix D for a complete list of plants observed during the surveys.

2.2 Precipitation and Survey Dates

The region is classified as semi-arid with a Mediterranean climate, with most rain falling in the winter and spring. Mild cool temperatures are common in the winter. Hot to mild temperatures are common in the summer. The average daily maximum temperatures are 89°F in summer and 38°F in winter and mean annual precipitation is 14.2 inches.

Relative to the 30-year climate normal, Carnegie SVRA experienced drier than normal conditions prior to the March, April, and May surveys. The project region was experiencing a severe to extreme drought as estimated by the Palmer Drought Severity Index (PDSI). Total estimated precipitation at the project area from October 2020 to May 2021 was 5.89 inches, which was approximately 42% of 30-year average (1989-2018) for the same period (Deters 2021).

Even though the project area received lower levels of precipitation from October to November, normal levels of precipitation were received between December and February, which is critical in the germination phenology for many species. Therefore, below average rainfall was not expected to have adversely affected the identification of the majority of the 18 special-status plants that may potentially occur in the project area. However, even with normal levels of precipitation during this period, germination of some special-status species, particularly annuals and herbaceous perennials, may not occur due to the overall drier than normal conditions, or a species may germinate or return from rootstock in some areas of Carnegie but not in other areas due to microhabitat conditions.

The March and early April 2021 surveys focused on late winter to early spring bloomers, including Santa Clara thornmint (*Acanthomintha lanceolata*), Douglas' fiddleneck (*Amsinckia douglasiana*), California androsace (*Androsace elongata* ssp. *acuta*), Lemmon's jewelflower (*Caulanthus lemmonii*), diamond-petaled California poppy (*Eschscholzia rhombipetala*), Stinkbells (*Fritillaria agrestis*), Diablo helianthella (*Helianthella castanea*), Mt. Hamilton coreopsis (*Leptosyne hamiltonii*), sylvan scorzonella (*Microseris sylvatica*), and California groundsel (*Senecio aphanactis*). The late April and May 2021 surveys focused on spring and early summer bloomers, including large-flowered fiddleneck (*Amsinckia grandiflora*), chaparral harebell (*Campanula exigua*), Santa Clara red ribbons (*Clarkia concinna* ssp. *automixa*), Hospital Canyon larkspur (*Delphinium californicum* ssp. *interius*), Jepson's woolly sunflower (*Eriophyllum jepsonii*), phlox-leaf serpentine bedstraw (*Galium andrewsii* ssp. *gatense*), and Michael's rein orchid (*Piperia michaelii*). The August 2021 surveys focused on big tarweed (*Blepharizonia plumosa*).

Survey areas were selected based on existing documented occurrence data, vegetation communities, microhabitats, and soil types. Surveys were generally performed by conducting meandering transects with particular emphasis on microhabitats within the survey areas that could potentially support special-status plants. Some areas of Carnegie were not accessible for surveys due to steep, mountainous terrain and/or extremely dense and impenetrable vegetation.

See Appendix B, *Carnegie State Vehicular Recreation Area (SVRA) 2021 Special-status Plant and Native Grassland Surveys* for more information on survey methodology.

2.3 Native Grassland

Natural communities have been considered part of the Natural Heritage Conservation triad, along with plants and animals of conservation significance since California's inception of the Natural Heritage Program in 1979. The California Department of Fish and Wildlife (CDFW) determines the level of rarity and imperilment of vegetation types; and tracks sensitive natural communities in its Rarefind database (CNDDDB 2021).

Global rankings (G) of natural communities reflect the overall condition (rarity and endangerment) of a habitat throughout its range, whereas state (S) rankings reflect the condition of a habitat within California. Natural communities are defined using NatureServe's standard heritage program methodology as follows (CDFG 2007):

- G1/S1: Less than 6 viable occurrences or less than 2,000 acres.
- G2/S2: Between 6 and 20 occurrences or 2,000 to 10,000 acres.
- G3/S3: Between 21 and 100 occurrences or 10,000 to 50,000 acres.
- G4/S4: The community is apparently secure, but factors and threats exist to cause some concern.
- G5/S4: The community is demonstrably secure to ineradicable due to being common throughout the world (for global rank) or the state of California (for state rank).

State rankings are further described by the following threat code extensions:

- S1.1: Very threatened.
- S1.2: Threatened.
- S1.3: No current threats known.

In addition to tracking sensitive natural communities, the CDFW also ranks vegetation alliances, defined by repeating patterns of plants across a landscape that reflect climate, soil, water, disturbance, and other environmental factors (Sawyer et al. 2009). If an alliance is marked G1-G3, all the vegetation associations within it will also be of high priority (CDFG 2007). CDFW's currently accepted list of vegetation alliances and associations is provided by the Vegetation Classification and Mapping Program (VegCAMP) (CDFW 2021). During the March, April, and May surveys, native grasslands were mapped and classified using CDFW's currently accepted list of vegetation alliances and associations, where applicable.

Surveys for native grasslands were conducted concurrently with the rare plant surveys in March, April, and May 2021. Surveys were generally performed by conducting meandering transects in area mapped as *Wild Oats and Annual Brome Grasslands Semi-natural Alliance* as well as open grassland areas identified in aerial imagery (Carnegie SVRA 2015; Google Inc. 2021). Some areas of Carnegie were not accessible for surveys due to steep, mountainous terrain and/or extremely dense and impenetrable vegetation. These areas may contain suitable habit

for special-status species. See Appendix B, *Carnegie State Vehicular Recreation Area (SVRA) 2021 Special-status Plant and Native Grassland Surveys* for more information on survey methodology and grass species present or potentially present at Carnegie.

3 Results

3.1 Special-status Plants

Special-status Species. Five special-status species plants were identified and mapped within Carnegie SVRA during the 2021 surveys: big tarweed, Hospital Canyon larkspur, Jepson's woolly sunflower, Santa Clara thornmint, and stinkbells (Appendix A, Figures 3a to 3f). Each species is described below in detail, including occurrence data, and known conservation threats. Photos of each species observed are included in Appendix C (Photos 1 to 10) and list of all plants observed during the 2016 floristic inventory, updated with new species observed during the 2021 surveys, is provided in Appendix D.

Other special-status species not observed during the 2021 surveys but are assumed to be present include California androsace, California groundsel, chaparral harebell, Michael's rein orchid, phlox-leaf serpentine bedstraw, and sylvan scorzonella. These species are described below. The locations and date of occurrences for these species are shown in Appendix A, Figure 4.

Big Tarweed. This species was observed growing on a steep north-facing slope in California annual grassland during the 15 September survey. The number of individuals observed was 15. Also, during the 2016 floristic inventory, at least 40 individuals were observed growing on a steep north-facing slope along an ephemeral drainage and at least 15 individuals were observed growing along a dirt access road. Both locations were within California annual grassland. However, big tarweed was not observed at these locations during the 2021 surveys and likely did not germinate at these locations due to drier than normal conditions. However, big tarweed likely persists at these locations in the seedbank. The dominant plant associates included slender oat (*Avena barbata*), and foxtail brome (*Bromus madritensis*).

Big tarplant is an annual herb in the sunflower family (Asteraceae) that blooms from July to October. This species grows on dry slopes, often in disturbed areas, in valley and foothill grassland. It has a CRPR of 1B.1 (i.e., plants that are rare, threatened, or endangered in California and elsewhere and is seriously threatened in California). It is endemic to California where it is known from 31 documented occurrences since 2000, mainly from the Diablo Range and Carrizo Plain. Historical occurrences probably extirpated by agriculture and non-native plants. Seriously threatened by urbanization; also threatened by disking, residential development, and non-native plants (Calflora 2021; CNPS 2021).

Within Alameda and San Joaquin Counties, there are seven documented occurrences since 2000, including a 2004 occurrence from Carnegie. The 2016 occurrences from Carnegie are not included in the Calflora database. There are 18 historical occurrences for this species from Alameda and San Joaquin Counties with the most recent from 1998 at a location now located in

the boundaries of Carnegie SVRA (Calflora 2021; CNPS 2021). Since big tarplant is seriously threatened throughout its range, impacts to or loss of existing populations and individuals could affect this species' persistence and would be considered significant.

Hospital Canyon Larkspur. This species was observed growing on the banks along drainages in Carrol Canyon and Kiln Canyon during the 22 and 27 April 2021 surveys. The number of individuals observed was approximately 12 in Carrol Canyon and 52 in Kiln Canyon. Also, during the 2016 floristic inventory, at least 100 individuals were observed growing on a slope within chaparral at a different location. However, this species was not observed at this location during the 2021 surveys and likely did not return from rootstock at this location due to drier than normal conditions. However, Hospital Canyon larkspur likely persists at this location. The dominant plant associates included California bee plant (*Scrophularia californica*), California goosefoot (*Chenopodium californicum*), California man-root (*Marah fabacea*), California sagebrush (*Artemisia californica*), coyote brush (*Baccharis pilularis*), desert olive (*Forestiera pubescens*), and sticky monkeyflower (*Diplacus aurantiacus*).

Hospital Canyon larkspur is a perennial herb in the buttercup family (Ranunculaceae) that grows on slopes (sometimes in mesic areas) within chaparral, coast scrub, and cismontane woodlands. The blooming period for this species extends from April to June. It has a CRPR of 1B.2 (i.e., plants that are rare, threatened, or endangered in California and elsewhere and is moderately threatened in California). It is endemic to California where it is known from 28 documented occurrences since 2000, mainly from the Diablo Range and Pinnacles National Monument in the Gabilan Range. Threats to this species include vehicles and recreational activities (Calflora 2021; CNPS 2021).

Within Alameda County, there are only three documented occurrences since 2000 from Carnegie SVRA (2004 occurrence) and Ohlone Regional Wilderness. There are no documented occurrences from San Joaquin County since 2000. The 2016 occurrence from Carnegie is not included in the Calflora database. There are 11 historical occurrences for this species from Alameda and San Joaquin Counties with the most recent from 1997 near Tarraville Creek and Mines Road (Calflora 2021; CNPS 2021). Since Hospital Canyon larkspur is only known from Carnegie SVRA and Ohlone Regional Wilderness, impacts to or loss of existing populations and individuals could affect this species' persistence and would be considered significant.

Jepson's Woolly Sunflower. This species was observed growing in the upper Franciscan Loop Trail area during the 22, 26, and 28 April 2021 surveys on moderate to steep north-facing slopes in open grassy areas of the *California Sagebrush – Black sage Scrub Alliance* and *Blue Oak Woodland and Forest Alliance* vegetation communities. The number of individuals observed was 57 at two locations. Also, during the 2016 floristic inventory, 20 individuals were observed at one of these locations. The dominant species growing in these areas included blue oak (*Quercus douglasii*), California sagebrush, common soap root (*Chlorogalum pomeridianum* var. *pomeridianum*), common yarrow (*Achillea millefolium*), coyote mint (*Monardella villosa*), Fremont's bush mallow (*Malacothamnus fremontii*), and sticky monkey flower.

Jepson's woolly sunflower is a perennial subshrub herb in the sunflower family (Asteraceae) that occurs in oak woodland and chaparral plant communities, sometimes on serpentine substrate. The blooming period for this species extends from April to June. It has a CRPR of 4.3 (i.e., watch list for plants of limited distribution or are infrequent throughout a broader area in California and is not very threatened in California). Since Jepson's woolly sunflower is on a watch list, more current and accurate information is still needed on its distribution and ecology. It is endemic to California where it is known from 24 documented occurrences since 2000, mainly from the Diablo Range. Threats to this species are unknown, but likely include development, recreational activities, and competition with non-native plants (Calflora 2021; CNPS 2021).

Within Alameda County, there are five documented occurrences since 2000, including a 2004 occurrence from Carnegie SVRA. There are no documented occurrences in San Joaquin County. The 2016 occurrence is not included in the Calflora database. There are 14 historical occurrences for this species from Alameda County with the most recent occurrence from 1994 at Los Mochos Boy Scout Camp, east of Ohlone Regional Wilderness (Calflora 2021; CNPS 2021). Given that Jepson's woolly sunflower is only known from one other area in Alameda County, conservation of existing populations at Carnegie SVRA could be essential for preserving its genetic resources and ensuring its persistence in the County.

Santa Clara Thornmint. This species was observed growing in the southwestern portion of Carnegie during the 22 and 24 March 2021, and 21 April 2021 surveys on steep southwest-facing slopes composed of decomposing hard shale substrate in the *California Sagebrush – Black sage Scrub Alliance* vegetation community. The number of individuals observed was approximately 267 at four locations, with approximately 200 plants occurring at a single location. During the 2016 floristic inventory, at least 300 individuals were observed at one of these locations, as well. The shale slopes were mostly devoid of vegetation, but other plant species present included California juniper (*Juniperus californica*), California sagebrush, foxtail brome, purple navarretia (*Navarretia pubescens*), silver puffs (*Uropappus lindleyi*), slender oat, and yerba santa (*Eriodictyon californicum*).

Santa Clara thornmint is an annual herb in the mint family (Lamiaceae) that occurs in rocky outcrops on slopes, sometimes serpentine, in chaparral and cis-montane woodland plant communities. The blooming period for this species extends from March to June. It has a CRPR of 4.2 (i.e., watch list for plants of limited distribution or are infrequent throughout a broader area in California, but is moderately threatened in California). Since Santa Clara thornmint is on a watch list, more current and accurate information is still needed on its distribution and ecology. It is endemic to California where it is known from over 500 documented occurrences since 2000, mainly from the Diablo and Temblor Ranges. Threats to this species include competition with non-native plants, grazing, and hydrological alterations (Calflora 2021; CNPS 2021).

Within Alameda and San Joaquin Counties, there are 11 documented occurrences since 2000, including a 2004 occurrence from Carnegie SVRA. The 2016 occurrence is not included in the Calflora database. There are 30 historical occurrences for this species from Alameda and San

Joaquin Counties with the most recent occurrence from 1998 at a location now located in the boundaries of Carnegie SVRA (Calflora 2021; CNPS 2021). Given that Alameda and San Joaquin Counties are at the northern limits of the documented range for Santa Clara thornmint, conservation of existing populations of this species could be essential for preserving its genetic resources and ensuring its persistence in these Counties.

Stinkbells. This species was observed growing in the northwestern portion of Carnegie during the 22 and 23 March 2021 surveys on moderate to gentle, mostly north-facing slopes in the *Wild Oats and Annual Brome Grasslands Semi-natural Alliance* and *Nassella cernua Herbaceous Alliance* (native grassland – see section 3.2 below) vegetation communities. The number of individuals observed was approximately 430 at three locations. During the 2016 floristic inventory, at least 57 individuals were observed at three separate locations. However, during the 2021 surveys this species was not observed at any of these locations, likely due to drier than normal conditions. However, stinkbells bulbs likely persist at these locations. Other plant species present observed in these locations included common gum plant (*Grindelia camporum*), common soap root, common yarrow, *Lomatium* sp., naked buckwheat (*Eriogonum nudum*), needle goldfields (*Lasthenia gracilis*), nodding needle grass (*Stipa cernua*), San Francisco leafy fleabane (*Erigeron foliosus* var. *franciscensis*), slender oat, and soft brome (*Bromus hordeaceus*).

