

2016-2017 Annual Monitoring Report
±585-Acres Rocklin Open Space Preserve
City of Rocklin, California

Regulatory Permits: Claremont (SPK-199900728), Orchard Creek (SPK-2000-00007), Stanford Ranch (SPK-1901-09988), Sunset West (SPK-199300519), and Whitney Ranch (SPK-199800668)

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Executive Summary

This report presents the results of the 2016-2017 monitoring of the approximate 585-acre Rocklin Open Space Preserve (Preserve). The Preserve includes the 24-acre Orchard Creek Preserve, the 309-acre Stanford Ranch Preserve, the 146-acre Sunset West Preserve, the 91-acre Whitney Ranch Preserve, and the 15-acre Claremont Preserve. The City of Rocklin (City) adopted the *City of Rocklin General Open Space Management Plan* (GOSMP) in 2015 to facilitate the management of all of the City's open space holdings. Under the GOSMP, the primary goal is to conserve and protect the functions and values of existing habitats, including vernal pool grasslands, seasonal wetlands, riparian areas, and oak woodlands within the Preserve. The GOSMP requires the preparation of annual monitoring reports to identify whether special-status species occur within the Preserve, to compare the vegetative and hydrologic condition of the Preserve to the recorded baseline conditions, and to make recommendations for active management to address potential problems including vandalism, dumping, invasive species infestations, potential fuel buildup, and fencing issues. The purpose of the 2016-2017 annual monitoring was to continue to monitor conditions within the Preserve, compare baseline surveys conducted in 2015-2016 to surveys in 2016-2017, and conduct special-status species surveys to document whether performance standards are being met within the Preserve.

Overall, the Preserves are in good condition. Despite the City's on-going efforts at trash removal within the Preserves, including conducting volunteer open space clean-up events, trash has accumulated in some of the Preserves, most often at interfaces with public use areas such as parks, streets, and pathways. Some minor trespassing and erosion issues were observed. Listed branchiopods were found in one pool within the Stanford Ranch Preserve. Vernal pools and wetlands are functioning well providing habitat for native plant species. Additionally, numerous animal species, including some listed species were observed during Preserve monitoring.

1.0 PROJECT BACKGROUND

1.1. Background

The City adopted the GOSMP in May of 2015 following the approval of the GOSMP by the U.S. Army Corps of Engineers (USACE). The GOSMP allows combined management of over 585 total acres within five open space preserves. The GOSMP replaces the previous project-specific management plans for the five open space areas, including the following:

- *Orchard Creek Open Space Preserve Operations and Management Plan;*
- *Whitney Ranch (Sunset Ranchos Phase 1) Open Space Conservation Easement Operations and Management Plan;*
- *Use Plan Addendum to the Operations and Management Plan/Conservation Easement for the Stanford Ranch Open Space Preserve; and*
- *Operations and Management Plan for the Claremont (Parcel K) Open Space Preserve.*

As discussed above, the GOSMP requires a variety of annual surveys as well as larger baseline surveys every five to ten years. A summary of these survey requirements is provided in **Section 4.1**.

The Preserve includes five areas: Claremont, Orchard Creek, Stanford Ranch, Sunset West, and Whitney Ranch (**Figure 1**). **Table 1** below identifies the Preserve areas by acreages and habitat types documented in the GOSMP (City of Rocklin 2015).

TABLE 1 — PRESERVE AREA BY HABITAT TYPES

Preserve Area	Acreage	Habitat Types and Existing Conditions
Claremont	±15 acres	Detention basin, pond, seasonal wetlands, open grassland, native and planted oaks, and preserved rock formation
Orchard Creek	±24 acres	Riverine seasonal wetland, vernal pool, intermittent drainage swale, and annual grassland dominated by invasive species
Stanford Ranch	±309 acres	Annual grassland, riparian, oak woodland, vernal pool, seasonal wetland, and Pleasant Grove Creek
Sunset West	±146 acres	Annual grassland, riparian, Pleasant Grove Creek, intermittent drainage, drainage swale, historic and created seasonal wetland, riverine wetland, and vernal pool
Whitney Ranch	±91 acres	Annual grassland, drainages, and riparian

1.2. Success Criterion

1.2.1. Residual Dry Matter Monitoring

The GOSMP identifies the target residual dry matter (RDM) for the Preserve as no more than 1,200 pounds (lbs.)/acre, but did not set a minimum RDM target. The typical RDM objective for California annual grassland is a RDM between 800 and 1,200 lbs./acre (Bartolome *et. al* 2006). The typical minimum RDM objective for hardwood range with 50 to 75 percent cover is 400

lbs./acre for a 20 to 40 percent slope and may be as low as 200 lbs./acre on flatter areas. Because the majority of the creek corridors are heavily sloped, the target RDM range for oak woodland areas was established as 400 to 1,200 lbs./acre. Areas with a RDM exceeding 1,200 lbs./acre are considered to have excess vegetation growth and grazing or mowing practices should be implemented, while areas with a RDM below the target range for each vegetation community are overgrazed and stocking rates should be reduced.

1.2.2. Vernal Pool Monitoring

As outlined in the GOSMP, 20 percent of the vernal pools within the Preserve are surveyed twice during each monitoring year. The performance standards are outlined below.

Hydrologic Performance Standards

- Pools must be inundated for a duration that is within the range of ponding for natural vernal pools.
- Pools must hold water in a manner consistent with the normal inundation season of natural pools.

Floristic Performance Standards

- Plant species with greater than 25 percent vegetative cover are considered dominant plant species. If no plant species are greater than 25 percent relative cover in a pool, then the plant species with at least 10 percent relative cover are considered dominant plant species.
- Each vernal pool must be dominated by hydrophytic vegetation according to the methods provided in the 1987 *U.S. Army Corps of Engineers Wetland Delineation Manual* (Environmental Laboratories 1987) or the Prevalence Index found in the *Food Securities Act Manual*.

Invertebrate Performance Standards

- Wet-season invertebrate surveys are to be conducted in accordance with the U.S. Fish and Wildlife Service (USFWS) protocol survey for listed vernal pool branchiopods, as outlined in the *Survey Guidelines for the Listed Large Branchiopods* (USFWS 2015). Two exceptions to the survey protocol are that the pools are required to be surveyed only twice during the monitoring year rather than every two weeks throughout pool inundation and only 20 percent of the vernal pools within the Preserve are required to be surveyed.

1.2.3. General Preserve Inspections

General Preserve inspections were conducted throughout the 2016-2017 season in combination with baseline surveys and annual monitoring tasks. Representative site photographs were taken with a digital camera and are shown in **(Appendix A)**.

1.2.4. Invasive Species Monitoring

As part of the ongoing annual monitoring, invasive species surveys are conducted. Baseline data was collected in the fall of 2015 and updated in the fall of 2016. Foothill Associates' biologists surveyed the Preserves between August 19 and September 23, 2016. Random transects spaced approximately 50 feet apart were walked throughout the Preserves to ensure total visual coverage. Locations of invasive species were recorded or updated using the ArcGIS *Collector* app for Android and iPhones. Due to limitations on the accuracy of the app and collection devices, revisiting and correctly identifying the point data collected in 2015 was extremely difficult in high-density riparian areas. Therefore, these areas were re-mapped as polygons encompassing small groups of invasive species. Single occurrences or populations of plants less than approximately 2-feet by 2-feet in size were mapped as points, and larger populations of plants were mapped as polygons. Additionally, representative site photographs were taken throughout the Preserves. Wildlife species observed during the invasive plant surveys were also recorded (**Appendix B**). Binoculars were used to identify wildlife, as needed. The locations of trash, evidence of unauthorized access, vandalism, damage, or encroachment was noted as well. The results of the invasive species monitoring and updated mapping, along with recommendations for management strategies are discussed in detail in the *Rocklin Open Space Invasive Species Habitat Mapping Report* (Foothill Associates 2017a) prepared for the City and are summarized in this report.

1.2.5. Vernal Pool Invertebrate Monitoring

Two wet-season surveys for listed vernal pool branchiopods were conducted in the 2016-2017 monitoring year. Surveys were conducted by Marisa Brilts and Charlotte Marks. The Preserves were surveyed on January 5 and 6, March 4, 8, 15, 20, and 21, 2017. A total of 62 pools were surveyed in three separate Preserves: Stanford Ranch, Orchard Creek, and Sunset West. Pools were surveyed twice during the season; all 62 pools were inundated during the first set of surveys, during the second round of surveys twenty-nine pools were either dry or inundation was less than one inch making them unable to be sampled. Vernal pool fairy shrimp (*Branchinecta lynchi*), a federally threatened species, was found in one (1) of the sampled pools in the Stanford Ranch Preserve. No other State or federally-listed branchiopods were observed in any of the sampled pools; however, a number of other non-listed aquatic invertebrates were observed in the vast majority of sampled pools.

Wet-season surveys for listed vernal pool branchiopods were conducted in accordance with the U.S. Fish and Wildlife Service (USFWS) 2015 *Survey Guidelines for the Listed Large Branchiopods*, with the exception that only wet-season sampling was completed and each pool was sampled twice, as required by the GOSMP. The wetlands were sampled by pulling a D-frame, 150-micron aquatic dip-net through the water column. The dip-net was undulated up and down through the water column to ensure a representative sample was obtained from each of the wetlands. A minimum of three five-foot passes were made with the dip-net in each sampled pool. No voucher specimens were collected.

The estimated number (e.g., 10s, 100s, 1,000s, etc.) of listed branchiopods along with the presence of common invertebrates, insects, and other wildlife species within each wetland was

indicated on the data sheets (**Appendix C**). Other data collected during sampling included the wetland number, water depth, estimated maximum depth, percent of inundation, water temperature, and general habitat and weather conditions.

1.2.6. Vernal Pool Floristic Monitoring

Floristic monitoring was conducted on May 2, 4, 10, 12, 16, 24, and 31, 2017. Floristic monitoring was conducted on the same pools as the ones selected for the invertebrate monitoring. Surveys were conducted on different dates in an attempt to best capture the peak floristic conditions of pools that were no longer inundated. Meandering transects were walked through the entire area of each pool and all observed species were recorded (**Appendix D**). Each species observed within the pool was assigned a relative cover score using the Braun-Blanquet scale from 0-5 (**Table 2**).

TABLE 2 — BRAUN BLANQUET SCALE

Scale	Relative Cover Range
0	<1%
1	1-5%
2	6-25%
3	26-50%
4	51-75%
5	>75%

1.2.7. Residual Dry Matter Monitoring

A total of 50 RDM points were established within the Preserve; 30 in annual grassland habitat and 20 in oak woodland habitat (**Figure 2**). RDM points were sampled between October 5 and 26, 2016. In the fall RDM sampling, Foothill Associates' biologists clipped vegetation within one square-foot plots, as outlined in the *Guidelines for Residual Dry Matter on Coastal and Foothill Rangelands* (RDM Guidelines) (Bartolome *et. al* 2006). The weight of vegetation collected from the one square foot plots was used for calculation purposes (**Appendix E**). A Robel pole along with a golf ball, baseball, and basketball were placed at the RDM plot. Representative photographs were taken from each sample location at 10-feet and 20-feet from the Robel pole. During, the spring vegetative monitoring, the scientific and common name and absolute cover of all species within the 1-square-meter test plot were recorded.

1.2.8. Riparian Monitoring

Focused riparian monitoring was conducted on April, 10, 12, 21, and 25, May 3 and 15, and June 9, 2017. The riparian areas were examined on foot to evaluate creek conditions and determine areas with restoration potential (**Figure 3**).

2.0 BASELINE STUDY RESULTS

2.1. *Special-Status Plant Species*

Although the GOSMP identifies six special-status plant species with the potential to occur in the Preserve, five of the species are associated with gabbro or serpentine soils that are not known from the Rocklin area and include: Stebbin's morning-glory (*Calystegia stebbinsii*), Pine Hill ceanothus (*Ceanothus roderickii*), El Dorado bedstraw (*Galium californicum* ssp. *sierrae*), Tahoe yellow-crest (*Rorippa subumbellata*), and Layne's butterweed (=ragwort) (*Packera layneae*). The sixth species, Sacramento Orcutt grass (*Orcuttia viscidia*) has the potential to occur within the Preserve.

Focused special-status plant surveys were conducted during the appropriate bloom periods for 2016-2017 annual monitoring. Sacramento Orcutt grass was surveyed between April and May, 2017. No special-status plants were observed during the routine monitoring within the Preserve.