Stinkbells is a perennial bulbiferous herb in the lily family (Liliaceae) that occurs in clay and sometimes serpentine substrate in chaparral cismontane woodland, pinyon and juniper woodland, and valley and foothill grassland plant communities. The blooming period for this species extends from March to June. It has a CRPR of 4.2 (i.e., watch list for plants of limited distribution or are infrequent throughout a broader area in California, but is moderately threatened in California). Since stinkbells is on a watch list, more current and accurate information is still needed on its distribution and ecology. It is endemic to California where it is known from at least 100 documented occurrences since 2000 and is widely distributed, occurring in the Diablo, Caliente, Santa Lucia, and Transverse Ranges as well as the foothills of the Sierra Nevada. Threats to this species include development, grazing, and vehicles and is also possibly threatened by competition with non-native plants (Calflora 2021; CNPS 2021).

Within Alameda and San Joaquin Counties, there are 15 documented occurrences since 2000, including a 2016 occurrence from Carnegie. There are 13 historical occurrences for this species from Alameda and San Joaquin Counties with the most recent occurrence from 1998 from a location now located in the boundaries of Carnegie SVRA (Calflora 2021; CNPS 2021). Given that most populations are small, conservation of existing populations of this species could be essential for preserving its genetic resources and ensuring its persistence in these Counties.

The following are special-status species assumed to be present at Carnegie but were not observed during the 2021 surveys.

California Androsace. This species was not observed during the 2021 surveys, but one population of at least 1000 individuals were observed in the southwest portion of Carnegie

during the 2016 floristic surveys, where it was growing on a rocky slope in the *Blue Oak Woodland and Forest Alliance* vegetation community. California androsace likely did not germinate due to drier than normal conditions. However, California androsace likely persists at this location in the seed bank.

California androsace is an annual herb in the primrose family (Primulaceae) that blooms from March to June. This species occurs on slopes in cismontane woodland, grassland, and chaparral, often on rocky substrate. It has a CRPR of 4.2, which means it is on a watch list for plants of limited distribution or are infrequent throughout a broader area in California and is considered moderately threatened in California. Since it is on a watch list, more current and accurate information is still needed on its distribution and ecology. It is endemic to California where it is known from at least 64 documented occurrences since 2000 and is widely distributed. Possibly threatened by grazing, trampling, non-native plants, alteration of fire regimes, and recreational activities (Calflora 2021; CNPS 2021).

Within Alameda and San Joaquin Counties, there are six documented occurrences since 2000, including the 2016 occurrence from Carnegie. There are 21 historical occurrences for this species from Alameda and San Joaquin Counties with the most recent occurrence from 1995 at Tarraville Creek in the Mt. Hamilton Range (Calflora 2021; CNPS 2021). Given that California androsace is not well documented in Alameda and San Joaquin Counties, highly localized and often overlooked, and many occurrences extirpated, conservation of existing populations of this species could be essential for preserving its genetic resources and ensuring its persistence in these Counties (CNPS 2021).

California Groundsel. This species was not observed during the 2021 surveys or the 2016 floristic surveys. There is a documented occurrence from 2004 at Carnegie SVRA. Given that suitable habitat is present at Carnegie and there is a documented occurrence in the past 20 years, California groundsel may still be present at Carnegie. Occurrences more than 20 years ago are considered historical and are a priority to revisit as part of the CNPS Rare Plant Treasure Hunt (RPTH) program (CNPS 2021).

California groundsel is an annual herb in the sunflower family (Asteraceae) that blooms from January to April. This species occurs on drying, alkaline flats and dry, open rocky areas in cismontane woodland and chaparral. It has a CRPR of 2B.2, which means it is on rare or endangered in California but common elsewhere and is considered moderately threatened in California. It is known from at least 53 documented occurrences since 2000 and is widely distributed. It is threatened by development (Calflora 2021; CNPS 2021).

Within Alameda County there are two documented occurrences since 2000, including the 2004 occurrence from Carnegie. There are no documented occurrences since 2000 from San Joaquin County. There are five historical occurrences for this species from Alameda and San Joaquin Counties with the most recent occurrence from a 1998 at a location now located in the boundaries of Carnegie SVRA (Calflora 2021; CNPS 2021). Given that California groundsel is

not well documented in Alameda and San Joaquin Counties, conservation of this species could be essential for preserving its genetic resources and ensuring its persistence in these Counties.

Chaparral Harebell. This species was not observed during the 2021 surveys, but two populations of 47 individuals were observed in the upper Franciscan Loop Trail area during the 2016 floristic surveys, where it was growing on rocky slopes in the *California Sagebrush – Black sage Scrub Alliance* vegetation community that were burned the previous year. It is not known whether this species is a strict fire follower, appearing only immediately after a fire for a few years or the species is always present, but is much more abundant after a fire. During the 2021 surveys both locations were heavily vegetated with Fremont's bush mallow the most dominate species. Regardless, the seed bank is likely still present at both locations and germination likely did not occur due to lack of fire, drier than normal conditions, or competition with other plants.

Chaparral harebell is an annual herb in the bellflower family (Campanulaceae) that blooms from May to June. This species occurs on rocky or talus slopes in open areas of chaparral, often on serpentine substrate. It has a CRPR of 1B.2 (i.e., plants that are rare, threatened, or endangered in California and elsewhere and is moderately threatened in California). It is endemic to California where it is known from at least 23 documented occurrences since 2000, mainly from the Diablo Range. Possibly threatened by mining and vehicles (Calflora 2021; CNPS 2021).

Within Alameda County, there are three documented occurrences since 2000. The 2016 occurrence from Carnegie is not included in the Calflora database. There are no documented occurrences from San Joaquin County. There are 12 historical occurrences for this species from Alameda County with the most recent occurrence from 1995 at Los Mochos Boy Scout Camp, east of Ohlone Regional Wilderness (Calflora 2021; CNPS 2021). Given that chaparral harebell is not well documented in Alameda County, conservation of existing populations of this species could be essential for preserving its genetic resources and ensuring its persistence in the County.

Michael's Rein Orchid. This species was not observed during the 2021 surveys, but a small population of five individuals were observed at one location adjacent to upper Corral Hollow Creek in the southwest portion of Carnegie during the 2016 floristic surveys. Michael's rein orchid likely did not germinate due to drier than normal conditions. However, Michael's rein orchid likely persists at this location as underground bulbs.

Michael's rein orchid is a perennial herb belonging to the orchid family (Orchidaceae) that blooms from April to August. This species occurs in dry sites within foothill woodland, coastal shrub and prairie, closed-cone coniferous and mixed evergreen forests. It has a CRPR of 4.2, which means it is on a watch list for plants of limited distribution or are infrequent throughout a broader area in California and is considered moderately threatened in California. Since it is on a watch list, more current and accurate information is still needed on its distribution and ecology. It is endemic to California where it is known from at least 54 documented occurrences since 2000 and is widely distributed, especially in the Southern Coast Ranges. Threats to this species are

unknown, but likely include development, recreational activities, and competition with non-native plants (Calflora 2021; CNPS 2021).

Within Alameda County, there are two documented occurrences since 2000, including the 2016 occurrence from Carnegie. There are seven historical occurrences for this species from Alameda County with the most recent occurrence from 1999 in Albany Hill Park (Calflora 2021; CNPS 2021). Given that Michael's rein orchid is not well documented in Alameda County, conservation of existing populations of this species could be essential for preserving its genetic resources and ensuring its persistence in the County.

Phlox-leaf Serpentine Bedstraw. This species was not observed during the 2021 surveys, but one population of at least 40 individuals was observed in the southwest portion of Carnegie during the 2016 floristic surveys, where it was growing on rocky substrate in the *Blue Oak Woodland and Forest Alliance* vegetation community. Phlox-leaf serpentine bedstraw likely did not germinate due to drier than normal conditions. However, phlox-leaf bedstraw likely persists at this location as underground root stock.

Phlox-leaf serpentine bedstraw is a perennial herb in the madder family (Rubiaceae) that blooms from April to July. This species occurs in dry, rocky places, often in serpentine soil, in chaparral or open oak/pine woodland. It has a CRPR of 4.2, which means it is on a watch list for plants of limited distribution or are infrequent throughout a broader area in California and is considered moderately threatened in California. Since it is on a watch list, more current and accurate information is still needed on its distribution and ecology. It is endemic to California where it is known from at least 37 documented occurrences since 2000, mainly from the Diablo Range in Alameda, Contra Costa, and Santa Clara Counties, and from the Santa Cruz Mountains in Santa Clara County. Threats have not been reported for this species (Calflora 2021; CNPS 2021).

Within Alameda County there are six documented occurrences since 2000, including the 2016 occurrence from Carnegie. There are no documented occurrences from San Joaquin County (Calflora 2021; CNPS 2021). There are 12 historical occurrences for this species from Alameda County with the most recent occurrence from 1999 in the Ohlone Regional Wilderness. Given that Alameda County is at the northern limits of the documented range for phlox-leaf serpentine bedstraw, conservation of this species could be essential for preserving its genetic resources and ensuring its persistence in the County.

Sylvan Scorzonella. This species was not observed during the 2021 surveys, but one population of at least 30 individuals was observed in the southwest portion of Carnegie during the 2016 floristic surveys, where it was growing in the *Wild Oats and Annual Brome Grasslands Semi-natural Alliance* vegetation community. Also, one individual was observed growing in an open area in the *Blue Oak Woodland and Forest Alliance* vegetation community during an informal survey of the upper Franciscan Loop Trail area in Spring 2019. Sylvan scorzonella likely did not germinate due to drier than normal conditions. However, it is likely still persists at this location in as underground root stock.

Sylvan scorzonella is a perennial herb in the sunflower family (Asteraceae) that blooms from March to June. This species occurs in open areas in chaparral, pinyon and juniper woodland, cismontane woodland, valley and foothill grassland vegetation communities. It has a CRPR of 4.2, which means it is on a watch list for plants of limited distribution or are infrequent throughout a broader area in California and is considered moderately threatened in California. Since it is on a watch list, more current and accurate information is still needed on its distribution and ecology. It is endemic to California where it is known from at least 52 documented occurrences since 2000 is widely distributed. Threatened by wind energy development, grazing, agriculture, vehicles, and recreational activities. Possibly threatened by non-native plants (Calflora 2021; CNPS 2021).

Within Alameda County there is only one documented occurrence since 2000 from Carnegie SVRA. The 2016 occurrence is not included in the Calflora database. There are no documented occurrences from San Joaquin County (Calflora 2021; CNPS 2021). There are three historical occurrences for this species from Alameda County with the most recent occurrence from 1894 in the Berkeley area. Given that Sylvan scorzonella is only known from Carnegie in Alameda County, conservation of this species could be essential for preserving its genetic resources and ensuring its persistence in the County.

3.2 Native Grassland

Approximately 253 acres of native grassland were mapped, mostly in the western portion of Carnegie (Appendix A, Figures 5a to 5e; Appendix C, Photos 11-13). Native grassland vegetation communities were mapped using CDFW's currently accepted list of vegetation alliances and associations (CDFW 2021). Surveys for native grasslands focused on areas where the vegetation cover was dominated by grasses, i.e., areas with minimal cover of trees or shrubs. In general, grasses occurring in the understory of areas with a closed canopy of trees or shrubs were not mapped since these areas would be classified as a woodland or chaparral vegetation community, e.g., *Blue Oak Woodland and Forest Alliance*, *California Sagebrush – Black sage Scrub Alliance*, or *Fremont Cottonwood Forest and Woodland Alliance*.

Two native grassland communities were mapped within Carnegie SVRA, approximately 242 acres of the *Nassella cernua Herbaceous Alliance (Provisional)*, 9.3 acres of the *Poa Secunda Herbaceous Alliance*, and 1.8 acres of the *Nassella pulchra Herbaceous Alliance*. All three alliances are classified as California annual grasslands, i.e., grasslands associated with a Mediterranean climate and where growth occurs during early spring and by summer most plants are dormant.

Nassella cernua Herbaceous Alliance (Provisional). This alliance is a pending addition to the natural community list and is currently classified as an association (*Nassella cernua Association*) of the *Needle grass – Melic Grass Grassland Alliance*. This alliance has been identified by CDFW as "G3 S3", which means that it is rare and threatened throughout its range in California. This alliance was observed in upland areas, including steep rocky slopes, rock

outcrops, and flat to moderately sloping areas, that generally dry by mid to late spring. Nodding needle grass (*Stipa (Nassella) cernua*) was co-dominant with non-native grasses or characteristically present with cover ranging from 2 to 50% within the mapped areas. Non-native grasses observed included foxtail barley (*Hordeum murinum*), foxtail brome, soft brome, slender oat, and ripgut brome (*Bromus diandrus*). Native grasses observed included big squirreltail grass (*Elymus multisetus*), bottlebrush squirreltail (*Elymus elymoides*), June grass (*Koeleria macrantha*), one-sided bluegrass (*Poa secunda*), and small fescue (*Festuca microstachys*). In general, these areas also had a higher cover of native annual and perennial herbs, including annual lupine (*Lupinus bicolor*), blow-wives (*Achyrrachaena mollis*), blue dicks (*Dichelostemma capitatum*), butter 'n' eggs (*Triphysaria eriantha*), California cottonrose (*Logfia filaginoides*), chaparral clarkia (*Clarkia affinis*), Chilean trefoil (*Acmispon wrangelianus*), common soap root, cotton top (*Micropus californicus*), common fiddleneck (*Amsinckia intermedia*), Douglas' microseris (*Microseris douglasii*), fringe pod (*Thysanocarpus curvipes*), Ithuriel's spear (*Triteleia laxa*), mosquito bill (*Primula hendersonii*), poison sanicle (*Sanicula bipinnata*), popcornflower (*Plagiobothrys sp.*), purple sanicle (*Sanicula bipinnatifida*), and yellow mariposa lily (*Calochortus luteus*). Non-native herbs observed included black mustard (*Brassica nigra*) and hairy catsear (*Hypochaeris radicata*). Scattered trees and shrubs were present in some of the grasslands and included California matchweed (*Gutierrezia californica*), California sagebrush (*Artemisia californica*), and blue oak.

***Poa secunda* Herbaceous Alliance.** This alliance is also classified as an association (*Poa secunda ssp. secunda* Association) of the *One-sided Bluegrass – Mat Muhly – Douglas' Sedge Moist Meadow Alliance*. This alliance has been identified by CDFW as "G4? S3", which means that it is rare and threatened throughout its range in California. This alliance was observed in upland areas, including open areas of blue oak woodland, rocky outcrops, and steep to moderately sloping areas. One-sided bluegrass was co-dominant with non-native grasses or characteristically present with cover ranging from 2 to 50% within the mapped areas. Non-native grasses observed included foxtail brome, soft brome, and slender oat. Native grasses observed included June grass and small fescue. In general, these areas also had a higher cover of native annual and perennial herbs, including the species listed above under the *Nassella cernua* Herbaceous Alliance. Other species observed included Longhorn plectritis (*Plectritis macrocera*), common yarrow, and California plantain (*Plantago erecta*). Non-native herbs observed included black mustard and hairy catsear. Scattered trees and shrubs were present in some of the grasslands and included California matchweed, California sagebrush, and blue oak.

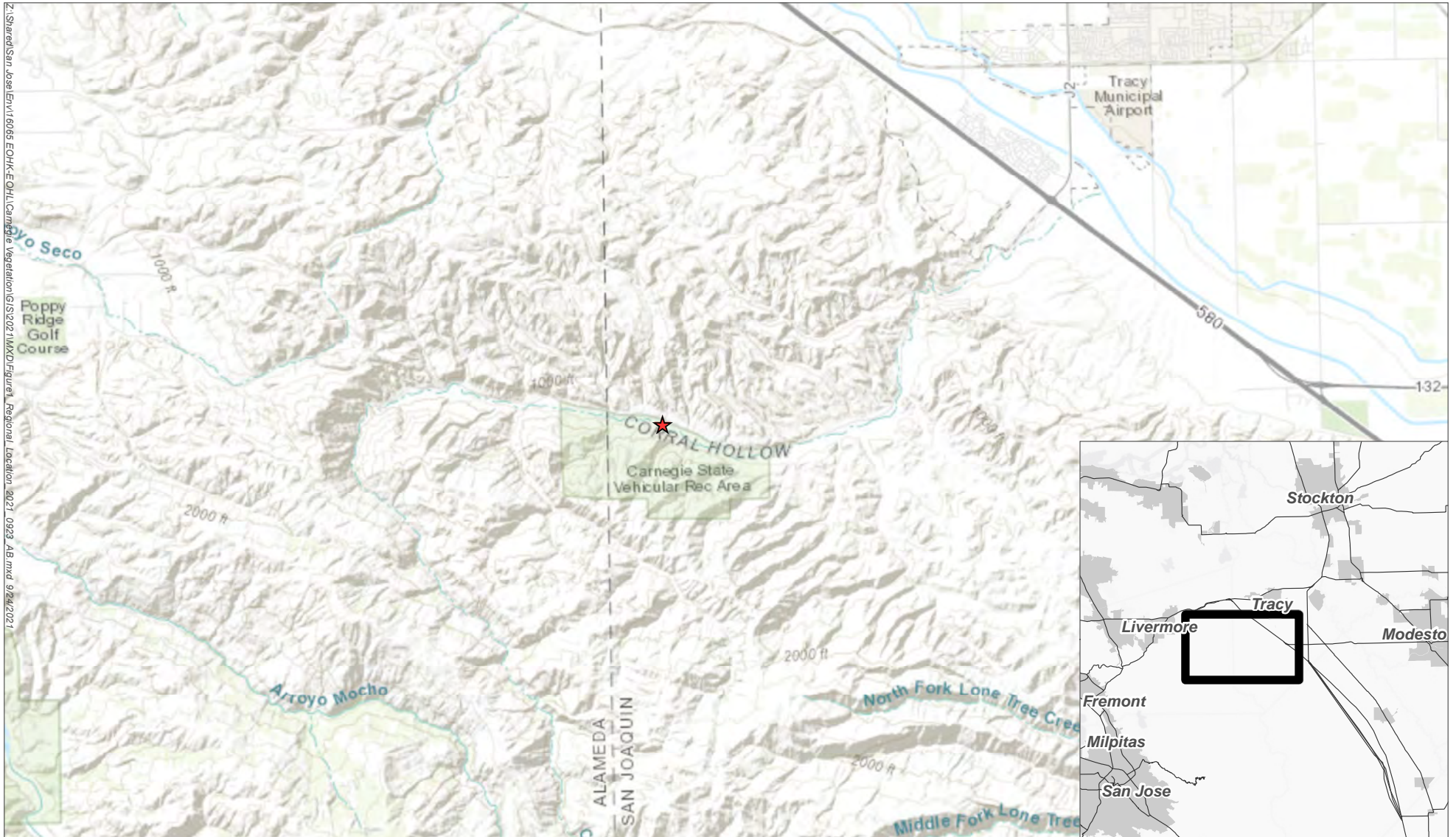
***Nassella pulchra* Herbaceous Alliance.** This alliance is also classified as an association (*Nassella pulchra* Association) of the *Needle grass – Melic Grass Grassland Alliance*. This alliance has been identified by CDFW as "G3 S3", which means that it is rare and threatened throughout its range in California. This alliance was observed in restoration areas where purple needlegrass (*Stipa (Nassella) pulchra*) was likely in a seed mix and was co-dominant with non-native grasses or characteristically present with cover ranging from 2 to 50% within the mapped areas. Non-native grasses observed included foxtail barley, foxtail brome, soft brome, and

slender oat. Native grasses observed included one-sided bluegrass and small fescue. In general, these areas generally had a higher cover of non-native herbs with some native herbs present. Native herbs observed included blue dicks, common fiddleneck, and Ithuriel's spear. Non-native herbs observed included black mustard and hairy catsear. Scattered trees and shrubs were present and included California matchweed, California sagebrush, and blue oak.

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Appendix A Figures

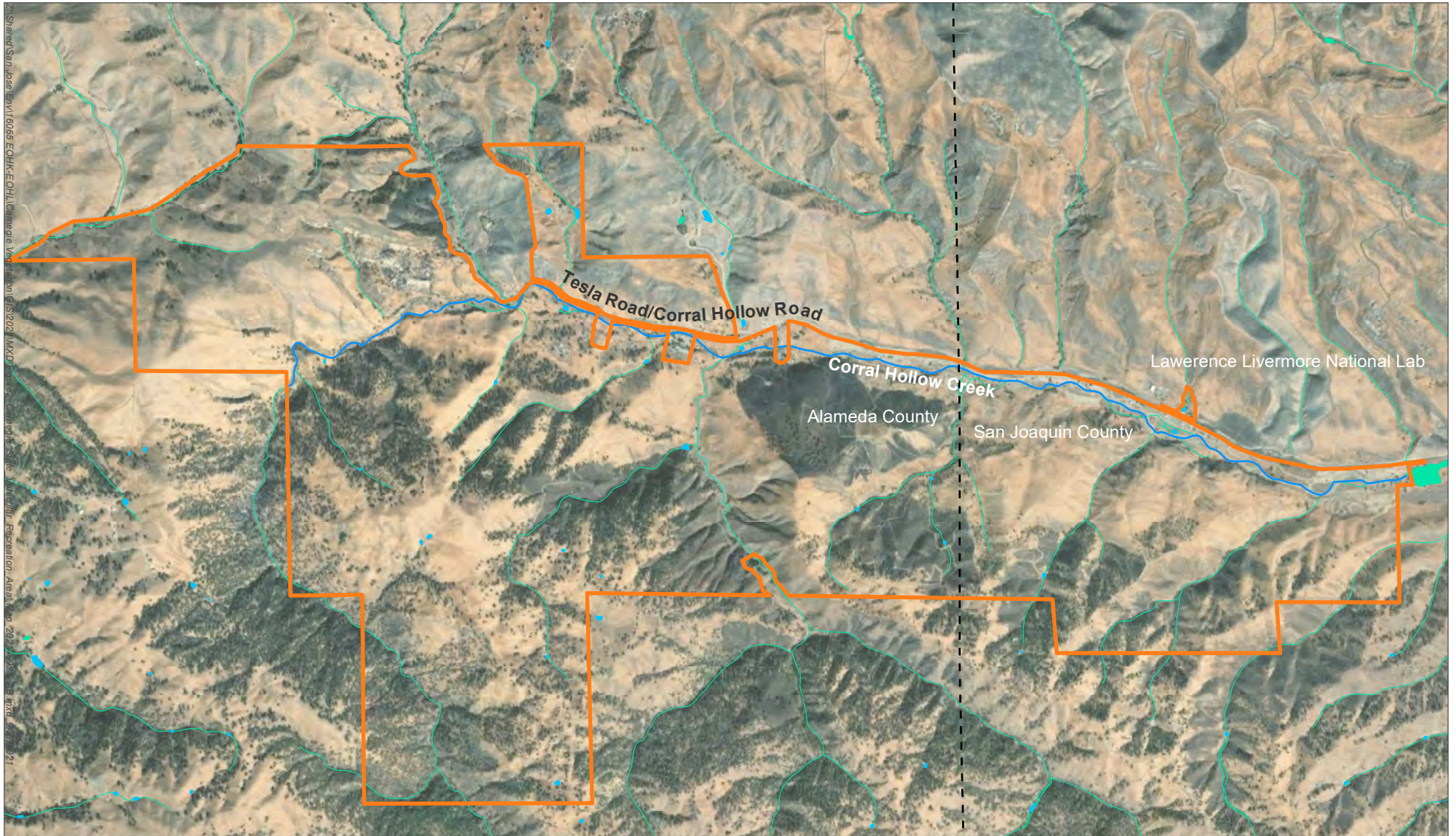


Source: ESRI 2021; Google Earth 2021; CalFlora 2016; MIG 2021



★ Carnegie State Vehicular Recreation Area

Figure 1 Regional Location



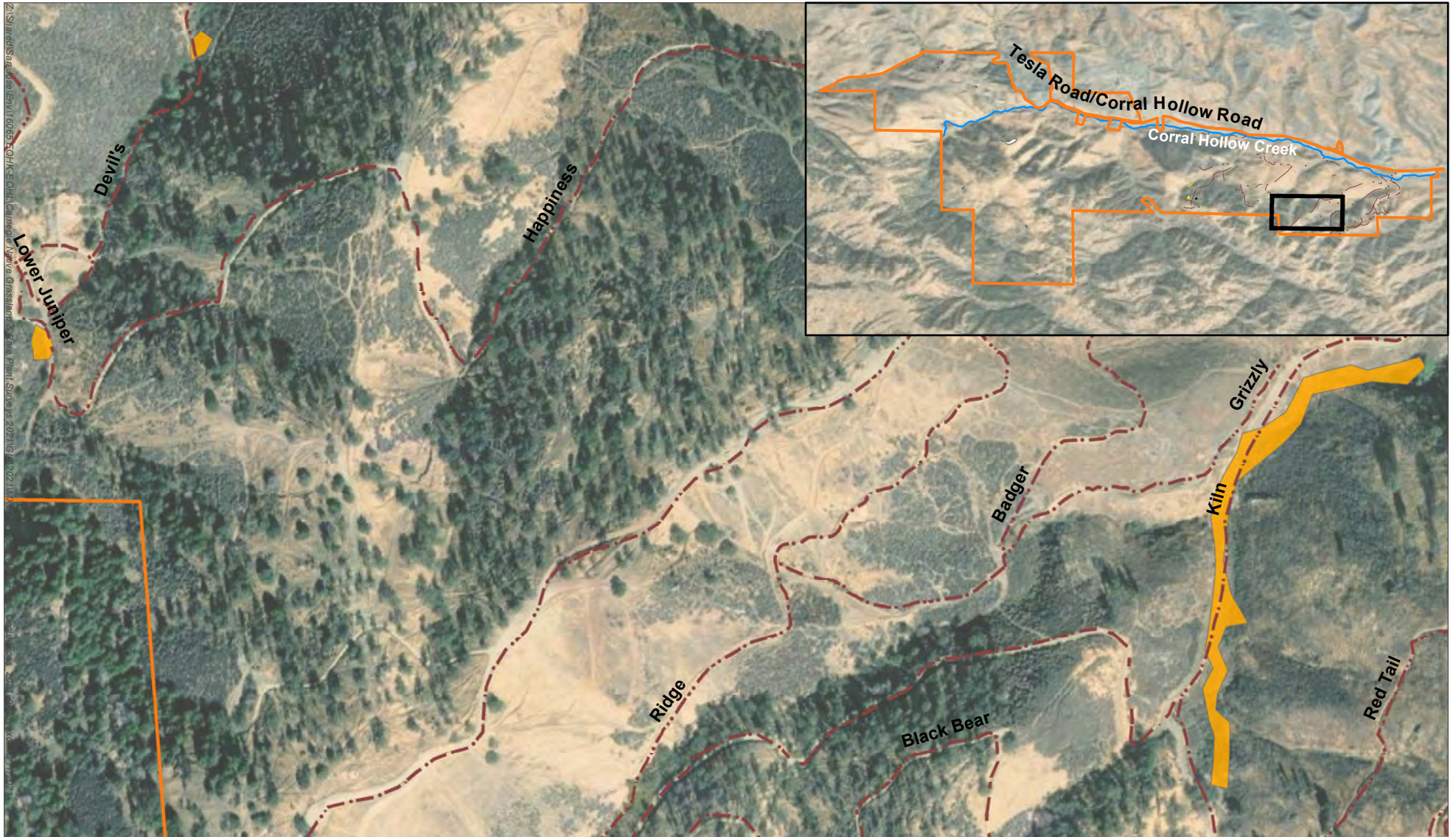
Source: ESRI 2021; Google Earth 2021; MIG 2021

- Carnegie SVRA Boundary
- County Line
- Ephemeral/Intermittent Drainages
- Ponds




Figure 2 Carnegie State Vehicular Recreation Area Map

Carnegie State Vehicular Recreation Area Rare Plant and Native Grassland Survey Report