2.2. *Special-Status Wildlife Species*

The GOSMP identifies 14 special-status wildlife species to be considered during Preserve management. However, Rocklin is outside the range of six of these species: California tiger salamander (*Ambystoma californiense*; CTS), California red-legged frog (*Rana draytonii*; CRLF), giant garter snake (*Thamnophis gigas*; GGS), delta smelt (*Hypomesus tranpacificus*), Lahontan cutthroat trout (*Oncorhynchus clarkii henshawi*), and fisher (*Martes pennanti*).

The remaining eight species have the potential to occur within the Preserve include: western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), Central Valley steelhead (*Oncorhynchus mykiss*), Central Valley spring-run Chinook salmon (*Oncorhynchus tshawytscha*), Central Valley winter-run Chinook salmon (*Oncorhynchus tshawytscha*), Conservancy fairy shrimp (*Branchinecta conservatio*), vernal pool fairy shrimp (*Branchinecta lynchi*), vernal pool tadpole shrimp (*Lepidurus packardi*), and valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*; VELB). In addition, the Preserve provides habitat for Swainson's hawk (*Buteo swainsoni*), western burrowing owl (*Athene cunicularia*), and western pond turtle (*Actinemys marmorata*).

Focused special-status wildlife surveys were conducted during 2016-2017 monitoring year. Vernal pool fairy shrimp were observed in the Stanford Ranch Preserve (SR-20) and western pond turtles (*Actinemys marmorata*) were observed in Sunset West (SW-2). Swainson's hawk (*Buteo swainsoni*) were observed foraging in Orchard Creek. Although no western burrowing owls (*Athene cunicularia*) were observed during the focused survey, the Preserve provides habitat for this species and this species will continue to be included in wildlife surveys within the Preserve.

2.2.1. Valley Elderberry Longhorn Beetle

Elderberry shrubs located in riparian areas are potential habitat for the valley elderberry longhorn beetle (VELB), a federally-listed as threatened species. Protocol-level surveys were conducted for VELB during the focused riparian monitoring conducted on April, 10, 12, 21, and 25, May 3 and 15, and June 9, 2017. Additionally, biologists marked any additional elderberry shrubs that were not noted during 2015-2016 annual monitoring. No VELB were observed during the 2016-2017 surveys; however, two elderberry shrubs in Stanford Ranch (SR-15) contain potential exit holes created by VELB (**Figure 4**).

3.0 ANNUAL MONITORING RESULTS

Annual monitoring tasks are required throughout the year to ensure that the Preserve continues to protect the functions and values of existing habitats, including vernal pool grasslands, seasonal wetlands, riparian areas, and oak woodlands, in accordance with the GOSMP. This includes invasive species mapping, vernal pool monitoring, RDM monitoring, wetland and riparian monitoring, and general Preserve condition monitoring. A complete list of plants and wildlife observed during the 2016-2017 annual monitoring is included in **Appendix B**. Representative photographs are provided in **Appendix A**.

3.1 *Invasive Species Mapping*

In total, 20 invasive plant species were inventoried in the Preserve. Similar to 2015, emphasis was placed on monitoring species considered a high priority for control. High priority plants are those that are the most likely to quickly develop into monocultures, which provide poor habitat and exclude more desirable plant species. The locations of invasive species are shown in **Figure 5**. A list of all invasive plants inventoried in the Preserve and their approximate acreages are shown below in **Table 3**.

TABLE 3 — INVASIVE SPECIES OCCURRENCES

Species	Scientific Name	Cal-IPC Ranking	Approximate Acreage 2016	Approximate Acreage 2015*	No. of Occurrences 2016	No. of Occurrences 2015
High Priority Species						
Black Mustard	<i>Brassica nigra</i>	Moderate	<0.1	0.3	2	27
Bull Thistle	<i>Cirsium vulgare</i>	Moderate	0.3	0.3	8	22
Italian Thistle	<i>Carduus pycnocephalus</i>	Moderate	0.5	0.6	12	51
Milk Thistle	<i>Silybum marianum</i>	Limited	0.5	0.9	7	31
Pampas Grass	<i>Cortaderia selloana</i> or <i>C. jubata</i>	High	<0.1	<0.1	8	13
Water Hyacinth	<i>Eichhornia crassipes</i>	High	0.2	<0.1	3	1
Yellow Star-Thistle	<i>Centaurea solstitialis</i>	High	20.1	23.3	140	396
Woody/ Shrub Species						
Black Locust	<i>Robinia pseudoacacia</i>	Limited	<0.1	<0.1	4	4
Callery Pear	<i>Pyrus calleryana</i>	Watchlist	1.2	0.1	104	124
Chinese Tallow	<i>Triadica sebifera</i>	Moderate	23.8	2.1	401	1084
Common Fig/Edible Fig	<i>Ficus carica</i>	Moderate	2.9	0.1	49	99
Privet	<i>Ligustrum lucidum</i> and <i>L. japonicum</i>	Watchlist	<0.1	N/A	4	N/A
Eucalyptus	<i>Eucalyptus</i> sp.	Limited	<0.1	<0.1	6	1
Himalayan Blackberry	<i>Rubus armeniacus</i>	High	6.9	2.7	122	86
Tree of Heaven	<i>Ailanthus altissima</i>	Moderate	0.1	0.1	23	69
Other Grass/ Herb Species						
Bristly Ox-tongue	<i>Helminthotheca echioides</i>	Limited	<0.1	<0.1	1	1
Curly Dock	<i>Rumex crispus</i>	Limited	0.2	0.2	11	29
Rose Clover	<i>Trifolium hirtum</i>	Limited	<0.1	N/A	1	N/A
Medusa head Grass	<i>Elymus caput-medusae</i>	High	<0.1	N/A	1	N/A
Stinkwort	<i>Dittrichia graveolens</i>	Moderate	3.7	2.0	50	70

*Acreage based on mapped areas and assumption of 50 SF per point occurrence for woody plants.

In total, approximately 61 acres of invasive species (~10% of the total Preserve area) were mapped in 2016. The most widespread invasive species within the Preserve are yellow star-thistle, which was present in over 20 acres of Preserve and is found mostly in annual grassland areas, and Chinese tallow, which was present in over 23 acres in the Preserve. This is consistent with the baseline data collected in 2015, where these two species were the most commonly observed. There is a reduction of approximately three acres in the size of the yellow star-thistle population, but it has not been eliminated from any Preserve areas. It should be noted that although the total number of acres of invasive species mapped has doubled from 2015, this change is due mostly to the change in data collection methodology rather than a true increase in invasive species coverage. The mapping methodology for most woody species changed from using point data in 2015 to polygon data in 2016. The result is that the 2016 data reflects the actual canopy coverage of the occurrence, rather than an assumed dimension of 50 ft² (~7' x 7') per point that was used in 2015. The 2016 mapping presents a more accurate representation of the actual extent of invasive species in the Preserve. The largest increases in area of invasive species were observed with Chinese tallow, Himalayan blackberry, and common fig. Additionally, water hyacinth seems to be spreading downstream in SW-2 from the single observance in 2015. The most common invasive species remain the same this year as last year. Recommended techniques for removal and control are summarized below in **Table 4**.

The City has purchased an “EZ-Ject” Lance, an herbicide injection tool, to aid in their efforts of invasive species removal and control. In 2016-2017, a total of 158 Chinese tallow trees were treated, with 150 being in the Stanford Ranch Preserve area and eight in the Claremont Preserve area. Unless the tree represents a hazard should it eventually fall, the treated trees remain in place to serve as habitat as they succumb to the herbicide treatment.

TABLE 4 — SUMMARY OF INVASIVE SPECIES CONTROL TECHNIQUES

Species Description	Control Concerns	Removal Techniques
<i>Chinese Tallow Tree</i>		
Fast-growing tree that was originally planted as an ornamental plant, but has escaped from cultivation. Found along drainages in multiple OSP sections.	Seeds are spread by birds and water, so treatment should begin at the upper ends of drainages, if possible, to minimize the recolonization in downstream areas. Chinese tallow trees re-sprout easily, so treatment over multiple years may be required.	Cut tree and treat stump with herbicide; optimally cutting should be done in July to early August during seed formation. Hand pulling of small saplings and girdling of large trees.
<i>Yellow Star-Thistle</i>		
A perennial herb that is well-established throughout the state. Particularly prevalent in road right-of-way's and along utility access roads in the Preserves. Found in annual grassland habitat in Preserve areas.	Often requires management over a number of years to eliminate. Yellow star-thistle seedlings are sensitive to shading, therefore establishing a new cover of desired plants, such as perennial bunchgrasses and forbs is necessary for long-term management. Re-infestation from adjacent undeveloped properties and the Highway 65 corridor is likely. Focus treatment on small populations or where re-infestation risk is low: Claremont, Whitney Ranch, Stanford Ranch, and western Sunset West.	Grazing or mowing in late May and June during the spiny and early flower stage to reduce seed heads. Sheep are effective earlier in the spring during the bolting phase, but goats are more effective later in the season when the plant has entered the spiny stage. Apply targeted pre- and post-emergent herbicides aminopyralid or clopyralid between January and March for season-long control.
<i>Himalayan Blackberry</i>		
Woody vine that can spread up to 30 feet. Typically found along riparian areas in Preserve areas.	Often re-sprouts from vegetative fragments left behind. Sensitive to shade, so planting treated areas with fast-growing native shrubs may reduce re-establishment.	Mechanical removal by repeated mowing or cutting often followed by digging out the rootstock. Goats browse on Himalayan blackberry and can be effective at reducing and controlling this plant.
<i>Pampas Grass</i>		
A large clumping grass with sharp leaf edges. Observed in Preserve areas SW-3, SR-6, SR-8, SR-15, SR-17, and WR-3.	Seeds spread on water or by wind. Can re-sprout from fragments of cane or root crown.	Cut the top and then either dig out the root crown or treat with a glyphosphate herbicide. Best removed before flowering to prevent spread of seeds during removal.
<i>Water Hyacinth</i>		
Aquatic plant with purple flowers. Found in SW-2.	Grows rapidly and colonizes downstream areas as sections of the plant break off in storms	Apply glyphosphate herbicides to the leaves. If physical removal is used, remove all fragments from water and banks.

3.2. Vernal Pool Monitoring

3.2.1. Invertebrate and Hydrological Monitoring

A total of 61 vernal pools and one seasonal wetland were sampled within the Preserves (**Figure 6**). Listed vernal pool fairy shrimp were observed in pool #14 in Stanford Ranch (SR-20) (**Figure 7**). Other non-listed aquatic invertebrates observed during surveys included: California linderiella (*Linderiella occidentalis*), water fleas (Cladocera), clam shrimp (Conchostraca), copepods (Copepoda), seed shrimp (Ostracoda), flatworms (Turbellaria), diving water beetles (Dytiscidae), midges (Chironomidae), and crawling water beetles (Halipidae). Invertebrate sampling data sheets (**Appendix C**) and representative site photographs (**Appendix A**) are included.

Wet-season surveys for listed vernal pool branchiopods were conducted on January 5 and 6, March 4, 8, 15, 20, and 21, 2017. The surveys were conducted in accordance with the U.S. Fish and Wildlife Service (USFWS) 2015 *Survey Guidelines for the Listed Large Branchiopods*, with the exception that only wet-season sampling was completed and each pool was sampled twice, as required by the GOSMP. The wetlands were sampled by pulling a D-frame, 150-micron aquatic dip-net through the water column. The dip-net was undulated up and down through the water column to ensure a representative sample was obtained from each of the wetlands. A minimum of three five-foot passes were made with the dip-net in each sampled pool. No voucher specimens were collected.

The estimated maximum depth of all of the pools ranged from 1 to 20 inches (2.5 to 51 centimeters) and the total percent inundation ranged from 0 to 100 percent. Overall, the vernal pools within the Preserve exhibit hydrology typical of vernal pools within the Central Valley. Hydrologic data is included on the invertebrate sampling data sheets in **Appendix C**.

3.2.2. Vernal Pool Floristic Monitoring

Seven vernal pool plant species were recorded in at least 75 percent of the sampled pools within the Orchard Creek Preserve. These include: bristled downingia (*Downingia bicornuta*), coyote thistle (*Eryngium vaseyi*), Italian rye grass (*Festuca perennis*), hawkbit (*Leontodon saxatilis*), Greene's popcornflower (*Plagiobothrys greenei*), whitewater crowfoot (*Ranunculus aquatilis*), and wild hyacinth (*Triteleia hyacinthine*). Two species were recorded in at least 75 percent of the sampled pools within the Stanford Ranch Preserve and include: Fremont's goldfields (*Lasthenia fremontii*) and hyssop loosestrife (*Lythrum hyssopifolia*). Three species were recorded in at least 75 percent of the sampled pools within the Sunset West Preserve and include: common spikerush (*Eleocharis macrostachya*), coyote thistle, and hyssop loosestrife. Locations of surveyed pools are shown in **Figure 6**.