Source: ESRI 2021; Google Earth 2021; CalFlora 2016; MIG 2021

Rare Plants

 Hospital canyon larkspur

Map Features

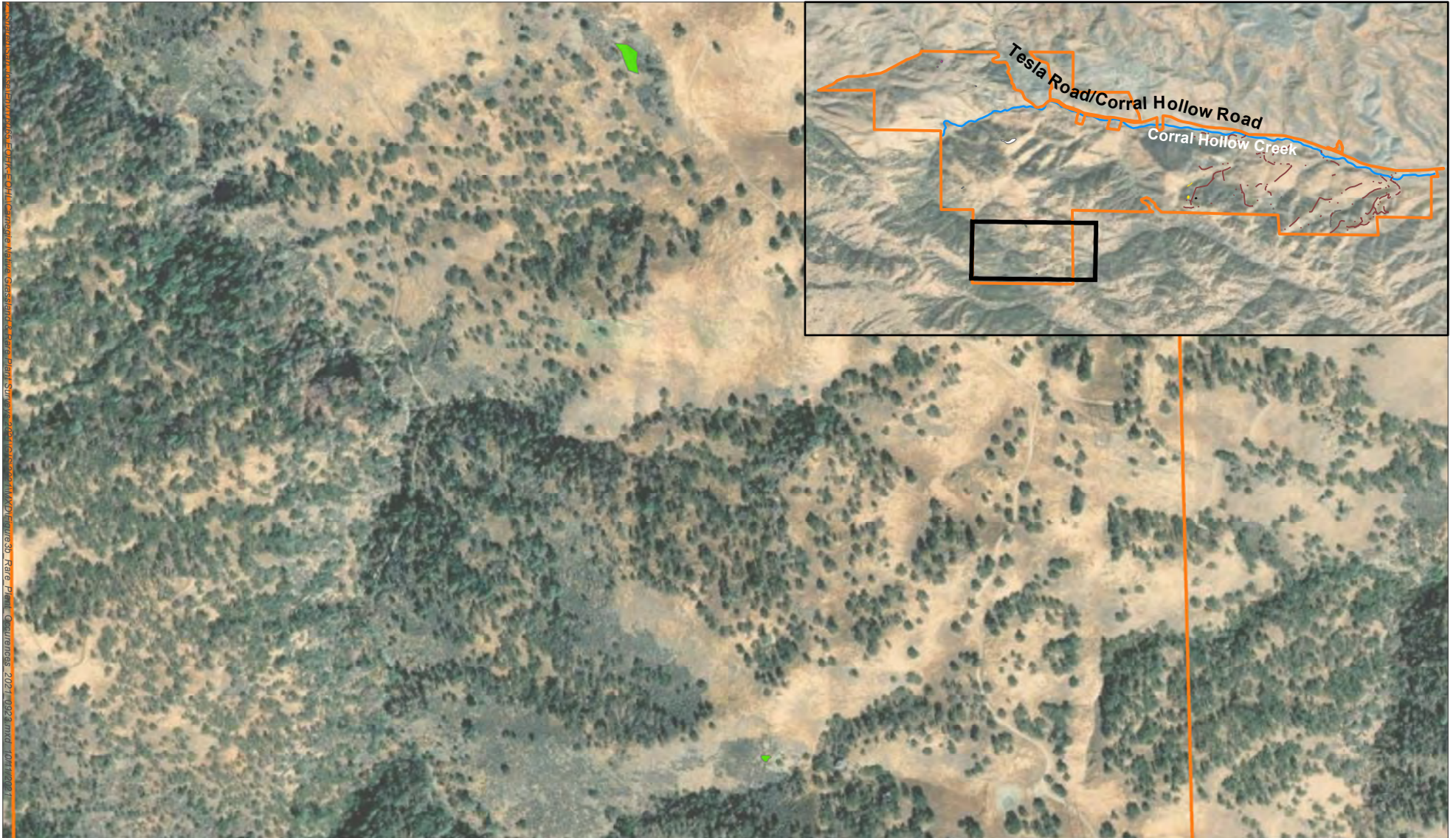
 Carnegie SVRA Boundary

 Trails




Figure 3a Rare Plant Occurrences- 2021 Surveys

Carnegie State Vehicular Recreation Area Rare Plant and Native Grassland Survey Report



Source: ESRI 2021; Google Earth 2021; CalFlora 2016; MIG 2021

Rare Plants

 Santa Clara thornmint

Map Features

 Carnegie SVRA Boundary

 Trails

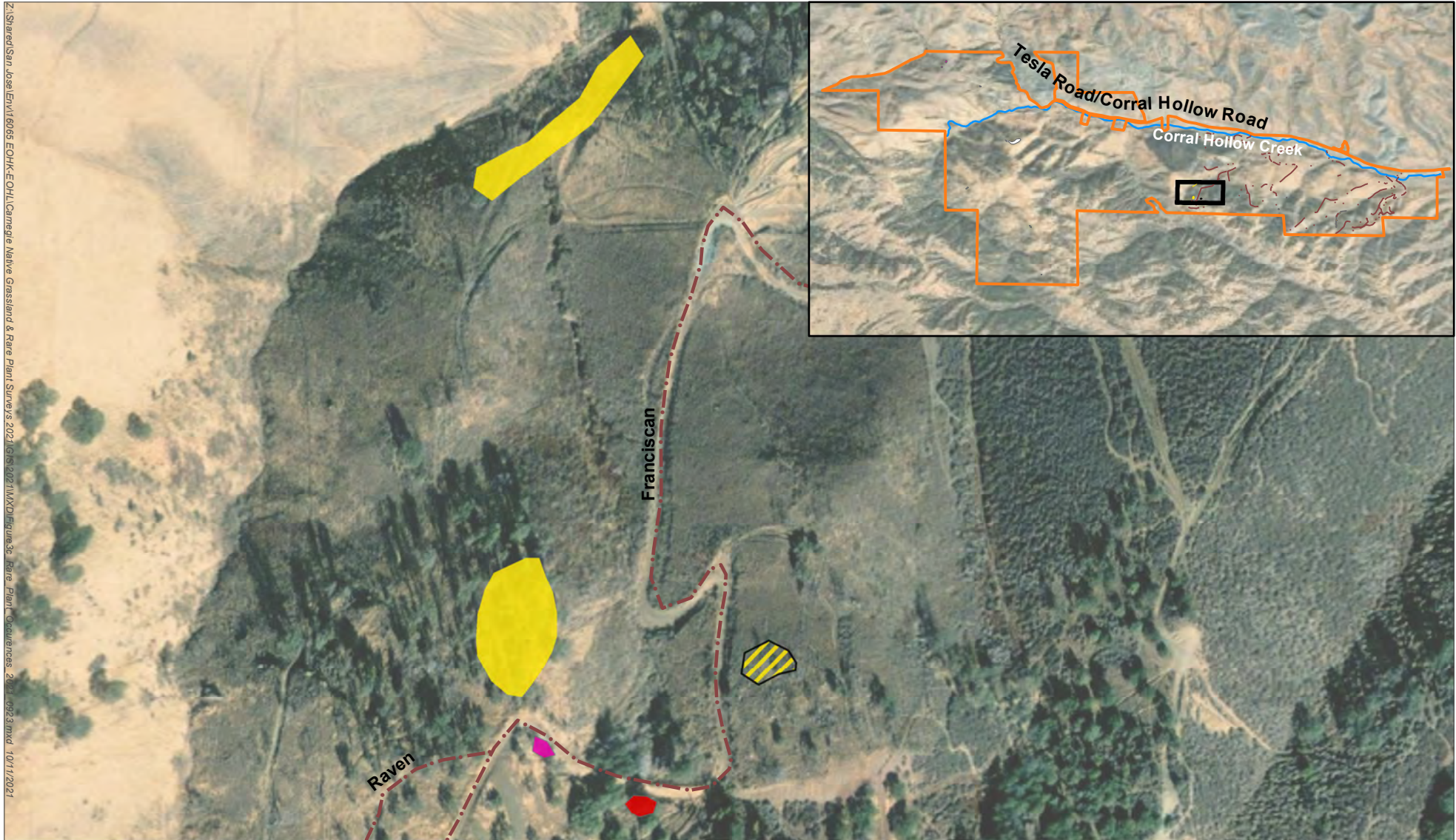


Figure 3b Rare Plant Occurrences- 2021 Surveys

Carnegie State Vehicular Recreation Area Rare Plant and Native Grassland Survey Report



Z:\Shared\San_Jose\Envr\16065 EOHK-EOHL\Carnegie Native Grassland & Rare Plant Surveys 2021\GIS\2021\MXD\Figure 3c Rare Plant Occurrences 2021_0923.mxd 10/11/2021



Source: ESRI 2021; Google Earth 2021; CalFlora 2016; MIG 2021

Rare Plants

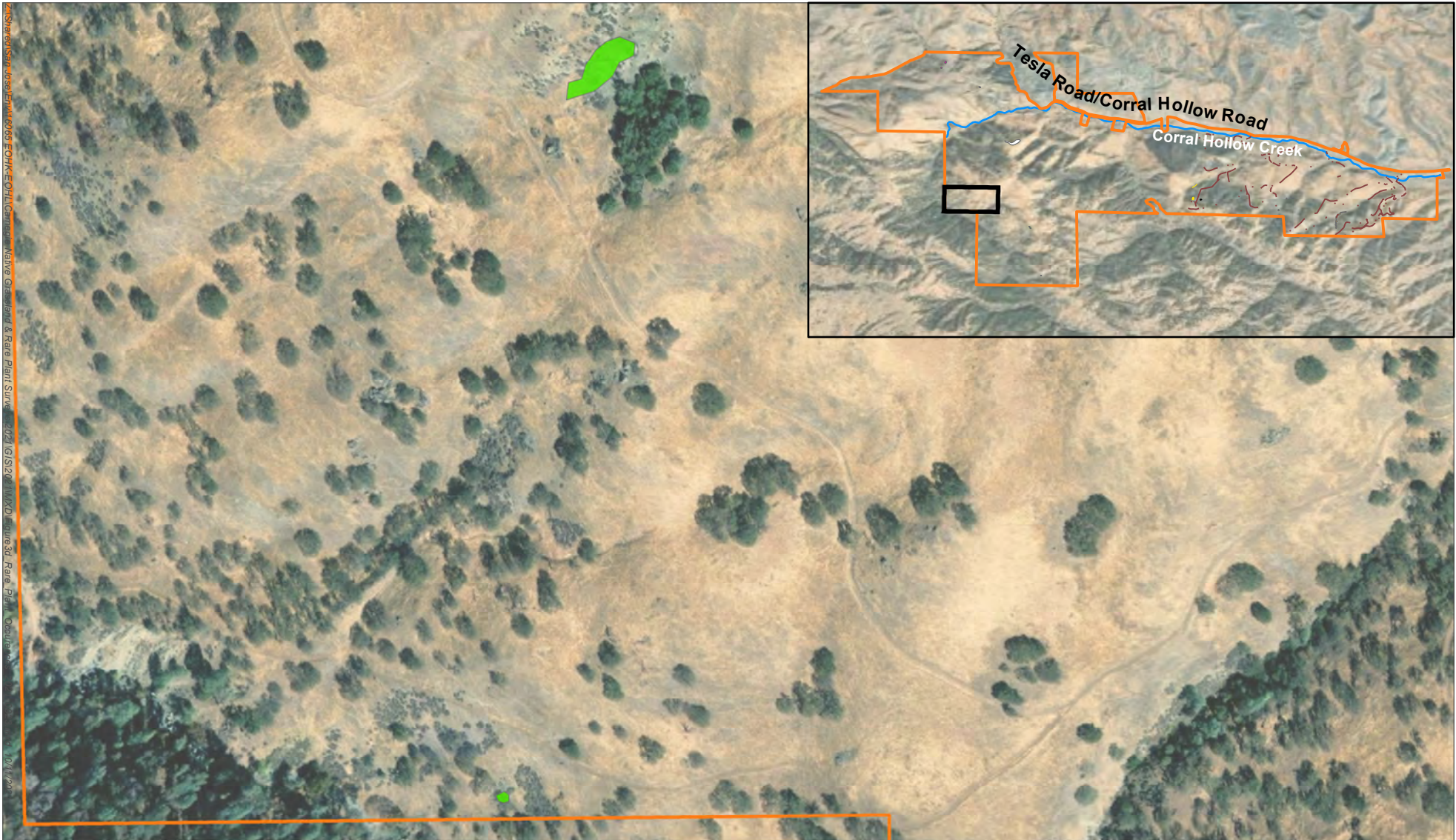
- Jepson's wooly sunflower
- Jepson's wooly sunflower & chaparral harebell
- Stinkbells
- Sylvan scorzonella

Map Features

- Carnegie SVRA Boundary
- Trails




Figure 3c Rare Plant Occurrences- 2021 Surveys



Source: ESRI 2021; Google Earth 2021; CalFlora 2016; MIG 2021

Rare Plants

 Santa Clara thornmint

Map Features

 Carnegie SVRA Boundary

 Trails

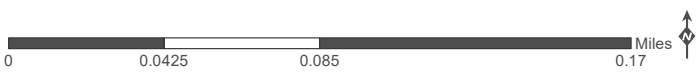
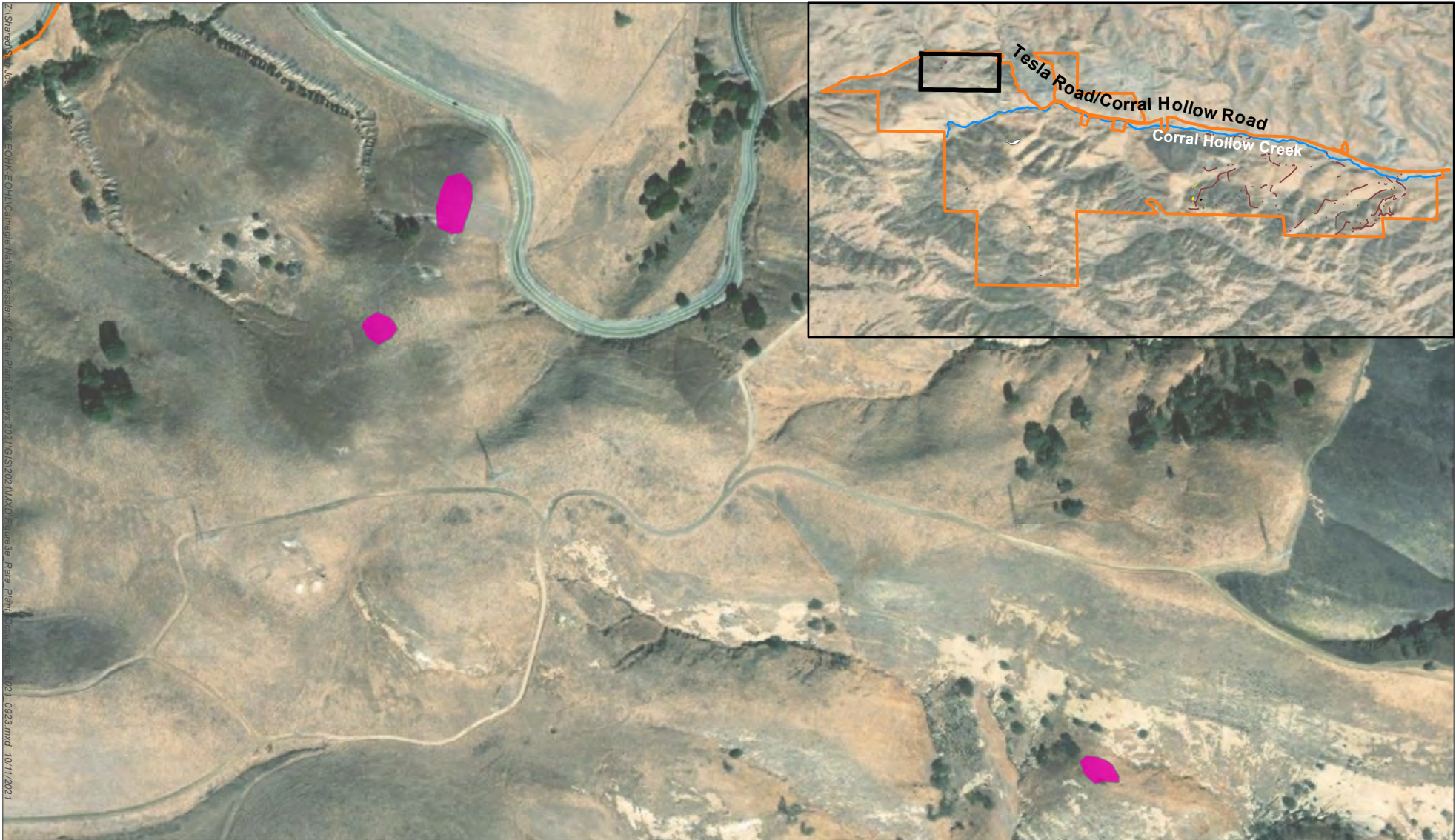


Figure 3d Rare Plant Occurrences- 2021 Surveys

Carnegie State Vehicular Recreation Area Rare Plant and Native Grassland Survey Report





Source: ESRI 2021; Google Earth 2021; CalFlora 2016; MIG 2021

Rare Plants

 Stinkbells

Map Features

 Carnegie SVRA Boundary

 Trails



Figure 3e Rare Plant Occurrences- 2021 Surveys

Carnegie State Vehicular Recreation Area Rare Plant and Native Grassland Survey Report



Source: ESRI 2021; Google Earth 2021; CalFlora 2016; MIG 2021

Rare Plants

□ Big tarplant

Map Features

▭ Carnegie SVRA Boundary

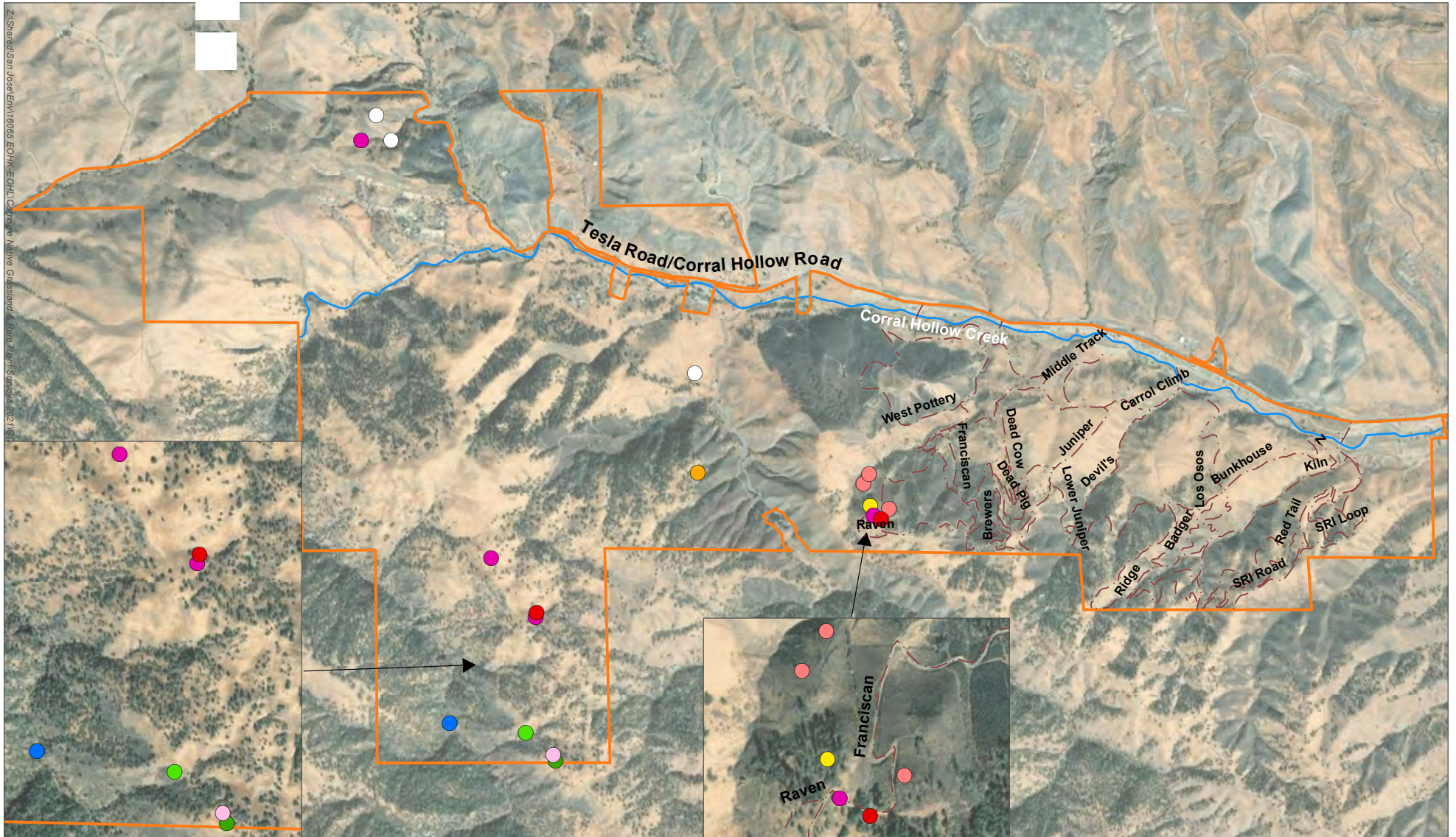
- - - Trails



Figure 3f Rare Plant Occurrences- 2021 Surveys

Carnegie State Vehicular Recreation Area Rare Plant and Native Grassland Survey Report





Source: ESRI 2021; Google Earth 2021; CalFlora 2016; MIG 2021

Rare Plants

- Big tarweed
- California androsace
- Chaparral harebell
- Hospital canyon larkspur
- Jepson's woolly sunflower
- Michael's rein orchid
- Phlox-leaf serpentine bedstraw
- Santa Clara thornmint
- Stinkbells
- Sylvan scorzonella

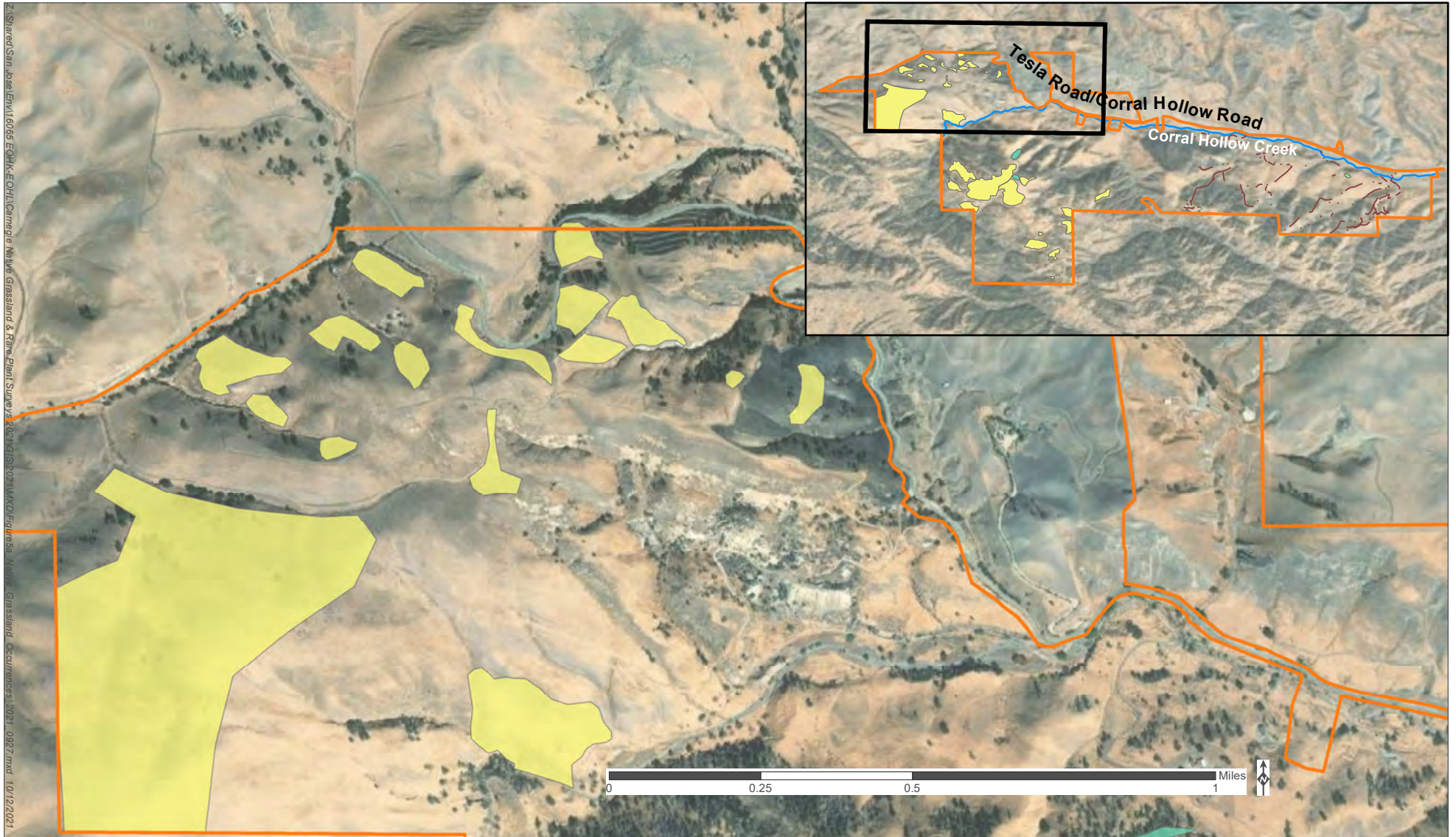
Map Features

- ▭ Carnegie SVRA Boundary
- Trails



Figure 4 Rare Plant Occurrences - Pre-2021 Surveys

Carnegie State Vehicular Recreation Area Rare Plant and Native Grassland Survey Report



Source: ESRI 2021; MIG 2021

Native Grassland Alliance

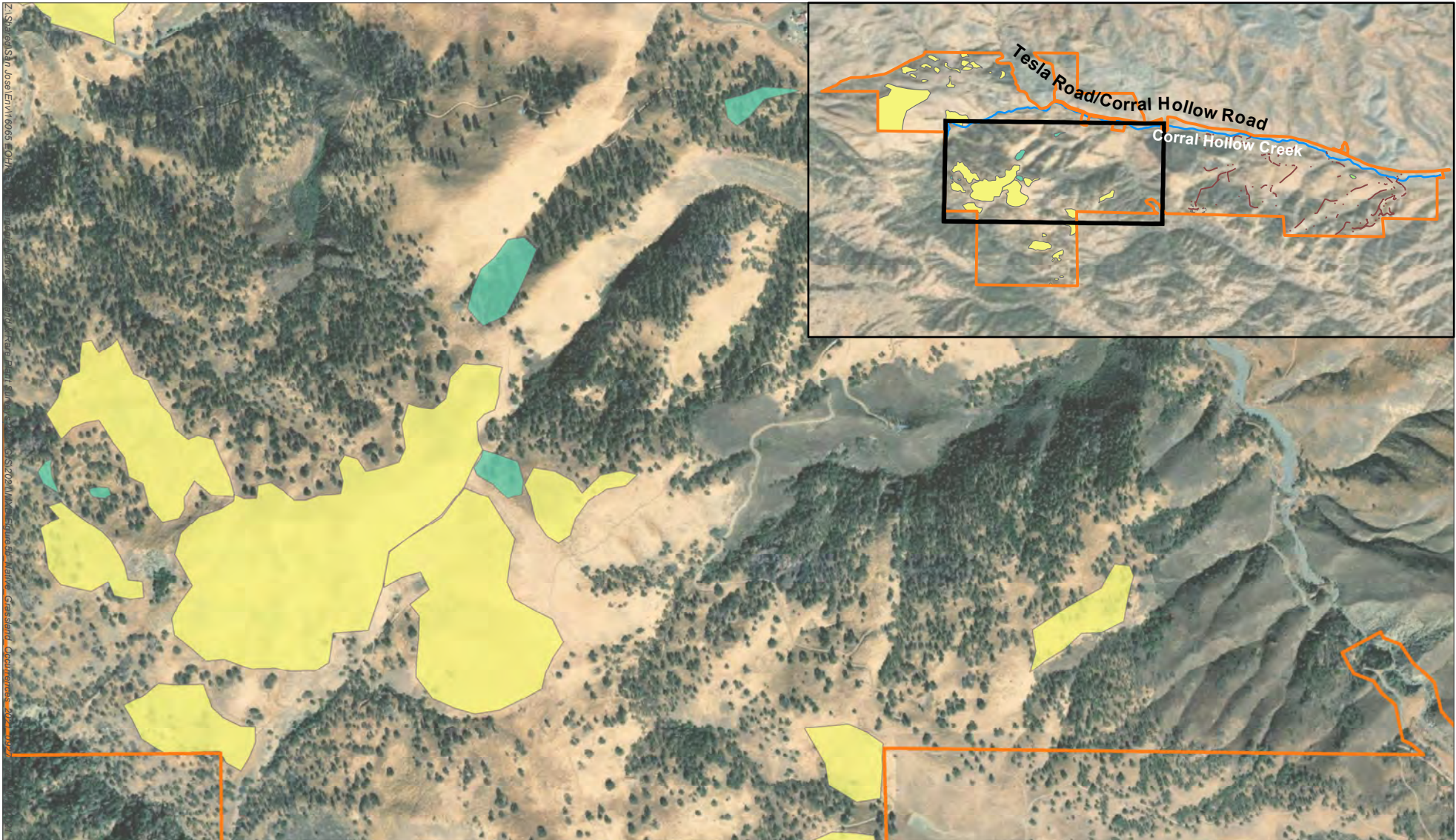
Nasella cernua Herbaceous Alliance

Map Features

Carnegie SVRA Boundary

Trails

Figure 5a Native Grassland Occurrences



Source: ESRI 2021; MIG 2021

Native Grassland Alliance

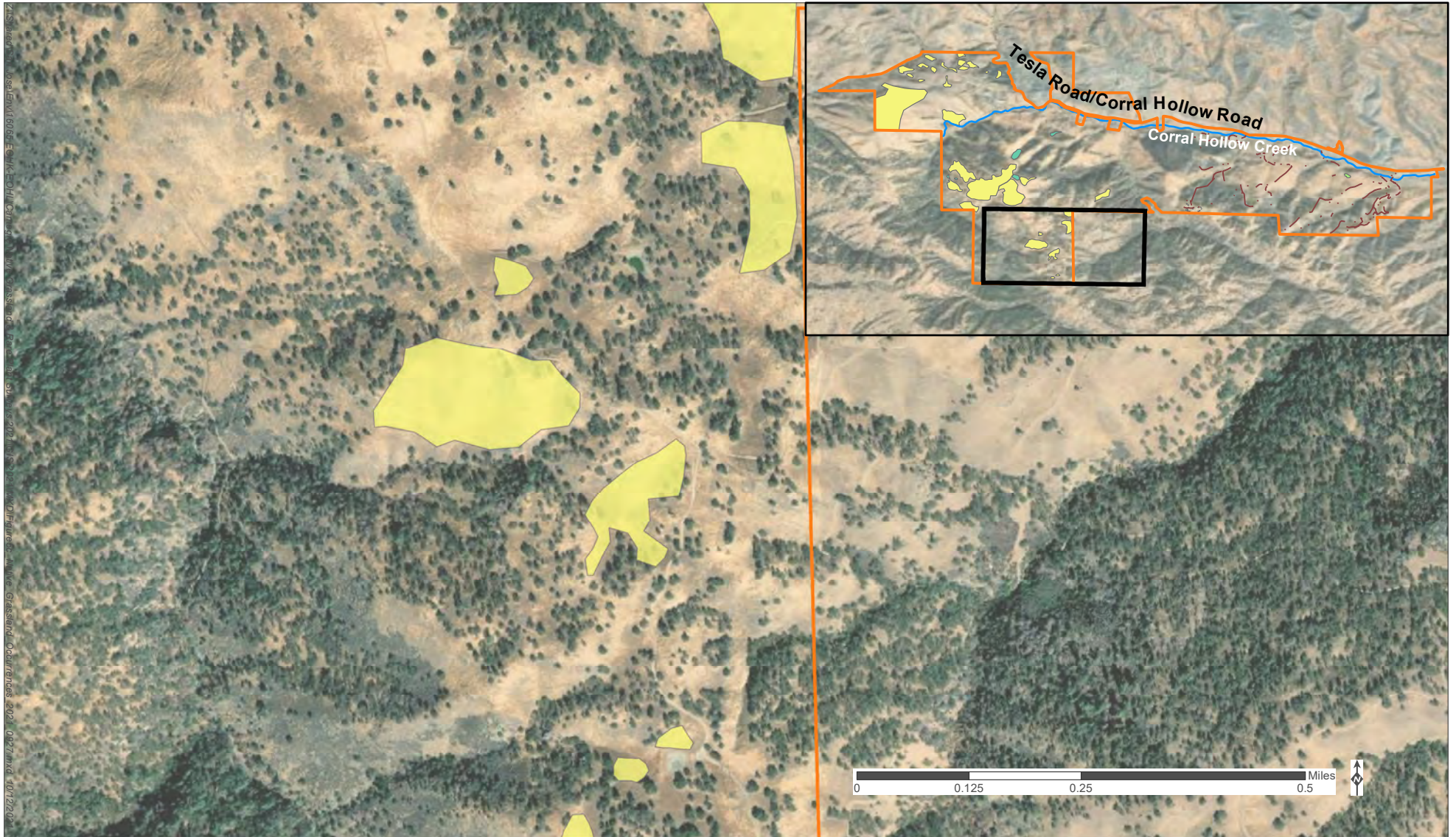
- Nasella cernua* Herbaceous Alliance
- Poa Secunda* Herbaceous Alliance