Vernal pools having a Prevalence Index of 3 or less indicate that they are dominated by hydrophytic vegetation. All four pools surveyed on Orchard Creek meet the floristics performance standard (100%). Twenty-seven of the 29 pools (93%) surveyed on Stanford Ranch meet the floristics performance standard. All twenty-eight vernal pools and one seasonal wetland (100%) surveyed in Sunset West meet the floristics performance standard. Of the

combined 62 pools surveyed within the Preserves, 60 pools have a Prevalence Index of 3 or less. Therefore, ninety-seven percent (97%) of the pools meet the performance standards. Overall, the floristics within the vernal pools exhibit similar hydrophytic plant species typical of vernal pools within the Central Valley. Vernal pool floristic data sheets are included in **Appendix D** of this report.

3.3. *Residual Dry Matter and Vegetative Monitoring*

A total of 50 RDM points were sampled between October 5 and 26, 2016. Most of these were consistent with those sampled in 2015, but four points were relocated to more evenly distribute the RDM locations within the Rocklin Open Space Preserves or relocate the points from 2015 that could not be sampled (**Figure 2**). The relocated points are listed below:

- Point 2 moved from SW-6 to WR-4;
- Point 4 moved from SW-6 to SR-8;
- Point 28 moved within WR-4; and
- Point 39 moved from SR-10 to SR-13.

Approximately 60 percent of the vegetative community in the Preserves is annual grassland, which is dominated by non-native annual grasses such as wild oat (*Avena* sp.), ryegrass (*Festuca perennis*), barley (*Hordeum marinum*), brome (*Bromus* sp.), wild rye (*Elymus* sp.), and medusahead (*Elymus caput-medusae*). Other annual grasslands included croton (*Croton* sp.), vetch (*Vicia* sp.), yellow star-thistle (*Centaurea solstitialis*), and tarweed (*Holocarpha* sp.).

Oak and riparian woodlands make up approximately 24 percent of the habitat in the Preserves and are dominated by a variety of native species including: blue oak (*Quercus douglasii*), valley oak (*Quercus lobata*), and interior live oak (*Quercus wislizeni*), with willows (*Salix* sp.) and Fremont cottonwoods (*Populus fremontii*) in riparian areas. The Claremont, Orchard Creek, and Whitney Ranch Preserves consist primarily of annual grasslands. The Stanford Ranch and Sunset West Preserves contain both annual grassland and woodland habitats.

RDM falls within the target at 36 percent of the sampled locations within annual grassland and oak woodlands combined; RDM exceeded the target at 50 percent of the combined locations. It was below the target at 14 percent of the combined locations. This is an improvement from 2015, where 55 percent of the Preserves were above the target and only 32 percent met the target. Many of the Preserve areas where adjustments were recommended in 2015 are now meeting the RDM target. **Table 5** and **Table 6**, below, summarize the RDM data for each of the five Preserve areas by vegetation community. RDM Datasheets are enclosed in **Appendix E** and representative photographs are included in **Appendix A**.

TABLE 5 — SUMMARY OF RDM DATA IN ANNUAL GRASSLANDS

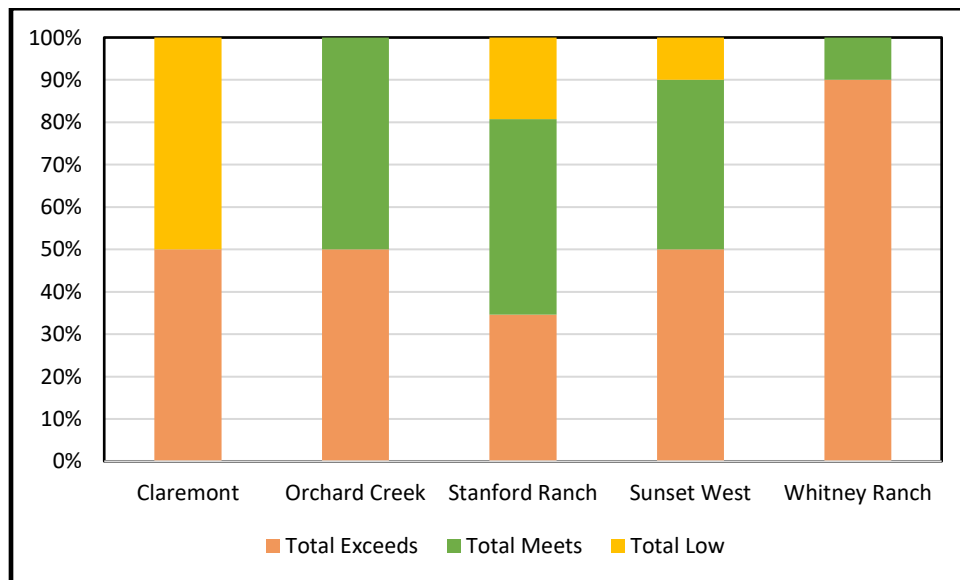
Preserve	Total RDM Points	RDM Range (lbs. / acre)	Exceeds Objective >1,200 lbs./acre	Meets Objective 800-1,200 lbs./acre	Below Objective <800 lbs./acre
Claremont	1	768	—	—	100%
Orchard Creek	2	1,152 – 1,536	50% (1)	50% (1)	—
Stanford Ranch	11	288 – 1,920	27% (3)	46% (5)	27% (3)
Sunset West	7	768-6,048	57% (4)	29% (2)	14% (1)
Whitney Ranch	9	1,152-3,168	89% (8)	11%(1)	—
Total	30	288 – 6,048	53% (16)	30% (9)	17% (5)

TABLE 6 — SUMMARY OF RDM DATA IN OAK WOODLANDS

Preserve	Total RDM Points	RDM Range (lbs. / acre)	Exceeds Objective >1,200 lbs./acre	Meets Objective 400-1,200 lbs./acre	Below Objective <400 lbs./acre
Claremont	1	1,536	100%	—	—
Stanford Ranch	15	96 – 6,624	40% (6)	47% (7)	13% (2)
Sunset West	3	1,056 – 2,976	33% (1)	67% (2)	—
Whitney Ranch	1	3,360	100%	—	—
Total	20	96 – 6,624	45% (9)	45% (9)	10% (2)

As shown below in **Chart 1**, Whitney Ranch had significantly higher overall RDM results than the other preserve areas. Whitney Ranch was grazed early in the grazing season, this resulted in secondary growth occurring after grazing was completed increasing the RDM results.

CHART 1 — SUMMARY OF RDM RESULTS



3.4. Wetland and Riparian Monitoring

Focused riparian monitoring was conducted in April, 10, 12, 21, and 25, May 3 and 15, and June 9, 2017. The riparian areas were examined on foot to evaluate creek conditions and determine areas with restoration potential. Overall, the wetlands and riparian areas are in fair condition throughout the Preserve. The greatest threats to these habitats include invasive species, erosion, beaver dams, and human activity. **Figure 8** shows potential creek restoration and rehabilitation sites identified within the Preserve. Areas marked as having invasive plants indicate culverts or channelization of waterways negatively impacted by these species. The primary invasive species impacting culverts and waterways include: edible fig, Himalayan blackberry, and Chinese tallow saplings and trees.

Restoration recommendations fall into the following categories: remove invasive plants and stabilize creek banks. A detailed restoration plan outlining the restoration goals, implementation procedures, success criteria, and special maintenance procedures will be developed for specific sites prior to the start of any restoration project.

Two beaver dams and an area of beaver activity were observed in three Preserve areas. Beaver activity was observed in the western portion of Sunset West (SW-1). Active beaver dams were observed in Sunset West (SW-2) and Stanford Ranch (SR-7). Monitoring of the dams will continue, currently they are not negatively impacting the waterways.

3.5. Preserve Conditions and General Surveys

There were limited areas of trash, generally located along the perimeter of residential lots. No significant areas of dumping or toxic chemical spills were observed. Although evidence of trespassing was observed in several areas, no gates or damaged fencing were noted. Areas of trash build-up or trespassing were reported to the City on a regular basis and cleaned up by City staff or volunteers. A general map showing the locations where trash and trespassing were observed throughout the year is shown on **Figure 9**.

The City regularly coordinates and conducts open space volunteer clean-up events in its open space areas and in 2016-2017, their efforts resulted in removal of trash totaling nine bags from the Sunset West Preserve area and 14 bags from the Antelope Creek area (an open space area within the City that is not regulated by the GOSMP). In addition, City staff surveyed and photo-documented encroachments into the open space areas at the edges of residential areas and began an effort of notifying residents of their encroachments and the need to remove/eliminate them. In 2016-2017, the City sent out 181 encroachment letters and was able to obtain action from the homeowners on 149 cases, resulting in an 82 percent compliance rate. The City continues to work with homeowners with open space encroachments towards the eventual goal of a 100 percent compliance rate.

In total, over 30 wildlife species were observed in the Preserve including: western pond turtle, ring-necked pheasant, great egret, belted kingfisher, and California king snake. A complete list of wildlife species observed in the Preserve is included in **Appendix B**.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Overall, the Preserve was in good condition during the 2016-2017 monitoring year. The monitored vernal pools met or exceeded the performance standards and one pool supported populations of vernal pool fairy shrimp.

4.1. Recommendations

In 2017-2018, monitoring will continue in accordance with the City's GOSMP. The following recommendations for the Preserve include:

- Continue regular trash pick-up within the individual Preserve areas.
- Implement invasive species management strategies recommended in the *Rocklin Open Space Invasive Species and Habitat Mapping Letter Report* (Foothill Associates 2016) as follows:
 - Test the efficiency and accuracy of using drone surveys to monitor invasive species;
 - Continue application of “EZ-Ject” Lance, an herbicide injection tool, to aid in efforts to remove and control invasive species;
 - Cut and remove Chinese tallow trees starting from the upper ends of the drainages. To avoid impacts to nesting birds, trees should be removed outside of the nesting season (February 15 to August 30), if possible. This work would be done under the existing Memorandum of Understanding (MOU) with the California Department of Fish and Wildlife (CDFW) for stream channel maintenance. The City should work to develop a replanting program to replace removed trees with native trees. Native tree planting is a good project for volunteers;
 - Mow or cut Himalayan blackberry and remove vines. Revisit control areas monthly to remove additional vines or rootstock or allow targeted grazing by goats to eat new growth. To avoid impacts to nesting birds, vines should be removed outside of the nesting season (February 15 to August 30), if possible. This work would be done under the existing MOU with the CDFW for stream channel maintenance. The City should work to develop a replanting program to replace removed Himalayan blackberry with native shrubs. Manual removal of blackberry root mass or young/re-sprouted plants and planting native shrubs may be a suitable project for volunteers;
 - Select certain areas (such as OC-1, WR-2, WR-3, WR-5, SR-12 to SR-16, SW-4, SW-6 and SW-8) for targeted yellow star-thistle control. Adjust grazing program on these areas to ensure intense pressure from May through June. Consider treating these areas with targeted herbicides between January and March. Potentially seed with native plants next winter to help establish a cover crop to compete with yellow star-thistle. Monitor and adjust control techniques in future years depending on their success in reducing the yellow star-thistle population. Once a successful eradication

protocol has been determined, it can be used on other areas of the OSP that are more prone to re-infestation from adjacent open space;

- Remove pampas grass by either digging out root mass or cutting and treating with herbicide, depending on the size of the plant. This work would be done under the existing MOU with the CDFW for stream channel maintenance. Manual removal of pampas grass is a good project for volunteers; and
 - Treat water hyacinth with a glyphosphate herbicide approved for use in aquatic environments as soon as possible. The City has explored this and found difficulty in getting the necessary permits/clearances to use aquatic pesticides.
- Develop a master restoration plan with standard procedures and typical plans for addressing invasive species removal, bank stabilization, or other similar restoration goals to facilitate implementation of restoration activities within the Preserve in the future.
 - Conduct annual invasive species, RDM, vernal pool invertebrate, and riparian monitoring in accordance with the GOSMP.
 - With the exception of vernal pools containing listed species, consider surveying a new randomized set of vernal pools in 2017-2018.
 - Replace vernal pool #56 in the sampling regime with a different feature as its vegetation composition would classify it as a seasonal wetland and not a vernal pool.

A summary of how the monitoring goals established in the GOSMP were addressed during the 2016-2017 annual monitoring year and the next steps required for each goal is shown below in **Table 7**.