Map Features

- Carnegie SVRA Boundary
- Trails



Figure 5b Native Grassland Occurrences



Source: ESRI 2021; MIG 2021

Native Grassland Alliance

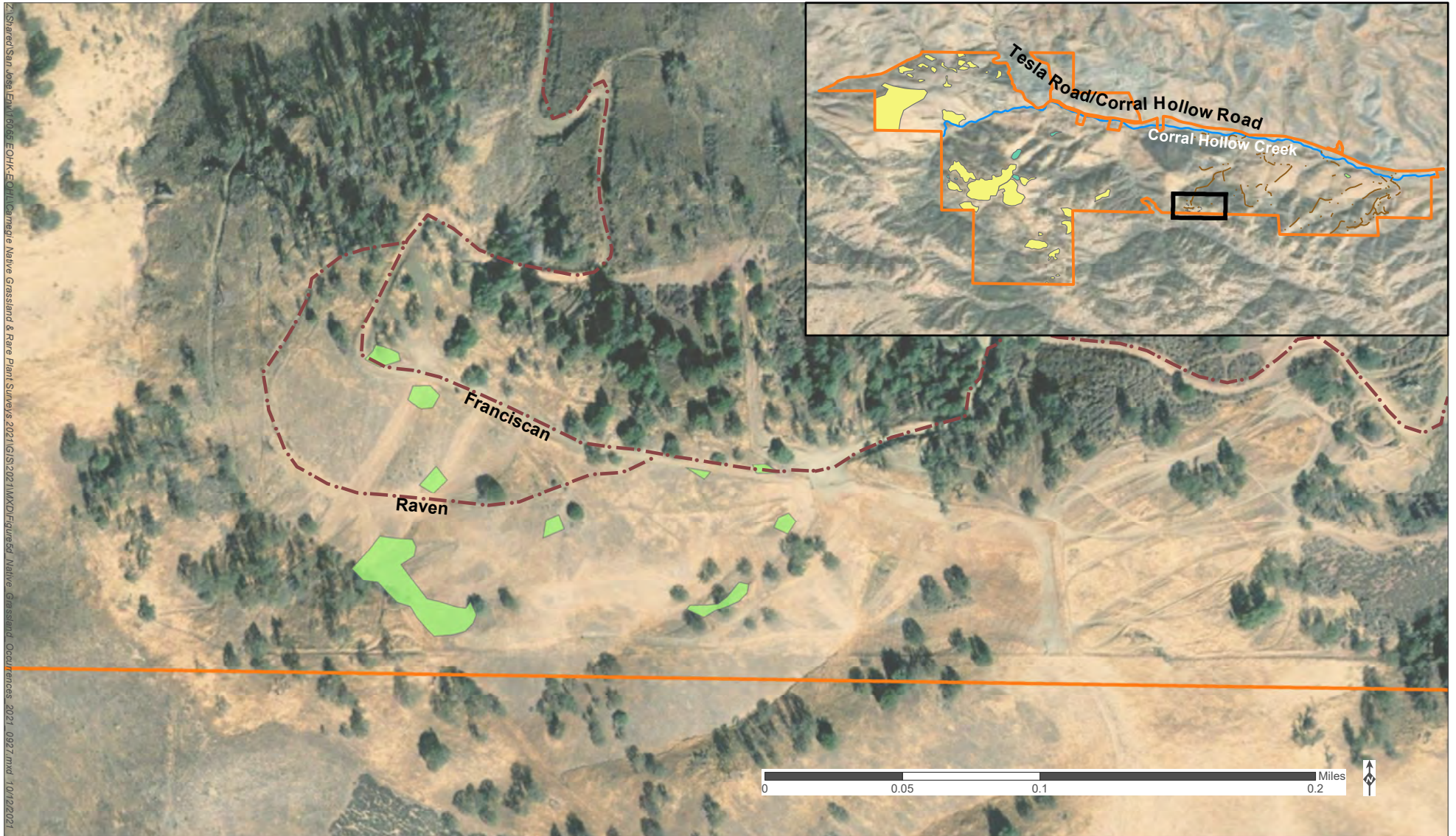
Nasella cernua Herbaceous Alliance

Map Features

Carnegie SVRA Boundary

Trails

Figure 5c Native Grassland Occurrences



Source: ESRI 2021; MIG 2021

Native Grassland Alliance

Nasella pulchra Herbaceous Alliance

Map Features

Carnegie SVRA Boundary

Trails

Figure 5d Native Grassland Occurrences



Source: ESRI 2021; MIG 2021

Native Grassland Alliance

Nasella pulchra Herbaceous Alliance

Map Features

Carnegie SVRA Boundary

Trails



Figure 5e Native Grassland Occurrences

Carnegie State Vehicular Recreation Area Rare Plant and Native Grassland Survey Report

Appendix B Identification of Target Species Memo



To: Tara Kerss, Environmental Scientist, California State Parks
From: David Gallagher, Senior Biologist, MIG
Date: February 25, 2021
Re: Carnegie State Vehicular Recreation Area (SVRA) 2021 Special-status Plant and Native Grassland Surveys

Dear Ms. Kerss,

MIG is pleased to provide assistance with special-status plant surveys, native grassland surveys, and plant ID training at Carnegie SVRA. Carnegie SVRA is known to support populations of at least 10 special-status plants. Additionally, there is also the potential for an additional eight special-status species to occur at Carnegie SVRA, based on the presence of suitable habitat and historical occurrence data (Figure 1 and Table 1).

Carnegie SVRA is also known to support populations of at least 16 native grass species. There is also the potential for an additional three native grass species to occur at Carnegie SVRA, based on the presence of suitable habitat and historical occurrence data (Table 2).

Special-status Plant Surveys

Survey Methodology. Surveys for special-status plants will incorporate two methods: (1) surveys will be conducted at documented locations for each special-status species. Survey locations will include records from Calflora and the 2016 floristic survey (Figure 1); (2) surveys will be conducted in areas with suitable microhabitats for each species, as informed by aerial imagery and soil maps (Figure 1 and Table 1). The majority of 2016 observations occurred on three soil series: VaE2, RoF, and AmE2.

- **VaE2.** Vallecitos rocky loam, 30 to 45 percent slopes, eroded. This soil occurs in large bodies in moderately steep to steep mountainous terrain and is formed from hard shale and sandstone. Rocky outcrops are numerous. **Special-status species:** California androsace, Hospital Canyon larkspur, Jepson's woolly sunflower, Phlox-leaf serpentine bedstraw, stinkbells, and Sylvan scorzonella.
- **RoF.** Rock land. This land type occurs throughout the uplands and consists of very steep, rocky areas. **Special-status species:** Big tarplant, Chaparral harebell, Michael's rein orchid, Santa Clara thornmint, and stinkbells. Also, California groundsel and diamond-petaled poppy.
- **AmE2.** Altamont clay, moderately deep, 30 to 45 percent slopes, eroded. This soil occurs on steep, smooth, well-rounded hills and is formed from interbedded shale and fine-grained sandstone. **Special-status species:** Big tarplant.

During the appropriate bloom period, each occurrence location will be surveyed as well as circular 100-meter buffer, if possible. After these locations are surveyed, the survey teams will

then survey suitable microhabitats within the three soil types listed above. Microhabitats include rocky outcrops, scree fields, and disturbed areas. Potential microhabitats will be identified on aerial imagery as well as meandering transects.

Survey Periods. Because of the number of special-status plants known to occur at Carnegie SVRA, the potential for additional special-status plant to occur, and the wide range of bloom periods, it is recommended that surveys take place once a month for approximately one week from March to August for a total of six survey periods. Two survey teams of two are recommended for each of the survey periods. Each survey team will include an experienced ecologist/botanist with knowledge of the special-status plants that occur in the region.

Data Collection and Reporting. Geospatial data will be collected using a tablet with an Arrow 100 submeter GPS receiver and a geo-spatial mobile-device application. Also, voucher specimens may be collected to aid in species identification. With the approval of Parks, voucher specimens may also be submitted to an herbarium if the special-status species is under-represented in herbarium collections or to document a range extension for that species. Additionally, California Natural Diversity Database (CNDDDB) forms for each special-status plant species occurrence will be submitted to California Department of Fish and Wildlife (CDFW) also with approval from Parks. We will also upload special-status plant occurrences to Calflora, also with approval from Parks.

Native Grassland Surveys

Survey Methodology. Since native grassland generally occurs in fragmented patches within the annual grassland at Carnegie SVRA, surveys will be conducted by walking parallel transects through existing grassland habitat, as identified in aerial imagery and the 2012 vegetation map of Carnegie SVRA. The width of the transects will range from 10 to 30 feet, depending on the terrain and vegetation.

Survey Periods. Because of the number of native grasses known to occur at Carnegie SVRA, the potential for additional grass species to occur, and the wide range of bloom periods, it is recommended that surveys take place once a month for approximately one week from March to July for a total of five survey periods. Two survey teams of five are recommended for each of the survey periods. Each survey team will include an experienced ecologist/botanist with knowledge of grass species that occur in the region.

Data Collection and Reporting. Geospatial data will be collected using a tablet with an Arrow 100 submeter GPS receiver and a geo-spatial mobile-device application. Also, voucher specimens may be collected to aid in species identification. With the approval of Parks, voucher specimens may also be submitted to an herbarium if the grass is under-represented in herbarium collections or to document a range extension for that species. We will also upload species occurrences to Calflora, also with approval from Parks.

Training. As part of the grassland surveys, MIG staff will train Parks staff on field identification of native and non-native grasses observed at Carnegie SVRA. The training will be hands-on and take place during the surveys. MIG will provide a handout that will aid in field identification of grass genera.

Carnegie SVRA
 2021 Special-status Plant and Native Grassland Surveys
 February 25, 2021

Table 1. Special-status Plants at Carnegie SVRA.

Species Name	Status	Habitat	Occurrence Status
Santa Clara thornmint (<i>Acanthomintha lanceolata</i>)	4.2	Rocky areas in chaparral, cismontane woodland. Blooms March-June	Present
Douglas' fiddleneck (<i>Amsinckia douglasiana</i>)	4.2	Dry shale areas in grassland and cismontane woodland. Blooms March-May	Not Observed
Large-flowered fiddleneck (<i>Amsinckia grandiflora</i>)	FE, SE, 1B.1	Sandy rocky areas in grassland and cismontane woodland. Blooms April-May	Not Observed
California androsace (<i>Androsace elongata</i> ssp. <i>acuta</i>)	4.2	Slopes in cismontane woodland, grassland, and chaparral. Often in areas with pebbly substrate. Blooms March-June	Present
Big tarplant (<i>Blepharizonia plumosa</i>)	1B.1	Slopes and disturbed areas on clay in grassland. Blooms July-October	Present
Chaparral harebell (<i>Campanula exigua</i>)	1B.2	Rocky areas in chaparral; post-fire follower. Usually considered a serpentine endemic. Blooms May-June	Present
Lemmon's jewelflower (<i>Caulanthus lemmonii</i>)	1B.2	Pinyon-juniper woodlands and grassland Blooms March-May	Not Observed
Santa Clara red ribbons (<i>Clarkia concinna</i> ssp. <i>automixa</i>)	4.3	Shaded mesic areas in cismontane woodland. Blooms May-June	Not Observed
Hospital Canyon larkspur (<i>Delphinium californicum</i> ssp. <i>interius</i>)	1B.2	Mesic, open areas on slopes in chaparral and cismontane woodland. Blooms April-June	Present
Diamond-petaled California poppy (<i>Eschscholzia rhombipetala</i>)	1B.1	Alkaline clay areas in grassland. Blooms March-April	Not Observed. There is a record from 1935.
Jepson's woolly sunflower (<i>Eriophyllum jepsonii</i>)	4.3	Chaparral and cismontane woodland. Considered a serpentine endemic. Blooms April-June	Present
Stinkbells (<i>Fritillaria agrestis</i>)	4.2	Open areas on clay in chaparral, cismontane woodland, and grassland. Blooms March-June	Present
Phlox-leaf serpentine bedstraw (<i>Galium andrewsii</i> ssp. <i>gatense</i>)	4.2	Rocky areas in cismontane woodland and chaparral. Considered a serpentine endemic. Blooms April-July	Present
Diablo helianthella (<i>Helianthella castanea</i>)	1B.2	Rocky, partially shaded areas in rich soil in cismontane woodland, riparian woodland, and grassland. Blooms March-June	Not Observed
Mt. Hamilton coreopsis (<i>Leptosyne hamiltonii</i>)	1B.2	Rocky areas on exposed slopes in cismontane woodland. Blooms March-May	Not Observed
Sylvan scorzonella (<i>Microseris sylvatica</i>)	4.2	Open areas in cismontane woodland and grassland. Blooms March-June	Present
Michal's rein orchid (<i>Piperia michaelii</i>)	4.2	Shady areas in cismontane woodland; riparian woodland Blooms April-August	Present

Carnegie SVRA
 2021 Special-status Plant and Native Grassland Surveys
 February 25, 2021

Species Name	Status	Habitat	Occurrence Status
California groundsel (<i>Senecio aphanactis</i>)	2.2	Drying, alkaline flats in cismontane woodland. Blooms January-April	Not Observed. There is a record from 1998 and 2004.