TABLE 7 — SUMMARY AND STATE OF MONITORING GOALS

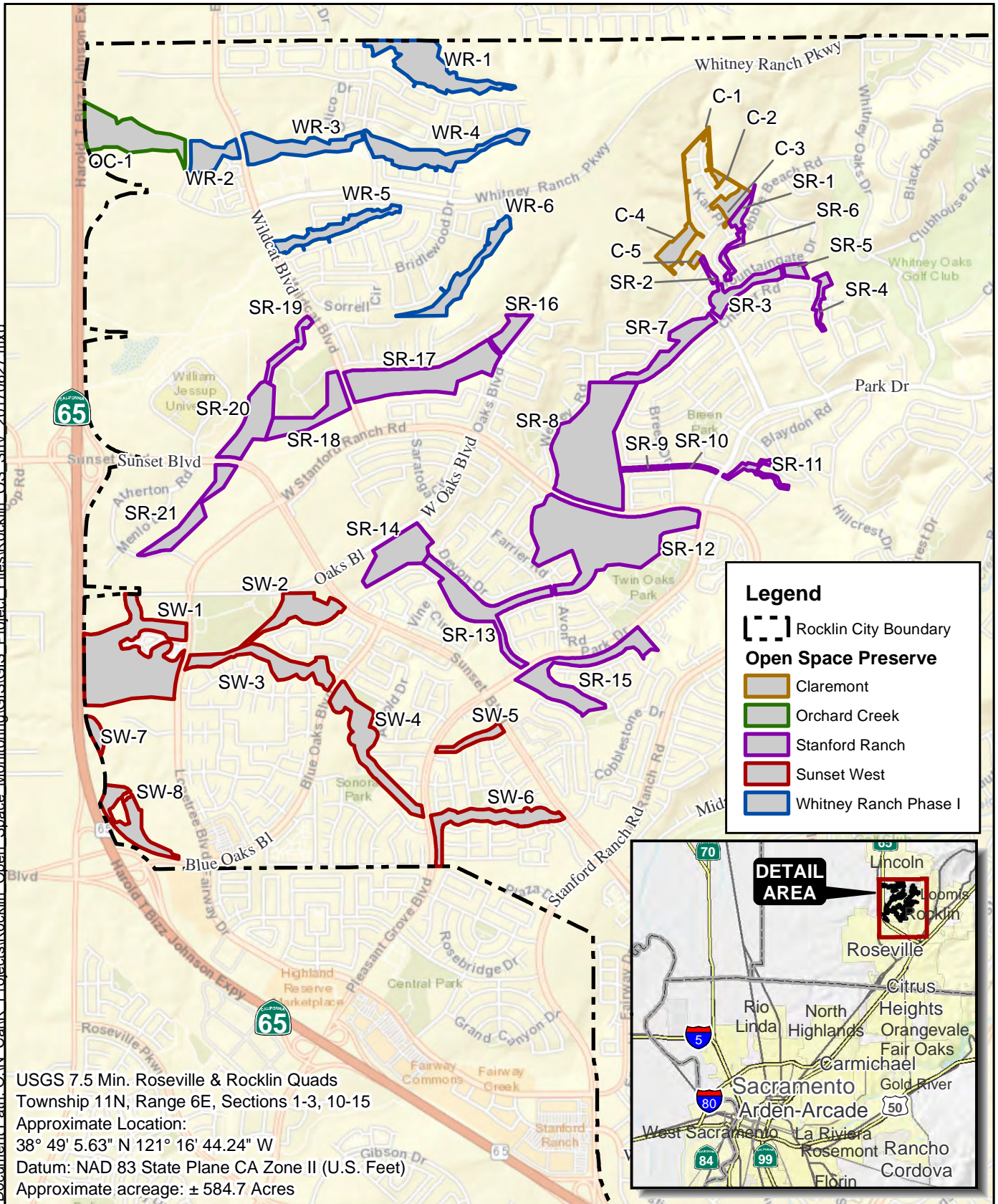
Goal Number	Goal Description	How Addressed	Next Step
6-1	Maintain an accurate map of waters of the U.S. within Preserve.	Completed in 2016.	Update in 10 years (2026)
6-2	Identify and map quality of native communities. Prioritize areas to receive resources with priority given to high quality habitat.	Completed in 2016.	Update in 10 years (2026)
6-3	Create and maintain detailed maps of Preserve areas.	Completed in 2016.	Update in 5 years (2021)
6-4	Create and maintain an inventory of potential habitat and occupied habitat for special-status species that are likely to occur within the Preserve.	Ongoing	Special-status plant and wildlife surveys conducted in 2017-2018.
6-5	Maintain existing populations of endangered species.	Ongoing, surveys for vernal pool invertebrates and VELB completed.	Conduct surveys for vernal pool invertebrates and VELB in 2016-2017.
6-6	Conduct survey for other native animal species.	Complete.	Maintain observed wildlife list in 2017-2018.
6-7	Maintain a database of beaver dams within the Preserve.	Ongoing (See Figure 8)	Maintain observed list in 2017-2018.
6-8	Track changes in vegetation community species composition.	Completed in 2016	Update in 10 years (2026)
6-9	Conduct surveys for special-status plants that are likely to occur in the Preserve.	Completed in 2016-2017.	Conduct special-status plant surveys in 5 years (2022)
6-10	Map oak tree canopy within the Preserve.	Completed in 2016.	Update in 10 years (2026)
6-11	Monitor wetland and riparian areas twice throughout the year.	Completed in 2016-2017.	Monitor in 2017-2018
6-12	Monitor oak woodland two times throughout the year.	Completed in 2016.	Conduct survey in 5 years (2021) Update baseline survey in 10 years (2026)
6-13	Monitor vernal pool grassland two times throughout the year.	Completed in 2016-2017.	Monitor in 2017-2018

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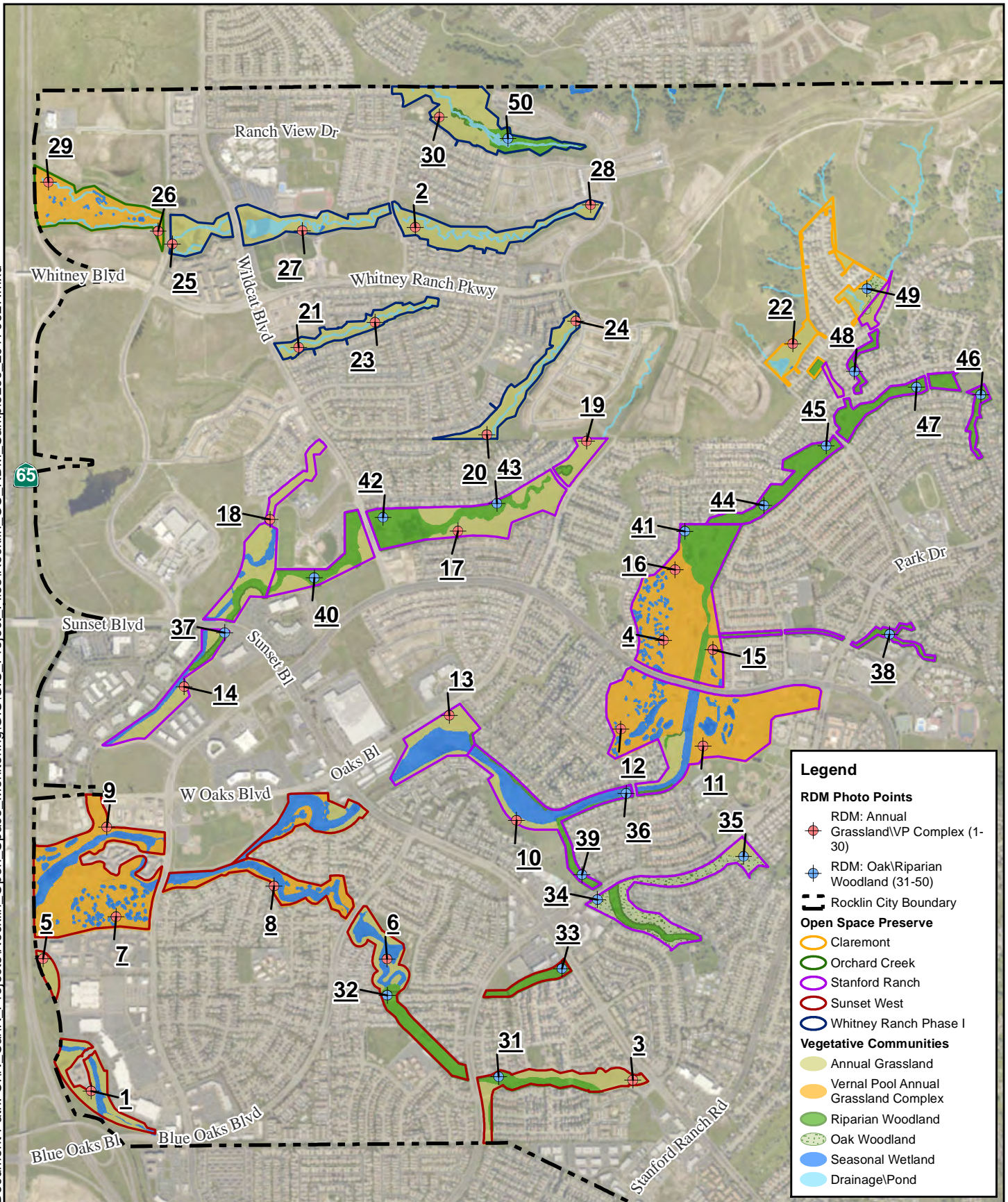
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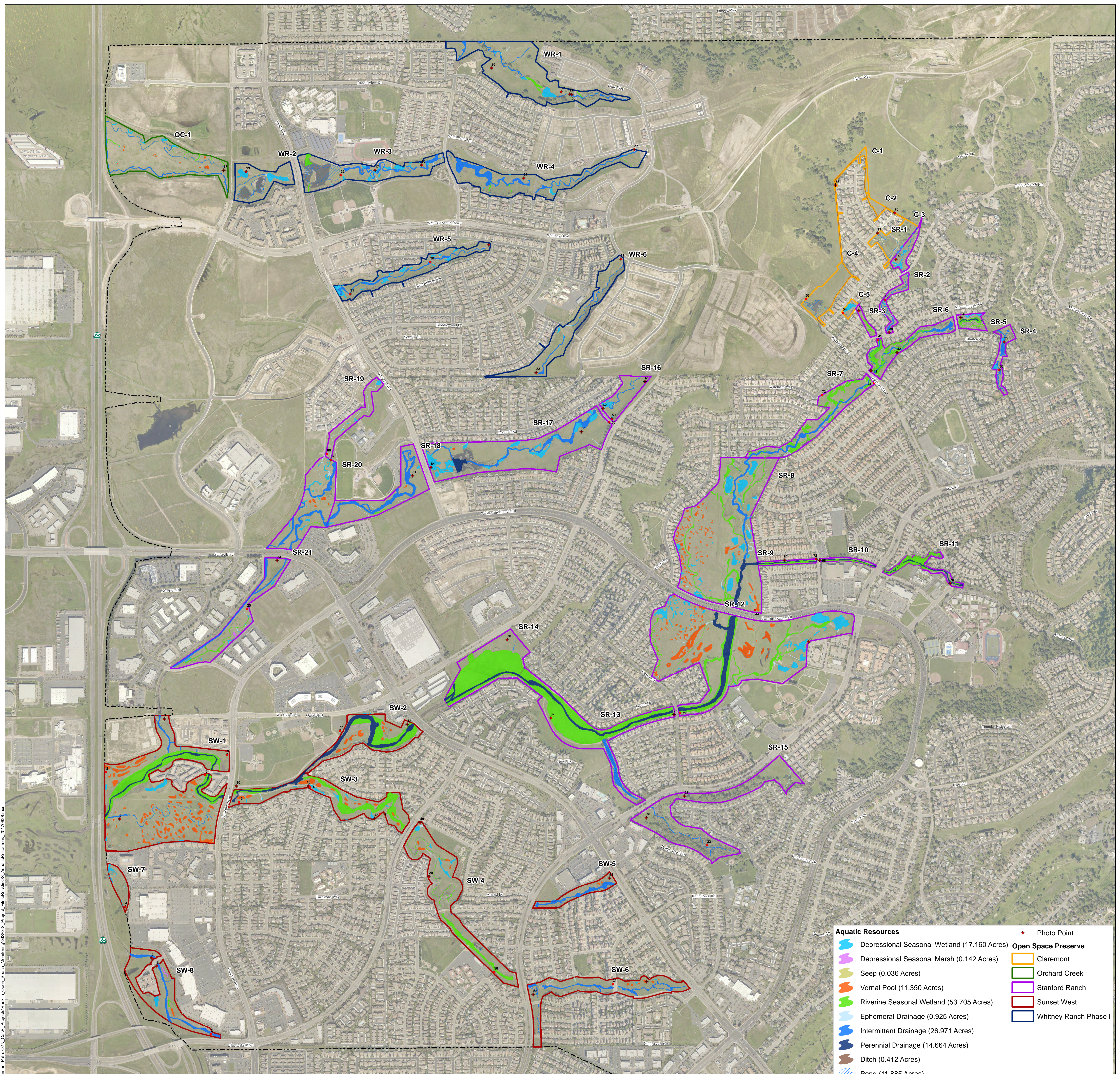
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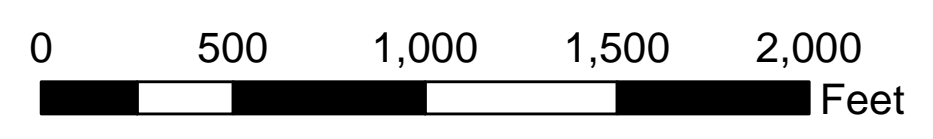


LOCATION OF RDM MONITORING POINTS

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Aquatic Resources		Photo Point
	Depressional Seasonal Wetland (17.160 Acres)	
	Depressional Seasonal Marsh (0.142 Acres)	Open Space Preserve
	Seep (0.036 Acres)	
	Vernal Pool (11.350 Acres)	
	Riverine Seasonal Wetland (53.705 Acres)	
	Ephemeral Drainage (0.925 Acres)	
	Intermittent Drainage (26.971 Acres)	
	Perennial Drainage (14.664 Acres)	
	Ditch (0.412 Acres)	
	Pond (11.885 Acres)	

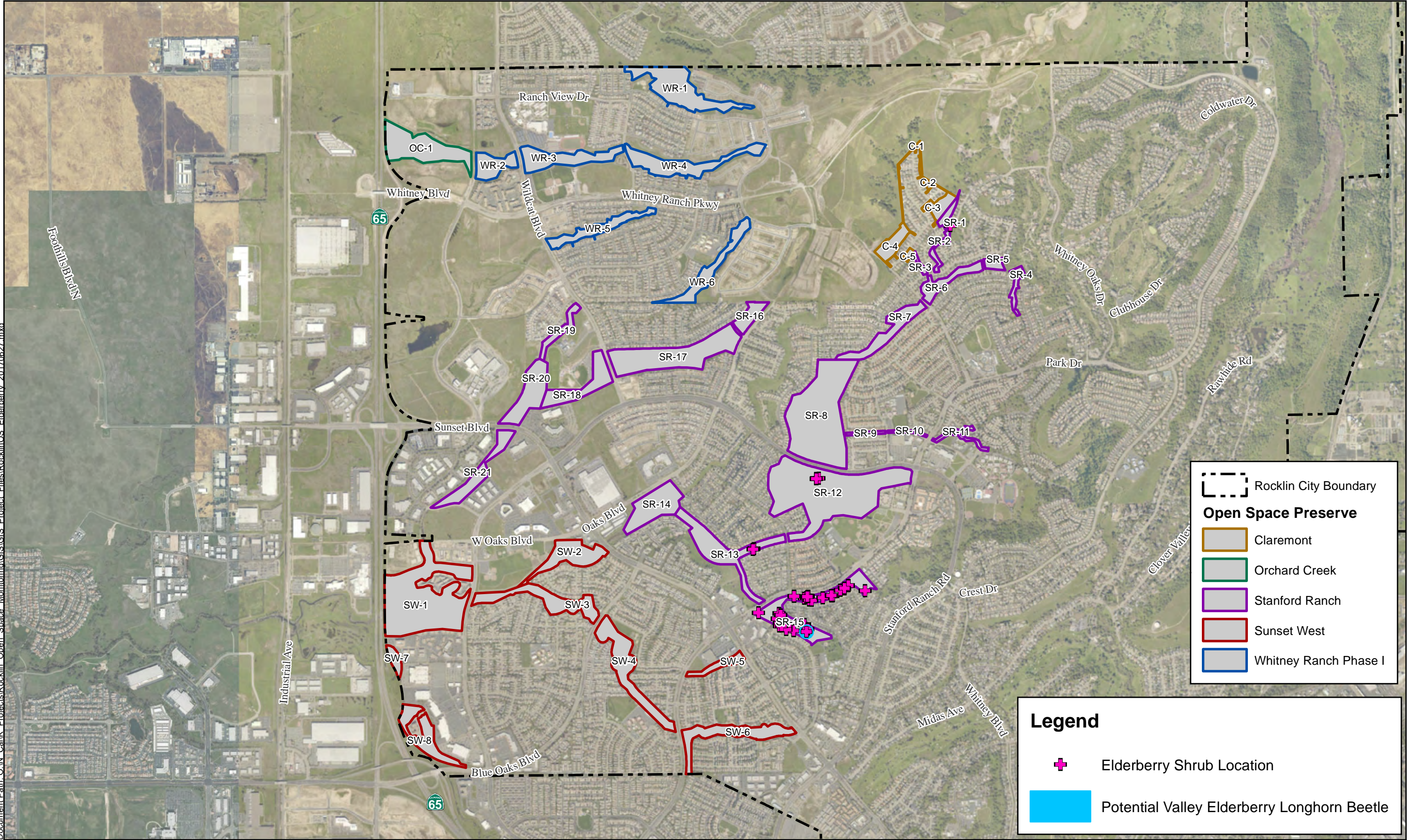


1 inch = 500 feet

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Figure 3 - Aquatic Resources

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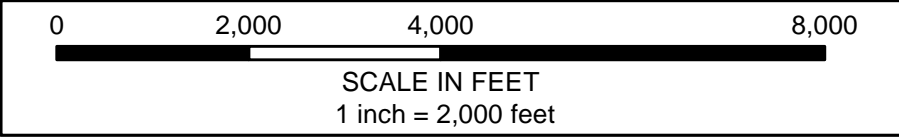
Rocklin City Boundary

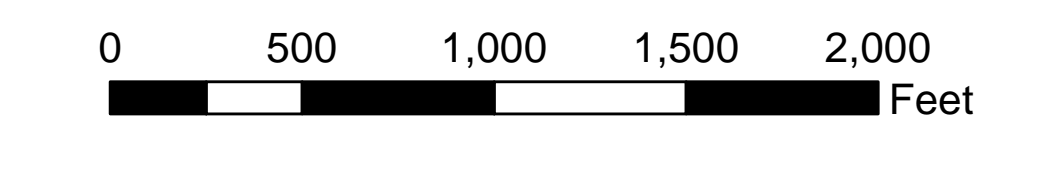
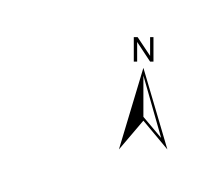
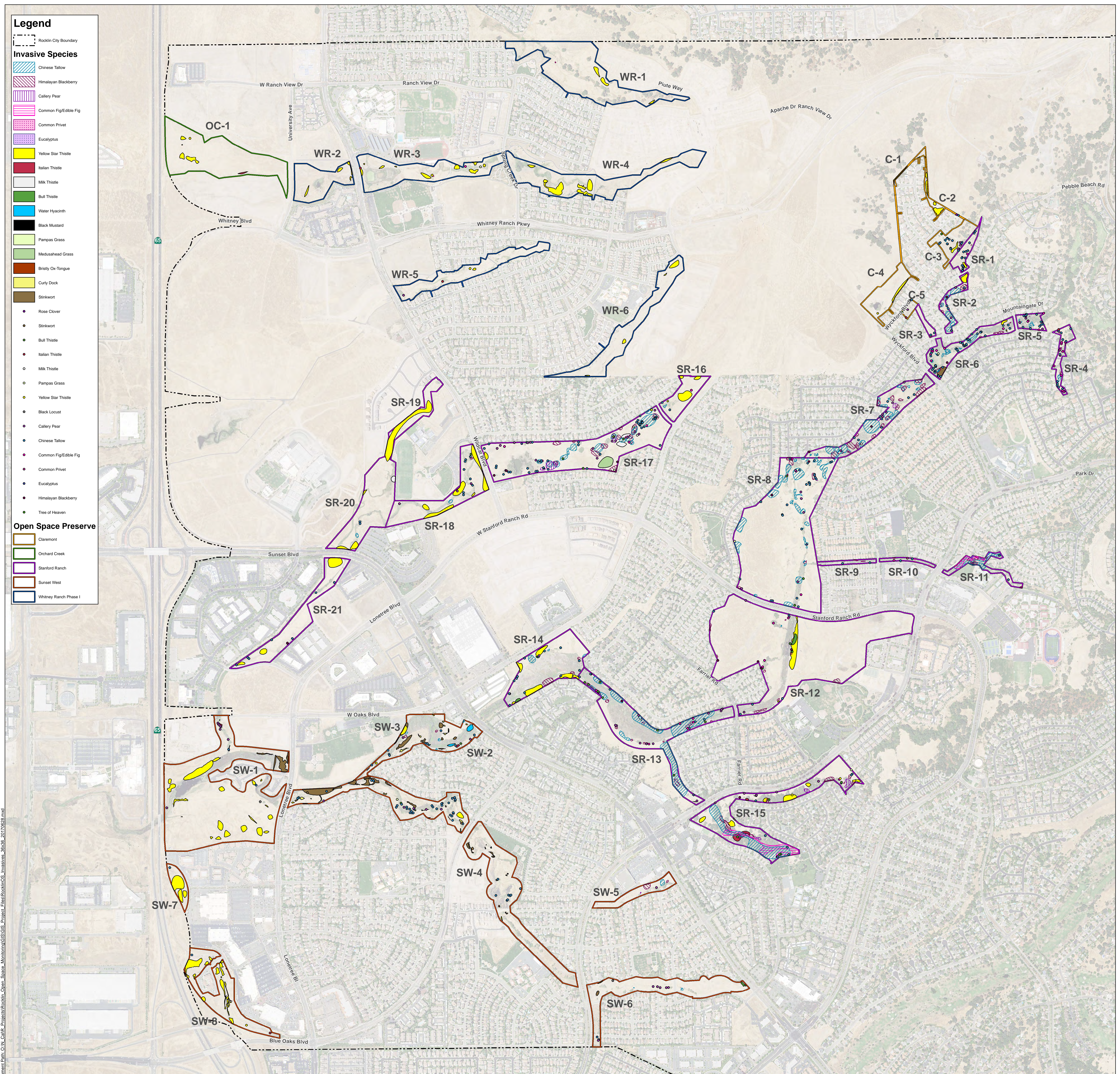
Open Space Preserve

- Claremont
- Orchard Creek
- Stanford Ranch
- Sunset West
- Whitney Ranch Phase I