Table 2. Native Grasses at Carnegie SVRA.

Species Name	Occurrence Status	Habitat
California brome (<i>Bromus carinatus</i> var. <i>carinatus</i>)	Observed in 2004	Grasslands within open wooded habitats. Blooms February-March
Annual hairgrass (<i>Deschampsia danthonioides</i>)	Present	Moist areas; wetlands. Blooms April-May
Saltgrass (<i>Distichlis spicata</i>)	Present	Wet alkaline flats Blooms July-August
Squirrel tail grass (<i>Elymus elymoides</i> var. <i>elymoides</i>)	Present	Open areas in grassland. Blooms April-May
Blue wildrye (<i>Elymus glaucus</i> ssp. <i>glaucus</i>)	Present	Partially shaded areas in woodland. Blooms May-July
Big squirrel tail grass (<i>Elymus multisetus</i>)	Present	Open areas in grassland. Blooms May-July
Alkali rye (<i>Elymus triticoides</i>)	Present	Mesic alkaline areas. Blooms May-June
Blue bunchgrass (<i>Festuca idahoensis</i>)	Observed in 2004	Open mesic areas in grassland. Blooms June-July
Annual fescue (<i>Festuca microstachys</i>)	Present	Open areas in grassland. Blooms April-June
Sixweeks fescue (<i>Festuca octoflora</i>)	Present	Open areas in grassland; fire-follower. Blooms May-June
Meadow barley (<i>Hordeum brachyantherum</i> ssp. <i>brachyantherum</i>)	Present	Open mesic areas; wetlands. Blooms June-July
June grass (<i>Koeleria macrantha</i>)	Present	Open areas in grassland. Blooms May-June
California melicgrass (<i>Melica californica</i>)	Present	Open areas on slopes in woodland area. Blooms June-August
Torrey melic (<i>Melica torreyana</i>)	Present	Open areas on slopes in woodland areas. Blooms May-July
Curved sicklegrass (<i>Parapholis incurva</i>)	Present	Wet alkaline areas; wetlands. Blooms April-June
One sided blue grass (<i>Poa secunda</i> ssp. <i>secunda</i>)	Present	Rocky slopes; fire-follower. Blooms May-June
Scribner's grass (<i>Scribneria bolanderi</i>)	Observed in 2004	Open areas in grassland. Blooms March-June
Nodding needlegrass (<i>Stipa cernua</i>)	Present	Open areas in grassland. Blooms February-July
Purple needlegrass (<i>Stipa pulchra</i>)	Present	Open areas in grassland. Blooms March-May

Appendix C Photographs



Photo 1. Big tarweed was observed on a north-facing slope in California annual grassland. Photo taken on 15 September 2021.



Photo 2. Photo of typical habitat for big tarweed in California annual grassland. The grassland was dominated by non-native grasses. Photo taken on 15 September 2021.



Photo 3. Hospital Canyon larkspur was observed in Carrol and Kiln Canyons. Photo taken in Kiln Canyon on 22 April 2021.



Photo 4. Hospital Canyon larkspur was observed growing on the banks of the main drainages that flow through Kiln and Carrol Canyons. Photo of typical habitat for Hospital Canyon larkspur, taken on 22 April 2021 in Kiln Canyon.



Photo 5. Jepson's woolly sunflower was observed growing in the upper Franciscan Loop Trail area on 26 April 2021.



Photo 6. Jepson's woolly sunflower was observed growing in open grassy areas within *California Sagebrush – Black sage Scrub Alliance* and *Blue Oak Woodland and Forest Alliance*. Photo of typical habitat for Jepson's woolly sunflower in the *California Sagebrush – Black sage Scrub Alliance*, taken on 22 April 2021.



Photo 7. Santa Clara thornmint was observed growing in open, rocky areas. Photo taken on 21 April 2021.



Photo 8. Santa Clara thornmint was observed growing on steep slopes composed of decomposing hard shale substrate in the *California Sagebrush – Black sage Scrub Alliance*. Photo of typical habitat for Santa Clara thornmint, taken on 24 March 2021.



Photo 9. Stinkbells were observed growing in open grassland. Photo taken on 22 March 2021.



Photo 10. Stinkbells were observed growing on moderate to gentle, mostly north-facing slopes in the *Wild Oats and Annual Brome Grasslands Semi-natural Alliance* and the *Nassella cernua Herbaceous Alliance* (native grassland). Photo of typical habitat for stinkbells in the *Wild Oats and Annual Brome Grasslands Semi-natural Alliance* vegetation community, taken on 22 March 2021.



Photo 11. *Poa secunda* and *Stipa (Nassella) cernua* bunch grasses within the *Nassella cernua* *Herbaceous Alliance* vegetation community. Photo taken on 2 April 2021.



Photo 12. *Nassella cernua* Herbaceous Alliance grassland vegetation community within Carnegie SVRA. Photo taken on 24 March 2021.



Photo 13. Big squirreltail grass (*Elymus multisetus*), a native perennial bunchgrass, was observed in the *Nassella cernua* Herbaceous Alliance grassland vegetation community. Photo taken on 20 May 2021.

Appendix D List of Plants Observed

Family	Species	Common Name
Adoxaceae	<i>Sambucus nigra</i> ssp. <i>caerulea</i>	blue elderberry, Mexican elderberry
Agavaceae	<i>Chlorogalum pomeridianum</i> var. <i>pomeridianum</i>	soap plant, amole
Alliaceae	<i>Allium crispum</i>	crinkled onion
Alliaceae	<i>Allium serra</i>	jeweled/serrated onion
Amaranthaceae	<i>Amaranthus albus</i> *	tumbleweed, white amaranth
Amaranthaceae	<i>Amaranthus blitoides</i>	prostrate pigweed
Anacardiaceae	<i>Schinus molle</i> *	Peruvian pepper tree
Anacardiaceae	<i>Toxicodendron diversilobum</i>	poison oak
Apiaceae	<i>Anthriscus caucalis</i> *	bur-chervil
Apiaceae	<i>Daucus pusillus</i>	rattlesnake weed
Apiaceae	<i>Foeniculum vulgare</i> *	sweet fennel
Apiaceae	<i>Lomatium californicum</i>	California lomatium, celery weed
Apiaceae	<i>Lomatium macrocarpum</i>	bigseed biscuitroot, large-fruited lomatium
Apiaceae	<i>Lomatium utriculatum</i>	common lomatium
Apiaceae	<i>Perideridia californica</i>	California yampah
Apiaceae	<i>Sanicula bipinnata</i>	poison sanicle
Apiaceae	<i>Sanicula bipinnatifida</i>	purple sanicle
Apiaceae	<i>Sanicula crassicaulis</i>	Pacific sanicle
Apiaceae	<i>Torilis arvensis</i> *	field hedge parsley
Apiaceae	<i>Torilis nodosa</i> *	knotted hedge parsley
Apiaceae	<i>Yabea microcarpa</i>	California hedge parsley
Apocynaceae	<i>Asclepias fascicularis</i>	narrow-leaf milkweed
Asteraceae	<i>Achillea millefolium</i>	yarrow
Asteraceae	<i>Achyrrachaena mollis</i>	blow wives
Asteraceae	<i>Agoseris grandiflora</i> var. <i>grandiflora</i>	large flowered agoseris
Asteraceae	<i>Agoseris heterophylla</i>	annual agoseris
Asteraceae	<i>Artemisia californica</i>	California sagebrush
Asteraceae	<i>Artemisia douglasiana</i>	mugwort
Asteraceae	<i>Baccharis pilularis</i> ssp. <i>consanguinea</i>	coyote brush
Asteraceae	<i>Baccharis salicifolia</i> ssp. <i>salicifolia</i>	mule fat
Asteraceae	<i>Blepharizonia plumosa</i>	big tarplant
Asteraceae	<i>Brickellia californica</i>	California brickellbush

Asteraceae	<i>Carduus pycnocephalus</i> *	Italian thistle
Asteraceae	<i>Carduus tenuiflorus</i> *	slender-flowered thistle
Asteraceae	<i>Centaurea melitensis</i> *	toocalote
Asteraceae	<i>Centaurea solstitialis</i> *	yellow star thistle
Asteraceae	<i>Cirsium occidentale</i> var. <i>venustum</i>	venus thistle
Asteraceae	<i>Cirsium vulgare</i> *	bull thistle
Asteraceae	<i>Corethrogyne filaginifolia</i>	California sand aster
Asteraceae	<i>Deinandra lobbii</i>	threeray tarweed
Asteraceae	<i>Dittrichia graveolens</i> *	stinkweed
Asteraceae	<i>Ericameria linearifolia</i>	narrowleaf goldenbush
Asteraceae	<i>Erigeron bonariensis</i> *	South American horseweed, Hairy Fleabane
Asteraceae	<i>Erigeron canadensis</i>	horseweed
Asteraceae	<i>Erigeron foliosus</i> var. <i>franciscensis</i>	San francisco leafy fleabane
Asteraceae	<i>Eriophyllum confertiflorum</i> var. <i>confertiflorum</i>	golden yarrow
Asteraceae	<i>Eriophyllum jepsonii</i>	Jepson's woolly sunflower
Asteraceae	<i>Gnaphalium palustre</i>	lowland cudweed
Asteraceae	<i>Grindelia camporum</i>	common gumplant, Great Valley gumweed
Asteraceae	<i>Gutierrezia californica</i>	California matchweed
Asteraceae	<i>Helianthus californicus</i>	California sunflower
Asteraceae	<i>Helminthotheca echioides</i> *	bristly ox-tongue
Asteraceae	<i>Heterotheca oregona</i> var. <i>scaberrima</i>	rough oregon goldenaster
Asteraceae	<i>Heterotheca sessiliflora</i> ssp. <i>bolanderi</i>	Bolander goldenaster
Asteraceae	<i>Holocarpha heermannii</i>	Heermann's tarweed
Asteraceae	<i>Holocarpha obconica</i>	San Joaquin tarweed
Asteraceae	<i>Holozonia filipes</i>	hareleaf, whitecrown
Asteraceae	<i>Hypochaeris glabra</i> *	smooth cat's ear
Asteraceae	<i>Hypochaeris radicata</i> *	common/rough cat's-ear
Asteraceae	<i>Lactuca serriola</i> *	prickly lettuce
Asteraceae	<i>Lagophylla ramosissima</i>	common hareleaf
Asteraceae	<i>Lasthenia gracilis</i>	Common goldfields
Asteraceae	<i>Logfia filaginoides</i>	California cottonrose/fluffweed
Asteraceae	<i>Logfia gallica</i> *	narrow leaved filago
Asteraceae	<i>Madia gracilis</i>	slender tarweed

Carnegie State Vehicular Recreation Area
 Rare Plant and Native Grassland Survey Report
 October 2021

Asteraceae	<i>Matricaria discoidea</i> *	pineapple weed
Asteraceae	<i>Micropus californicus</i> var. <i>californicus</i>	slender cottonweed, cottontop
Asteraceae	<i>Microseris douglasii</i> ssp. <i>douglasii</i>	Douglas' microseris
Asteraceae	<i>Packera breweri</i>	Brewer's butterweed/groundsel
Asteraceae	<i>Pseudognaphalium luteoalbum</i> *	weedy cudweed
Asteraceae	<i>Senecio vulgaris</i> *	common groundsel
Asteraceae	<i>Silybum marianum</i> *	milk thistle
Asteraceae	<i>Sonchus asper</i> ssp. <i>asper</i> *	prickly sow thistle
Asteraceae	<i>Sonchus oleraceus</i> *	common sow thistle
Asteraceae	<i>Stebbinsoseris heterocarpa</i>	grassland silverpuffs
Asteraceae	<i>Uropappus lindleyi</i>	Lindley's silverpuffs
Asteraceae	<i>Wyethia helenioides</i>	gray mules ears
Boraginaceae	<i>Amsinckia intermedia</i>	common fiddleneck
Boraginaceae	<i>Amsinckia menziesii</i>	Menzies' /small-flowered fiddleneck
Boraginaceae	<i>Cynoglossum grande</i>	hound's tongue
Boraginaceae	<i>Emmenanthe penduliflora</i> var. <i>penduliflora</i>	whispering bells
Boraginaceae	<i>Eriodictyon californicum</i>	yerba santa
Boraginaceae	<i>Heliotropium curassavicum</i> var. <i>oculatum</i>	seaside/salt heliotrope
Boraginaceae	<i>Phacelia ciliata</i>	Great Valley phacelia
Boraginaceae	<i>Phacelia distans</i>	distant/common phacelia
Boraginaceae	<i>Phacelia imbricata</i> ssp. <i>imbricata</i>	imbricate scorpionweed
Boraginaceae	<i>Phacelia tanacetifolia</i>	tansy leafed phacelia
Boraginaceae	<i>Pholistoma membranaceum</i>	white fiesta flower
Boraginaceae	<i>Plagiobothrys arizonicus</i>	Arizona popcornflower, blood weed
Boraginaceae	<i>Plagiobothrys bracteatus</i>	bracted popcornflower
Boraginaceae	<i>Plagiobothrys canescens</i> var. <i>canescens</i>	valley popcorn flower
Boraginaceae	<i>Plagiobothrys nothofulvus</i>	rusty popcorn flower
Brassicaceae	<i>Athysanus pusillus</i>	sand weed
Brassicaceae	<i>Brassica rapa</i> *	field mustard
Brassicaceae	<i>Brassica nigra</i> *	black mustard
Brassicaceae	<i>Capsella bursa-pastoris</i> *	shepherd's purse
Brassicaceae	<i>Erysimum capitatum</i> var. <i>capitatum</i>	western wallflower
Brassicaceae	<i>Hirschfeldia incana</i> *	summer mustard