Legend

- Elderberry Shrub Location
- Potential Valley Elderberry Longhorn Beetle

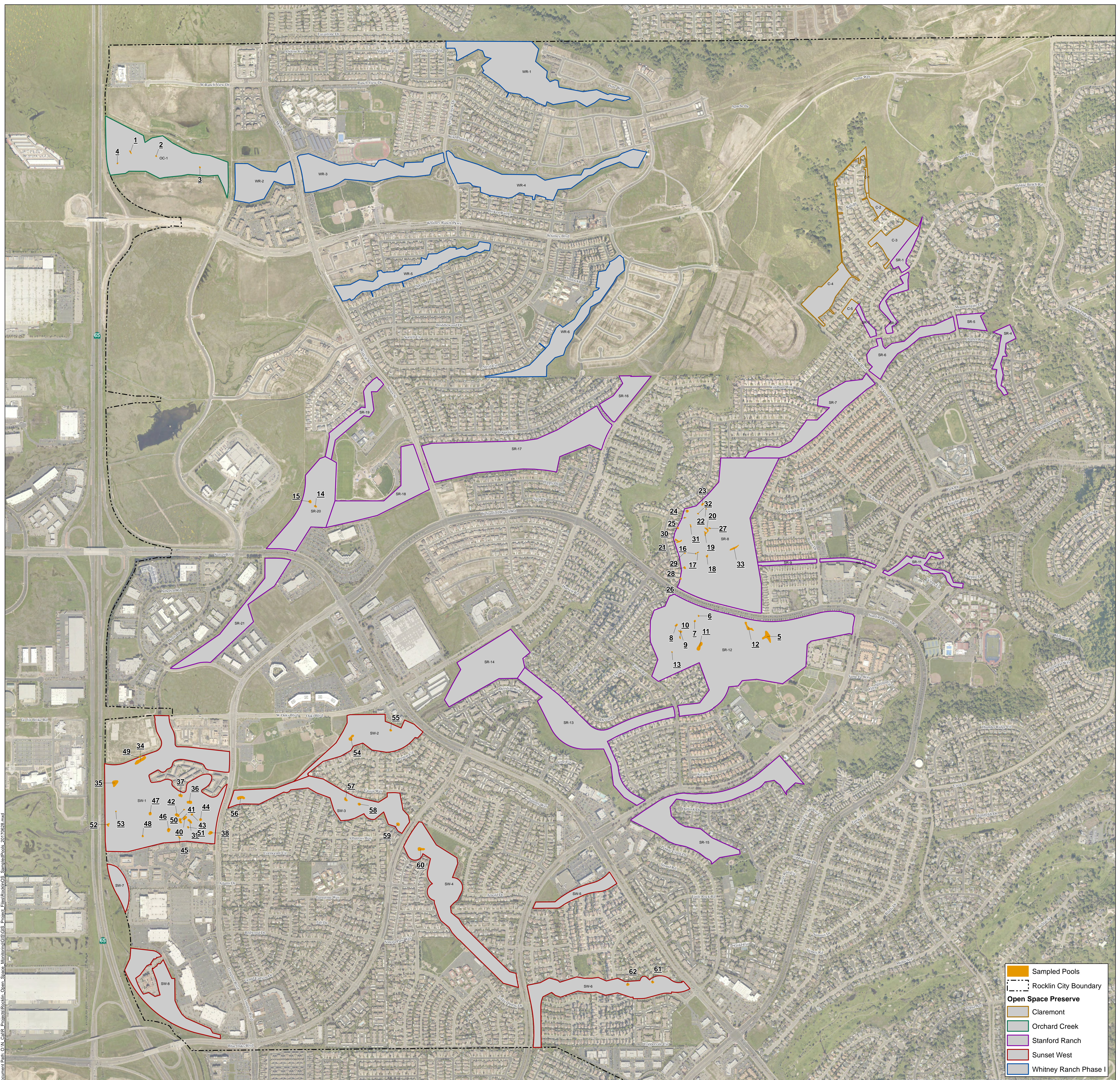




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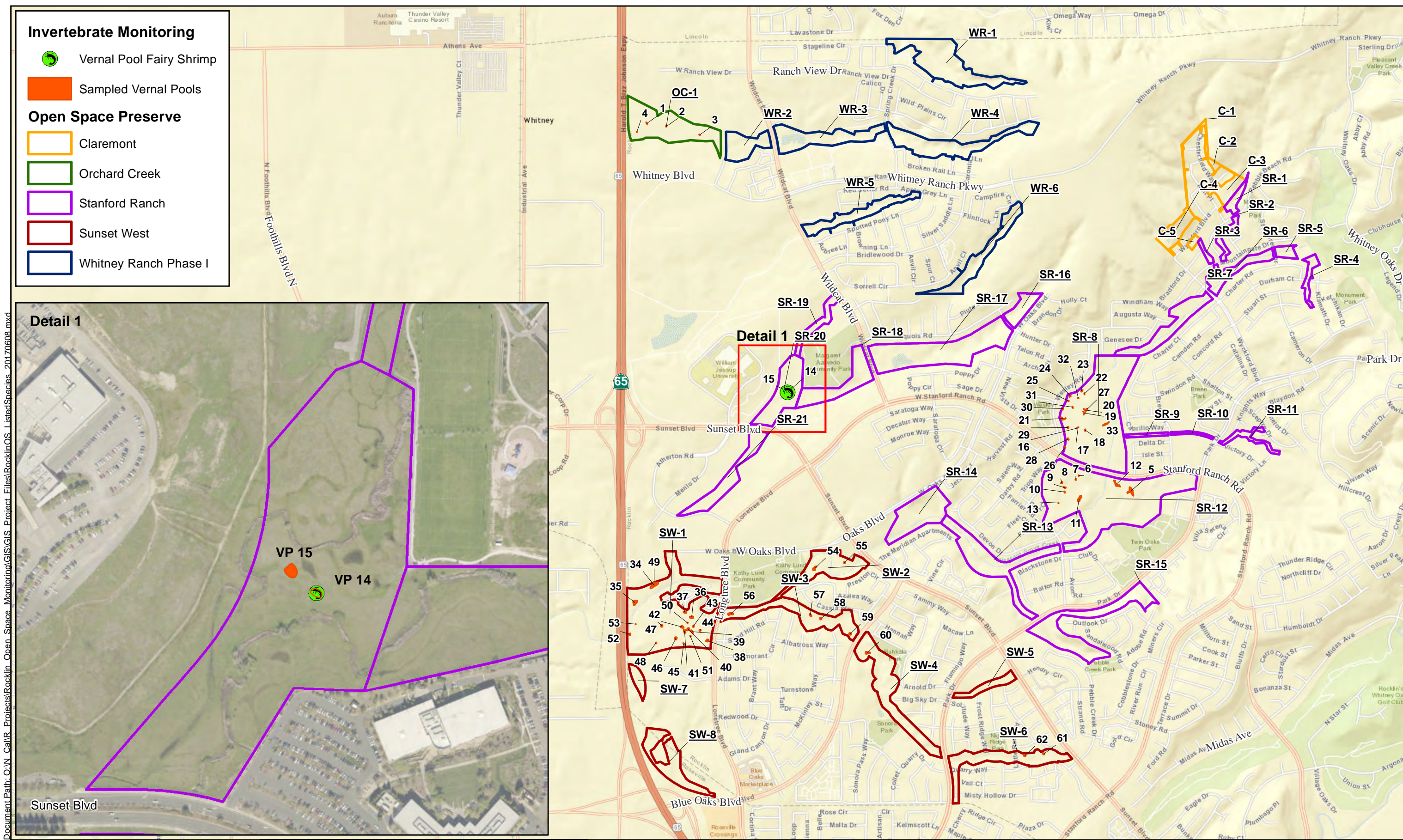
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Figure 5
Invasive Species

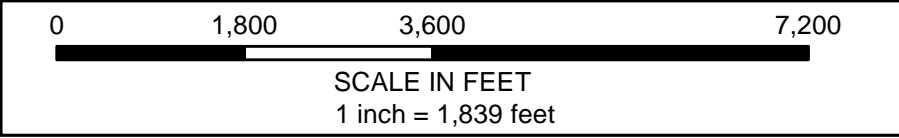


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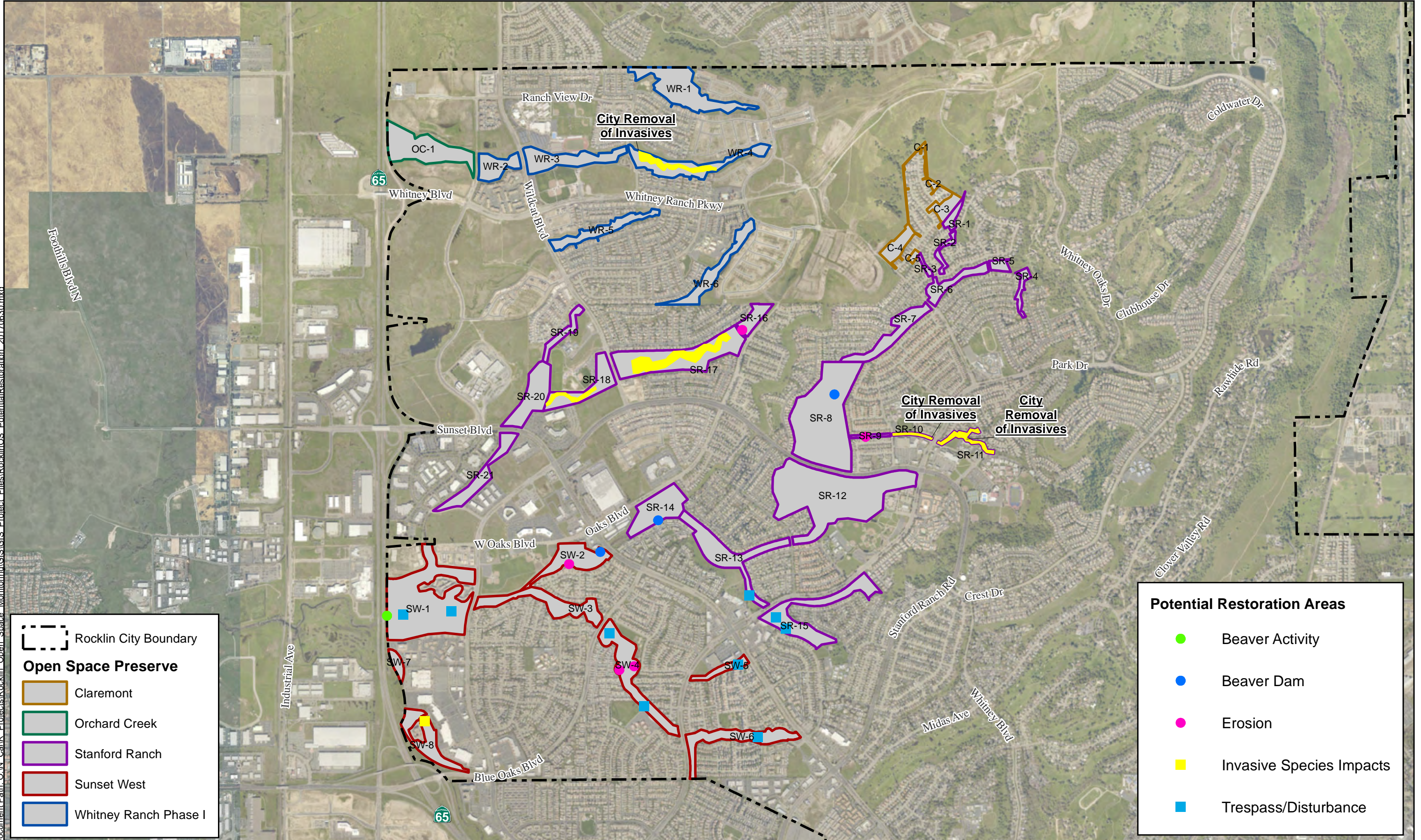
- Sampled Pools
- Rocklin City Boundary
- Open Space Preserve**
 - Claremont
 - Orchard Creek
 - Stanford Ranch
 - Sunset West
 - Whitney Ranch Phase I



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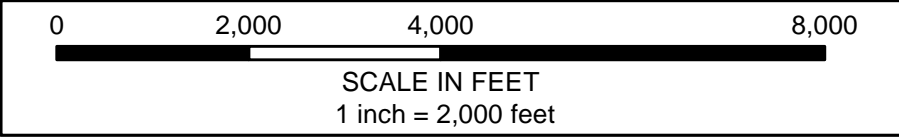
Rocklin City Boundary

Open Space Preserve

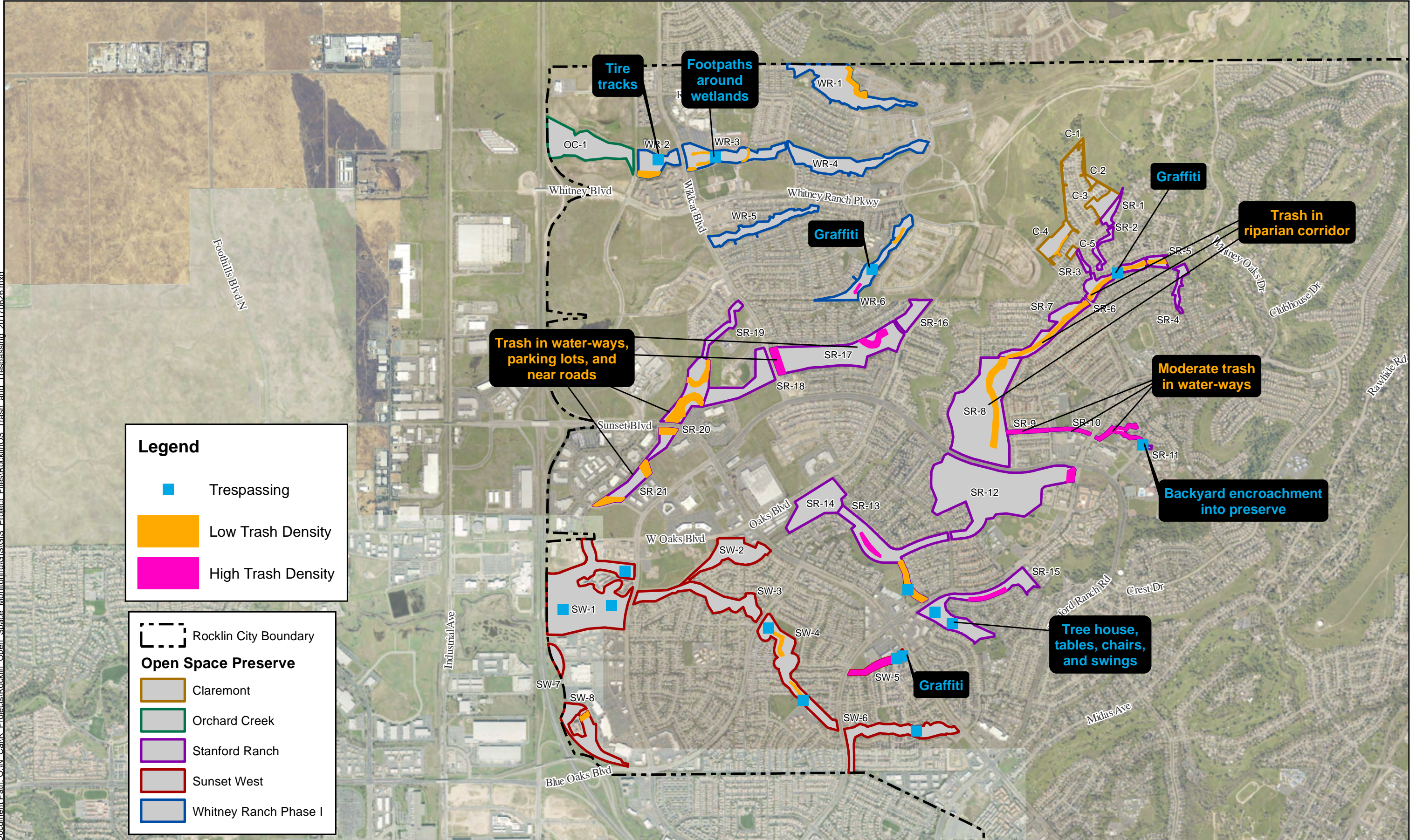
- Claremont
- Orchard Creek
- Stanford Ranch
- Sunset West
- Whitney Ranch Phase I

Potential Restoration Areas

- Beaver Activity
- Beaver Dam
- Erosion
- Invasive Species Impacts
- Trespass/Disturbance



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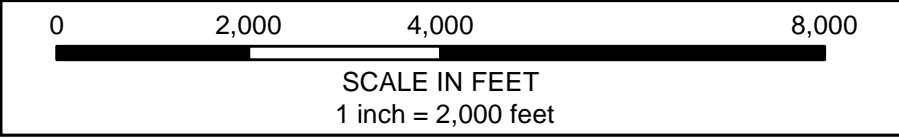
- Trespassing
- Low Trash Density
- High Trash Density

Open Space Preserve

- Claremont
- Orchard Creek
- Stanford Ranch
- Sunset West
- Whitney Ranch Phase I

Rocklin City Boundary

Rocklin City Boundary



Appendix A — Representative Site Photographs



Description: Great horned owl perched in a willow tree in Claremont (C-4) Preserve.

Date: October 19, 2016 Photographer: M. Britts



Description: Open Space/Wetland Preserve sign in Claremont.

Date: October 19, 2016 Photographer: J. Inman

REPRESENTATIVE SITE PHOTOGRAPHS



Description: RDM Point #22 in Claremont (C-4).

Date: October 19, 2016 Photographer: M. Brits



Description: Overview of one of the Claremont Preserves.

Date: October 19, 2016 Photographer: M. Brits

REPRESENTATIVE SITE PHOTOGRAPHS



Description: RDM Point #26 in Orchard Creek, facing west.

Date: October 5, 2017

Photographer: M. Brits



Description: Invertebrate sampling in Orchard Creek Pool #2.

Date: March 8, 2017

Photographer: M. Brits

REPRESENTATIVE SITE PHOTOGRAPHS



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APPENDIX A



Description: Floristic monitoring in Orchard Creek, Pool #3.

Date: May 10, 2017

Photographer: M. Britts



Description: Surveying Orchard Creek for special-status species.

Date: May 10, 2017

Photographer: M. Britts

REPRESENTATIVE SITE PHOTOGRAPHS



Description: Whitney Ranch Open Space (WR-6).

Date: April 24, 2017

Photographer: C. Marks



Description: Great blue heron observed in Stanford Ranch (SR-17).

Date: September 18, 2016

Photographer: J. Inman

REPRESENTATIVE SITE PHOTOGRAPHS



Description: RDM Point #10 in Stanford Ranch (SR-13).

Date: October 11, 2016

Photographer: M. Britts



Description: Invertebrate sampling, *B. lynchi* in 1000s observed.

Date: May 1, 2017

Photographer: C. Marks

REPRESENTATIVE SITE PHOTOGRAPHS



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APPENDIX A



Description: Floristic monitoring in Stanford Ranch (SR-12).

Date: May 12, 2017

Photographer: M. Brilts



Description: Riparian monitoring in Stanford Ranch.

Date: April 10, 2017

Photographer: Z. Neider

REPRESENTATIVE SITE PHOTOGRAPHS



Description: Potential valley elderberry longhorn beetle exit hole in elderberry shrub, Stanford Ranch (SR-15).

Date: May 10, 2017

Photographer: M. Britts



Description: Riparian monitoring, Sunset West (SW-1).

Date: May 1, 2017

Photographer: Z. Neider

REPRESENTATIVE SITE PHOTOGRAPHS



Description: RDM Point #9 in Sunset West (SW-1).

Date: September 30, 2016 Photographer: Z. Neider



Description: Floristic monitoring, Sunset West Pool #54.

Date: May 10, 2017 Photographer: M. Britts

REPRESENTATIVE SITE PHOTOGRAPHS

Appendix B — Observed Plant and Wildlife Species Lists

Claremont Preserve Area

**Claremont Preserve Area
Plant List**

Scientific Name	Common Name
<i>Avena fatua</i>	Wild oat
<i>Brassica rapa</i>	Field mustard
<i>Bromus diandrus</i>	Ripgut grass
<i>Bromus hordeaceus</i>	Soft chess
<i>Carduus pycnocephalus</i>	Italian thistle
<i>Centaurea solstitialis</i>	Yellow star thistle
<i>Elymus caput-medusae</i>	Medusahead
<i>Festuca perennis</i>	Rye grass
<i>Ficus carica</i>	Edible fig
<i>Foeniculum vulgare</i>	Sweet fennel
<i>Hordeum marinum</i>	Seaside barley
<i>Hordeum murinum</i>	Foxtail barley
<i>Plantago lanceolata</i>	English plantain
<i>Pyrus calleryana</i>	Callery pear
<i>Raphanus sativus</i>	Wild radish
<i>Rubus armeniacus</i>	Himalayan blackberry
<i>Rumex crispus</i>	Curly dock
<i>Silybum marianum</i>	Milk thistle
<i>Triadica sebifera</i>	Chinese tallowtree
<i>Trifolium dubium</i>	Little hop clover
<i>Trifolium hirtum</i>	Rose clover
<i>Amsinckia menziesii</i>	Common fiddleneck
<i>Delphinium sp.</i>	Larkspur
<i>Erodium botrys</i>	Filaree
<i>Holocarpha virgata</i>	Tarplant
<i>Lupinus bicolor</i>	Miniature lupine
<i>Quercus lobata</i>	Valley oak
<i>Rubus armeniacus</i>	Himalayan blackberry
<i>Schoenoplectus sp.</i>	Bulrush
<i>Sonchus sp.</i>	Sowthistle

**Claremont Preserve Area
Wildlife List**

Scientific Name	Common Name
<i>Aphelocoma californica</i>	Western scrub jay
<i>Bubo virginianus</i>	Great horned owl
<i>Lepus californicus</i>	Black-tailed jackrabbit
<i>Melospiza crissalis</i>	California towhee
<i>Mimus polyglottos</i>	Northern mockingbird
<i>Spinus tristis</i>	American goldfinch
<i>Turdus migratorius</i>	American robin
<i>Zenaida macroura</i>	Mourning dove

Orchard Creek Preserve Area

Orchard Creek Preserve Area

Plant List

Scientific Name	Common Name
<i>Avena fatua</i>	Wild oat
<i>Brassica rapa</i>	Field mustard
<i>Bromus diandrus</i>	Ripgut grass
<i>Bromus hordeaceus</i>	Soft chess
<i>Carduus pycnocephalus</i>	Italian thistle
<i>Centaurea solstitialis</i>	Yellow star thistle
<i>Elymus caput-medusae</i>	Medusahead
<i>Festuca perennis</i>	Rye grass
<i>Ficus carica</i>	Edible fig
<i>Foeniculum vulgare</i>	Sweet fennel
<i>Galium aparine</i>	Common bedstraw
<i>Plantago lanceolata</i>	English plantain
<i>Pyrus calleryana</i>	Callery pear
<i>Raphanus sativus</i>	Wild radish
<i>Rubus armeniacus</i>	Himalayan blackberry
<i>Rumex crispus</i>	Curly dock
<i>Triadica sebifera</i>	Chinese tallowtree
<i>Trifolium dubium</i>	Little hop clover
<i>Trifolium hirtum</i>	Rose clover

**Orchard Creek Preserve Area
Wildlife List**

Scientific Name	Common Name
<i>Aphelocoma californica</i>	Western scrub jay
<i>Buteo jamaicensis</i>	Red-tailed hawk
<i>Charadrius vociferus</i>	Killdeer
<i>Colaptes auratus</i>	Northern flicker
<i>Lepus californicus</i>	Black-tailed jackrabbit
<i>Melospiza crissalis</i>	California towhee
<i>Mimus polyglottos</i>	Northern mockingbird
<i>Sayornis nigricans</i>	Black phoebe
<i>Zenaidura macroura</i>	Mourning dove

Stanford Ranch Preserve Area

Stanford Ranch Preserve Area

Plant List

Scientific Name	Common Name
<i>Bromus hordeaceus</i>	Soft chess
<i>Achillea millefolium</i>	Common yarrow
<i>Acmispon (L. purshianus)</i>	Spanish lotus
<i>Acmispon americanus</i>	American bird's foot trefoil
<i>Aira caryophyllea</i>	Silver hair grass
<i>Avena fatua</i>	Wild oat
<i>Baccharis pilularis</i>	Coyote brush
<i>Brassica rapa</i>	Field mustard
<i>Bromus diandrus</i>	Ripgut grass
<i>Carduus pycnocephalus</i>	Italian thistle
<i>Carex sp.</i>	Sedge
<i>Centaurea solstitialis</i>	Yellow star thistle
<i>Centromadia fitchii</i>	Spikeweed
<i>Cercis occidentalis</i>	Western redbud
<i>Cichorium intybus</i>	Chicory
<i>Convolvulus arvensis</i>	Field bindweed
<i>Croton setigerus</i>	Turkey-mullein
<i>Cyperus eragrostis</i>	Nutsedge
<i>Datura wrightii</i>	Jimson weed
<i>Dysphania ambrosioides</i>	Mexican tea
<i>Eleocharis macrostachya</i>	Spikerush
<i>Elymus caput-medusae</i>	Medusahead
<i>Epilobium ciliatum</i>	Willowherb
<i>Erodium botrys</i>	Filaree
<i>Eschscholzia californica</i>	California poppy
<i>Eschscholzia lobbii</i>	Frying pan poppy
<i>Festuca perennis</i>	Rye grass
<i>Ficus carica</i>	Edible fig
<i>Filago sp.</i>	Cottonrose
<i>Foeniculum vulgare</i>	Sweet fennel
<i>Fraxinus latifolia</i>	Oregon ash
<i>Galium aparine</i>	Common bedstraw
<i>Holocarpha virgata</i>	Tarweed
<i>Hordeum marinum</i>	Mediterranean barley
<i>Hordeum murinum</i>	Foxtail barley
<i>Hypochaeris glabra</i>	Smooth cat's-ear
<i>Juncus balticus</i>	Baltic rush
<i>Juncus patens</i>	Spreading rush
<i>Lactuca serriola</i>	Prickly lettuce
<i>Ligustrum sp.</i>	Privet
<i>Lysimachia arvensis</i>	Scarlet pimpernel
<i>Mentha pulegium</i>	Pennyroyal
<i>Paspalum dilatatum</i>	Dallis grass
<i>Petrorhagia dubia</i>	Pink grass
<i>Phoradendron leucarpum</i>	Big leaf mistletoe
<i>Pinus sabiniana</i>	Bull pine