Brassicaceae	<i>Lepidium latifolium</i> *	perennial pepperweed, tall white top
Brassicaceae	<i>Lepidium nitidum</i>	shining peppergrass
Brassicaceae	<i>Sinapis arvensis</i> *	charlock
Brassicaceae	<i>Sisymbrium irio</i> *	London rocket
Brassicaceae	<i>Sisymbrium orientale</i> *	oriental mustard
Brassicaceae	<i>Thysanocarpus curvipes</i>	lacepod/fringe pod, ribbed fringedpod
Caprifoliaceae	<i>Lonicera subspicata</i> var. <i>denudata</i>	southern honeysuckle
Caryophyllaceae	<i>Spergularia rubra</i> *	red sand spurrey
Caryophyllaceae	<i>Stellaria media</i> *	common chickweed
Chenopodiaceae	<i>Chenopodium album</i> *	lambsquarters, white goosefoot
Chenopodiaceae	<i>Chenopodium californicum</i>	California goosefoot
Chenopodiaceae	<i>Chenopodium murale</i> *	nettleleaf/wall goosefoot
Chenopodiaceae	<i>Salsola tragus</i> *	Russian thistle, tumbleweed
Convolvulaceae	<i>Calystegia purpurata</i> ssp. <i>purpurata</i>	climbing morning-glory
Convolvulaceae	<i>Convolvulus arvensis</i> *	field bindweed, orchard morningglory
Cucurbitaceae	<i>Marah fabaceus</i>	California man-root
Cupressaceae	<i>Juniperus californica</i>	California juniper
Ericaceae	<i>Arctostaphylos glauca</i>	bigberry manzanita
Euphorbiaceae	<i>Croton setiger</i>	turkey mullein, dove weed
Fabaceae	<i>Acmispon brachycarpus</i>	hill lotus, foothill deervetch, maresfat
Fabaceae	<i>Acmispon wrangelianus</i>	California/calf lotus, Chilean trefoil
Fabaceae	<i>Astragalus asymmetricus</i>	San Joaquin milkvetch
Fabaceae	<i>Astragalus gambelianus</i>	Gambell's dwarf milkvetch
Fabaceae	<i>Lathyrus vestitus</i> var. <i>vestitus</i>	common Pacific pea
Fabaceae	<i>Lupinus albifrons</i> var. <i>albifrons</i>	silver bush lupine
Fabaceae	<i>Lupinus bicolor</i>	miniature/bicolor lupine, Lindley's annual lupine
Fabaceae	<i>Lupinus microcarpus</i> var. <i>densiflorus</i>	dense flowered platycarpus, chick lupine
Fabaceae	<i>Lupinus microcarpus</i> var. <i>microcarpus</i>	valley lupine
Fabaceae	<i>Lupinus succulentus</i>	arroyo lupine
Fabaceae	<i>Medicago polymorpha</i> *	burclover
Fabaceae	<i>Medicago sativa</i> *	alfalfa
Fabaceae	<i>Prosopis velutina</i> *	velvet mesquite
Fabaceae	<i>Trifolium albopurpureum</i>	rancheria clover

Carnegie State Vehicular Recreation Area
 Rare Plant and Native Grassland Survey Report
 October 2021

Fabaceae	<i>Trifolium depauperatum</i> var. <i>amplectens</i>	pale sack clover
Fabaceae	<i>Trifolium depauperatum</i> var. <i>depauperatum</i>	dwarf sack clover, cowbag clover
Fabaceae	<i>Trifolium depauperatum</i> var. <i>truncatum</i>	truncate sack clover
Fabaceae	<i>Trifolium hirtum</i> *	rose clover
Fabaceae	<i>Trifolium variegatum</i> var. <i>variegatum</i>	white tipped clover
Fabaceae	<i>Trifolium willdenovii</i>	tomcat clover
Fabaceae	<i>Vicia sativa</i> ssp. <i>sativa</i> *	common/ spring vetch
Fabaceae	<i>Vicia villosa</i> ssp. <i>villosa</i> *	hairy/wooly/winter vetch
Fagaceae	<i>Quercus agrifolia</i> var. <i>agrifolia</i>	coast live oak
Fagaceae	<i>Quercus douglasii</i>	blue oak
Fagaceae	<i>Quercus lobata</i>	valley oak
Frankeniaceae	<i>Frankenia salina</i>	alkali heath
Geraniaceae	<i>Erodium botrys</i> *	broad-leaved filaree
Geraniaceae	<i>Erodium brachycarpum</i> *	shortfruit stork's bill
Geraniaceae	<i>Erodium cicutarium</i> *	red-stemmed filaree
Geraniaceae	<i>Erodium moschatum</i> *	white-stemmed/greenstem filaree
Geraniaceae	<i>Geranium dissectum</i> *	cut-leaved geranium
Geraniaceae	<i>Geranium molle</i> *	dove's foot geranium
Grossulariaceae	<i>Ribes aureum</i> var. <i>gracillimum</i>	golden current
Grossulariaceae	<i>Ribes malvaceum</i> var. <i>malvaceum</i>	chaparral current
Grossulariaceae	<i>Ribes quercetorum</i>	oak gooseberry
Iridaceae	<i>Sisyrinchium bellum</i>	blue-eyed grass
Juglandaceae	<i>Juglans hindsii</i> *	Northern California black walnut
Lamiaceae	<i>Acanthomintha lanceolata</i> ¹	Santa Clara thornmint
Lamiaceae	<i>Marrubium vulgare</i> *	horehound
Lamiaceae	<i>Monardella villosa</i> ssp. <i>villosa</i>	coyote mint
Lamiaceae	<i>Pogogyne serpylloides</i>	thyme-leaf pogogyne/mesamint
Lamiaceae	<i>Salvia columbariae</i>	chia
Lamiaceae	<i>Salvia mellifera</i>	black sage
Lamiaceae	<i>Scutellaria tuberosa</i>	Danny's skullcap
Lamiaceae	<i>Stachys albens</i>	whitestem/cobwebby hedge nettle
Lamiaceae	<i>Trichostema lanceolatum</i>	vinegarweed
Liliaceae	<i>Calochortus albus</i>	white globe lily, fairy lantern

Carnegie State Vehicular Recreation Area
 Rare Plant and Native Grassland Survey Report
 October 2021

Liliaceae	<i>Calochortus luteus</i>	yellow mariposa lily
Liliaceae	<i>Calochortus venustus</i>	butterfly mariposa lily
Liliaceae	<i>Fritillaria agrestis</i>	stinkbells
Malvaceae	<i>Malacothamnus fremontii</i>	Fremont's bush mallow
Malvaceae	<i>Malva nicaeensis</i> *	bull mallow
Malvaceae	<i>Malva parviflora</i> *	cheeseweed
Montiaceae	<i>Calandrinia menziesii</i>	redmaids
Montiaceae	<i>Claytonia perfoliata ssp. perfoliata</i>	miner's lettuce
Myrsinaceae	<i>Anagallis arvensis</i> *	scarlet pimpernel
Myrtaceae	<i>Eucalyptus globulus</i> *	blue gum
Oleaceae	<i>Forestiera pubescens</i>	desert olive
Onagraceae	<i>Clarkia affinis</i>	chaparral clarkia
Onagraceae	<i>Clarkia purpurea ssp. quadrivulnera</i>	four-spot/winecup clarkia
Onagraceae	<i>Epilobium brachycarpum</i>	panicled/autumn willowherb
Onagraceae	<i>Epilobium canum ssp. canum</i>	California fuchsia
Orobanchaceae	<i>Castilleja affinis ssp. affinis</i>	indian paintbrush
Orobanchaceae	<i>Castilleja exserta ssp. exserta</i>	purple owl's clover
Orobanchaceae	<i>Castilleja foliolosa</i>	woolly indian paintbrush
Oxalidaceae	<i>Oxalis pes-caprae</i> *	Bermuda buttercup
Papaveraceae	<i>Eschscholzia californica</i>	California poppy
Papaveraceae	<i>Papaver heterophyllum</i>	wind poppy
Phrymaceae	<i>Diplacus aurantiacus var. aurantiacus</i>	sticky/bush monkeyflower
Phrymaceae	<i>Erythranthe guttata</i>	common monkeyflower
Pinaceae	<i>Pinus sabiniana</i>	ghost/gray/foothill pine
Plantaginaceae	<i>Collinsia heterophylla</i>	Chinese houses
Plantaginaceae	<i>Collinsia sparsiflora var. collina</i>	hillside collinsia, spinster's blue eyed mary
Plantaginaceae	<i>Plantago erecta</i>	California plantain
Plantaginaceae	<i>Plantago lanceolata</i> *	English plantain
Platanaceae	<i>Platanus racemosa</i>	western sycamore
Poaceae	<i>Aira caryophyllea</i> *	silver hair grass
Poaceae	<i>Avena barbata</i> *	slender wild oat
Poaceae	<i>Avena fatua</i> *	wild oat
Poaceae	<i>Brachypodium distachyon</i> *	annual/purple false brome
Poaceae	<i>Bromus diandrus</i> *	ripgut brome

Poaceae	<i>Bromus hordeaceus</i> *	soft chess
Poaceae	<i>Bromus madritensis</i> ssp. <i>madritensis</i> *	Spanish brome
Poaceae	<i>Bromus madritensis</i> ssp. <i>rubens</i> *	foxtail chess, red brome
Poaceae	<i>Cynodon dactylon</i> *	bermuda grass
Poaceae	<i>Distichlis spicata</i>	saltgrass
Poaceae	<i>Elymus caput-medusae</i> *	medusa head
Poaceae	<i>Elymus elymoides</i> var. <i>elymoides</i>	squirrel tail
Poaceae	<i>Elymus glaucus</i> ssp. <i>glaucus</i>	blue wildrye
Poaceae	<i>Elymus multisetus</i>	big squirrel tail
Poaceae	<i>Festuca microstachys</i>	annual fescue
Poaceae	<i>Festuca myuros</i> *	rat-tail fescue
Poaceae	<i>Festuca perennis</i> *	rye grass
Poaceae	<i>Hordeum brachyantherum</i> ssp. <i>brachyantherum</i>	meadow barley
Poaceae	<i>Hordeum murinum</i> ssp. <i>leporinum</i> *	barnyard/farmer's foxtail, foxtail barley
Poaceae	<i>Koeleria macrantha</i>	junegrass
Poaceae	<i>Poa annua</i> *	annual bluegrass
Poaceae	<i>Poa bulbosa</i> *	bulbous bluegrass
Poaceae	<i>Poa secunda</i> ssp. <i>secunda</i>	one-sided/pine bluegrass
Poaceae	<i>Stipa cernua</i>	nodding needlegrass
Poaceae	<i>Stipa pulchra</i>	purple needlegrass
Polemoniaceae	<i>Gilia achilleifolia</i> ssp. <i>achilleifolia</i>	California gilia
Polemoniaceae	<i>Gilia capitata</i> ssp. <i>staminea</i>	bluehead/globe gilia
Polemoniaceae	<i>Gilia clivorum</i>	purplespot gilia
Polemoniaceae	<i>Gilia tricolor</i> ssp. <i>diffusa</i>	bird's eye gilia
Polemoniaceae	<i>Leptosiphon androsaceus</i>	common linanthus
Polemoniaceae	<i>Microsteris gracilis</i>	slender phlox
Polemoniaceae	<i>Navarretia pubescens</i>	blue navarretia, downy pincushionplant
Polygonaceae	<i>Chorizanthe membranacea</i>	pink spineflower
Polygonaceae	<i>Eriogonum fasciculatum</i> var. <i>foliolosum</i>	California buckwheat
Polygonaceae	<i>Eriogonum fasciculatum</i> var. <i>polifolium</i>	California/Mojave buckwheat
Polygonaceae	<i>Eriogonum gracile</i> var. <i>gracile</i>	slender woolly buckwheat
Polygonaceae	<i>Eriogonum nudum</i> var. <i>pauciflorum</i>	little flower wild buckwheat
Polygonaceae	<i>Eriogonum roseum</i>	virgate/wand buckwheat

Carnegie State Vehicular Recreation Area
 Rare Plant and Native Grassland Survey Report
 October 2021

Polygonaceae	<i>Eriogonum wrightii</i> var. <i>subscaposum</i>	Wright's buckwheat, bastardsage
Polygonaceae	<i>Polygonum aviculare</i> ssp. <i>depressum</i> *	common knotweed
Polygonaceae	<i>Rumex conglomeratus</i> *	green/clustered dock
Polygonaceae	<i>Rumex crispus</i> *	curly dock
Polygonaceae	<i>Rumex californicus</i>	California dock
Polypodiaceae	<i>Polypodium californicum</i>	California polypody
Primulaceae	<i>Primula hendersonii</i>	mosquito bills, Henderson's shooting star
Pteridaceae	<i>Pellaea andromedifolia</i>	coffee fern
Pteridaceae	<i>Pellaea mucronata</i> var. <i>mucronata</i>	bird's foot fern
Pteridiaceae	<i>Adiantum jordanii</i>	California maidenhair
Pteridiaceae	<i>Pentagramma triangularis</i> ssp. <i>triangularis</i>	goldback fern
Ranunculaceae	<i>Clematis lasiantha</i>	chaparral clematis, pipestem
Ranunculaceae	<i>Delphinium californicum</i> ssp. <i>interius</i>	Hospital Canyon larkspur
Ranunculaceae	<i>Delphinium hesperium</i> ssp. <i>hesperium</i>	western/coast larkspur
Ranunculaceae	<i>Delphinium nudicaule</i>	canyon larkspur
Ranunculaceae	<i>Ranunculus californicus</i> var. <i>californicus</i>	California buttercup
Rhamnaceae	<i>Frangula californica</i> ssp. <i>californica</i>	California coffeeberry
Rhamnaceae	<i>Rhamnus crocea</i>	spiny redberry
Rhamnaceae	<i>Rhamnus ilicifolia</i>	hollyleaf redberry
Rosaceae	<i>Cercocarpus betuloides</i> var. <i>betuloides</i>	birchleaf mountain mahogany
Rosaceae	<i>Heteromeles arbutifolia</i>	toyon, Christmas berry
Rosaceae	<i>Rosa californica</i>	California wildrose
Rubiaceae	<i>Galium aparine</i>	goose grass, bedstraw
Rubiaceae	<i>Galium murale</i> *	tiny bedstraw
Rubiaceae	<i>Galium parisiense</i> *	wall bedstraw
Rubiaceae	<i>Galium porrigens</i> var. <i>porrigens</i>	climbing bedstraw
Salicaceae	<i>Populus fremontii</i> ssp. <i>fremontii</i>	Fremont cottonwood
Salicaceae	<i>Salix laevigata</i>	red willow
Salicaceae	<i>Salix lasiolepis</i>	arroyo willow
Sapindaceae	<i>Aesculus californica</i>	California buckeye
Saxifragaceae	<i>Micranthes californica</i>	California saxifrage
Scrophulariaceae	<i>Scrophularia californica</i>	California figwort, bee plant
Scrophulariaceae	<i>Triphysaria eriantha</i> ssp. <i>eriantha</i>	Jonny-tuck, butter 'n' eggs

Carnegie State Vehicular Recreation Area
 Rare Plant and Native Grassland Survey Report
 October 2021

Simaroubaceae	<i>Ailanthus altissima</i> *	tree of heaven
Solanaceae	<i>Datura wrightii</i>	tolguacha, toluaca, sacred thornapple
Solanaceae	<i>Nicotiana glauca</i> *	tree tobacco
Solanaceae	<i>Solanum americanum</i>	common/small flowered nightshade
Solanaceae	<i>Solanum umbelliferum</i>	blue witch
Themidaceae	<i>Dichelostemma capitatum</i> ssp. <i>capitatum</i>	blue dicks
Themidaceae	<i>Triteleia laxa</i>	lthuriel's spear
Valeriaceae	<i>Plectritis ciliosa</i>	long-spurred plectritis
Valeriaceae	<i>Plectritis macrocera</i>	long horned/white plectritis
Verbenaceae	<i>Verbena lasiostachys</i> var. <i>scabrida</i>	western verbena
Violaceae	<i>Viola pedunculata</i>	Johnny-jump-up, California golden violet
Visaceae	<i>Arceuthobium campylopodum</i>	Western dwarf mistletoe
Viscaceae	<i>Phoradendron leucarpum</i> ssp. <i>tomentosum</i>	oak mstletoe
Zygophyllaceae	<i>Tribulus terrestris</i> *	puncture vine