Stanford Ranch Preserve Area

Plant List

Scientific Name	Common Name
<i>Plantago lanceolata</i>	English plantain
<i>Polygonum</i> sp.	Knotweed
<i>Polypogon monspeliensis</i>	Rabbitsfoot grass
<i>Populus fremontii</i> ssp. <i>fremontii</i>	Fremont cottonwood
<i>Pyrus calleryana</i>	Callery pear
<i>Quercus douglasii</i>	Blue oak
<i>Quercus kelloggii</i>	Black oak
<i>Quercus lobata</i>	Valley oak
<i>Raphanus sativus</i>	Wild radish
<i>Robinia pseudoacacia</i>	Black locust
<i>Rubus armeniacus</i>	Himalayan blackberry
<i>Rumex acetosella</i>	Common sheep sorrel
<i>Rumex crispus</i>	Curly dock
<i>Salix exigua</i>	Narrow leaved willow
<i>Salix laevigata</i>	Red willow
<i>Salix</i> sp.	Willow
<i>Schoenoplectus</i> sp.	Bulrush
<i>Symphotrichum chilense</i>	Purple aster
<i>Torilis arvensis</i>	Field hedge parsley
<i>Toxicodendron diversilobum</i>	Poison oak
<i>Triadica sebifera</i>	Chinese tallowtree
<i>Trichostema lanceolatum</i>	Vinegar weed
<i>Trifolium arvense</i>	Rabbitfoot clover
<i>Trifolium aureum</i>	Golden clover
<i>Trifolium bifidum</i>	Notch leaf clover
<i>Trifolium depauperatum</i>	Cowbag clover
<i>Trifolium dubium</i>	Little hop clover
<i>Trifolium hirtum</i>	Rose clover
<i>Triteleia laxa</i>	Ithuriel's spear
<i>Typha angustifolia</i>	Narrow-leaved cattail
<i>Typha latifolia</i>	Common cattail
<i>Verbascum blattaria</i>	Moth mullein
<i>Verbascum thapsus</i>	Woolly mullein
<i>Vicia villosa</i>	Hairy vetch
<i>Vitis californica</i>	California grape

**Stanford Ranch Preserve Area
Wildlife List**

Scientific Name	Common Name
<i>Anas platyrhynchos</i>	Mallard
<i>Aphelocoma californica</i>	Western scrub-jay
<i>Ardea alba</i>	Great egret
<i>Ardea herodias</i>	Great blue heron
<i>Branta canadensis</i>	Canada Goose
<i>Buteo jamaicensis</i>	Red-tailed hawk
<i>Callipepla californica</i>	California quail
<i>Canis latrans</i>	Coyote
<i>Cathartes aura</i>	Turkey vulture
<i>Ceryle alcyon</i>	Belted king fisher
<i>Clemmys marmorata</i>	Western pond turtle
<i>Colaptes auratus</i>	Northern flicker
<i>Columba livia</i>	Rock pigeon
<i>Haemorhous mexicanus</i>	House finch
<i>Junco hyemalis</i>	Dark-eyed Junco
<i>Lampropeltis californiae</i>	King snake
<i>Lepus californicus</i>	Black-tailed jackrabbit
<i>Melanerpes formicivorus</i>	Acorn woodpecker
<i>Meleagris gallopavo</i>	Wild turkey
<i>Odocoileus hemionus</i>	Black-tailed deer
<i>Passerculus sandwichensis</i>	Savannah sparrow
<i>Phasianus colchicus</i>	Ring-necked pheasant
<i>Pipilo maculatus</i>	Spotted towhee
<i>Procyon lotor</i>	Raccoon
<i>Pseudacris sierra</i>	Sierran treefrog
<i>Sayornis nigricans</i>	Black phoebe
<i>Sceloporus occidentalis</i>	Western fence lizard
<i>Tyto alba</i>	Barn owl
<i>Zenaida macroura</i>	Mourning dove

Sunset West Preserve Area

Sunset West Preserve Area

Plant List

Scientific Name	Common Name
<i>Acmispon purshianus</i>	Spanish lotus
<i>Avena fatua</i>	Wild oat
<i>Baccharis pilularis</i>	Coyote brush
<i>Brassica rapa</i>	Field mustard
<i>Bromus diandrus</i>	Ripgut grass
<i>Bromus hordeaceus</i>	Soft chess
<i>Carduus pycnocephalus</i>	Italian thistle
<i>Centaurea solstitialis</i>	Yellow star thistle
<i>Croton setigerus</i>	Turkey-mullein
<i>Cyperus eragrostis</i>	Nutsedge
<i>Datura</i> sp.	Jimson weed
<i>Eleocharis macrostachya</i>	Spikerush
<i>Elymus caput-medusae</i>	Medusahead
<i>Epilobium ciliatum</i>	Willowherb
<i>Festuca perennis</i>	Rye grass
<i>Ficus carica</i>	Edible fig
<i>Foeniculum vulgare</i>	Sweet fennel
<i>Galium aparine</i>	Common bedstraw
<i>Holocarpha virgata</i>	Tarweed
<i>Hordeum marinum</i>	Mediterranean barley
<i>Juncus patens</i>	Spreading rush
<i>Lactuca serriola</i>	Prickly lettuce
<i>Mentha pulegium</i>	Pennyroyal
<i>Nerium oleande</i>	Oleander
<i>Paspalum dilatatum</i>	Dallis grass
<i>Plantago lanceolata</i>	English plantain
<i>Polygonum</i> sp.	Knotweed
<i>Polypogon monspeliensis</i>	Rabbitsfoot grass
<i>Pyrus calleryana</i>	Callery pear
<i>Quercus wislizeni</i>	Interior live oak
<i>Raphanus sativus</i>	Wild radish
<i>Rosa californica</i>	California wild rose
<i>Rubus armeniacus</i>	Himalayan blackberry
<i>Rumex crispus</i>	Curly dock
<i>Silybum marianum</i>	Milk thistle
<i>Sorghum halepense</i>	Johnsongrass
<i>Triadica sebifera</i>	Chinese tallowtree
<i>Trifolium dubium</i>	Little hop clover
<i>Trifolium hirtum</i>	Rose clover
<i>Typha angustifolia</i>	Narrow-leaved cattail

**Sunset West Preserve Area
Wildlife List**

Scientific Name	Common Name
<i>Aphelocoma californica</i>	Western scrub-jay
<i>Ardea alba</i>	Great egret
<i>Ardea herodias</i>	Great blue heron
<i>Buteo jamaicensis</i>	Red-tailed hawk
<i>Calypte anna</i>	Anna's Hummingbird
<i>Canis latrans</i>	Coyote
<i>Cathartes aura</i>	Turkey vulture
<i>Ceryle alcyon</i>	Belted kingfisher
<i>Colaptes auratus</i>	Northern flicker
<i>Columba livia</i>	Rock pigeon
<i>Corvus brachyrhynchos</i>	American crow
<i>Euphagus cyanocephalus</i>	Brewer's blackbird
<i>Haemorhous mexicanus</i>	House finch
<i>Junco hyemalis</i>	Dark-eyed Junco
<i>Lampropeltis californiae</i>	King snake
<i>Lepus californicus</i>	Black-tailed jackrabbit
<i>Megaceryle alcyon</i>	Belted kingfisher
<i>Melanerpes formicivorus</i>	Acorn woodpecker
<i>Mimus polyglottos</i>	Northern mockingbird
<i>Passer domesticus</i>	House sparrow
<i>Passerculus sandwichensis</i>	Savannah sparrow
<i>Phasianus colchicus</i>	Ring-necked pheasant
<i>Pipilo maculatus</i>	Spotted towhee
<i>Procyon lotor</i>	Raccoon
<i>Sayornis nigricans</i>	Black phoebe
<i>Sceloporus occidentalis</i>	Western fence lizard
<i>Turdus migratorius</i>	American robin
<i>Zenaida macroura</i>	Mourning dove

Whitney Ranch Preserve Area

**Whitney Ranch Preserve Area
Plant List**

Scientific Name	Common Name
<i>Avena fatua</i>	Wild oat
<i>Brassica rapa</i>	Field mustard
<i>Bromus diandrus</i>	Ripgut grass
<i>Bromus hordeaceus</i>	Soft chess
<i>Carduus pycnocephalus</i>	Italian thistle
<i>Centaurea solstitialis</i>	Yellow star thistle
<i>Elymus caput-medusae</i>	Medusahead
<i>Festuca perennis</i>	Rye grass
<i>Ficus carica</i>	Edible fig
<i>Foeniculum vulgare</i>	Sweet fennel
<i>Galium aparine</i>	Common bedstraw
<i>Plantago lanceolata</i>	English plantain
<i>Pyrus calleryana</i>	Callery pear
<i>Raphanus sativus</i>	Wild radish
<i>Rubus armeniacus</i>	Himalayan blackberry
<i>Rumex crispus</i>	Curly dock
<i>Triadica sebifera</i>	Chinese tallowtree
<i>Trifolium dubium</i>	Little hop clover
<i>Trifolium hirtum</i>	Rose clover
<i>Acmispon purshianus</i>	Spanish lotus
<i>Avena fatua</i>	Cultivated Oat
<i>Baccharis pilularis</i>	Coyote brush
<i>Centromadia fitchii</i>	Spikeweed
<i>Croton setigerus</i>	Turkey-mullein
<i>Cyperus eragrostis</i>	Nutsedge
<i>Datura sp.</i>	Jimson weed
<i>Eleocharis macrostachya</i>	Spikerush
<i>Epilobium ciliatum</i>	Willowherb
<i>Holocarpha virgata</i>	Tarweed
<i>Hordeum marinum</i>	Mediterranean barley
<i>Juncus patens</i>	Spreading rush
<i>Lactuca serriola</i>	Prickly lettuce
<i>Mentha pulegium</i>	Pennyroyal
<i>Paspalum dilatatum</i>	Dallis grass
<i>Polygonum sp.</i>	Knotweed
<i>Polypogon monspeliensis</i>	Rabbitsfoot grass
<i>Populus fremontii ssp. fremontii</i>	Fremont cottonwood
<i>Salix laevigata</i>	Red willow
<i>Trichostema lanceolatum</i>	Vinegar weed
<i>Typha angustifolia</i>	Narrow-leaved cattail

**Whitney Ranch Preserve Area
Plant List**

Scientific Name	Common Name
<i>Melanerpes formicivorus</i>	Acorn woodpecker
<i>Tyto alba</i>	Barn owl
<i>Aphelocoma californica</i>	Western scrub-jay
<i>Ardea alba</i>	Great egret
<i>Ardea herodias</i>	Great blue heron
<i>Buteo jamaicensis</i>	Red-tailed hawk
<i>Calypte anna</i>	Anna's hummingbird
<i>Canis latrans</i>	Coyote
<i>Cathartes aura</i>	Turkey vulture
<i>Colaptes auratus</i>	Northern flicker
<i>Columba livia</i>	Rock dove
<i>Elgaria multicarinata</i>	Southern alligator lizard
<i>Lampropeltis californiae</i>	King snake
<i>Lepus californicus</i>	Black-tailed jackrabbit
<i>Lithobates catesbeianus</i>	Bull frog
<i>Masticophis lateralis</i>	California whipsnake
<i>Mimus polyglottos</i>	Mockingbird
<i>Phasianus colchicus</i>	Ring-necked pheasant
<i>Sayornis nigricans</i>	Black phoebe
<i>Sceloporus occidentalis</i>	Western fence lizard
<i>Zenaida macroura</i>	Mourning dove

Appendix C — Vernal Pool Invertebrate Survey Datasheets

Invertebrate Sampling Data

Project Site: Rocklin Open Space	Date: 1/5/2017	Quad: Roseville & Rocklin
County: Placer	Time: 8:30 AM - 4:25 PM	Township: 11 North
Collectors: Charlotte Marks, Marisa Britts	Temp: 39°F and 47°F	Range: 6E
Permit #: TE-810380-5	Weather Conditions: overcast/cloudy, wind (~5mph)	Section: 1-3, 10-15

Vernal Pool #	Water Temp. (°C)	Water Depth (cm)	Estimated Maximum Depth (cm)	Present Surface Area (mxm)	Inundation (%)	Photo #	Crustacea						Turbellaria Flatworms	Insecta			Notes	
							Anostraca		Notostraca		Copepoda (Copepods)	Ostracoda (Seed Shrimp)		Coleoptera		Hemiptera		Diptera
							Vernal Pool Fairy Shrimp (B. lynchi)	California Lindberella	Vernal Pool Tadpole Shrimp	Cladocera (Water Fleas)				Conchostraca (Clam Shrimps)	Dytiscidae (Diving Water Beetles)	Halipilidae (Crawling Water Beetles)		Notonectidae (Backswimmers)
Orchard Creek																		
1	16	20	27.94	18x5	100%	7964						X						
2	15	25		4x5	100%	7963				X		X				X		
3	16	10	20.32	8x8	100%	7962						X	X					
4	16	8	12.70	6x6	98%	7965								X			spider	
Stanford Ranch (SR-12)																		
5	16	13	22.86	46x30	90%	7968, 7969				X		X						
6	11	3	7.62	1x2	20%	6											X	
7	10	15	17.78	3x3	100%	5				X							X	
8	9	15	20.32	6x3	100%	4							X				X	
9	9	8	30.48	9x3	100% +	3				X	X		X	X		X	Sierra tree frog (eggs)	
10	10	5	10.16	5x3	100%	2							X				X	
11	9	15	25.40	30x6	100%	1				X		X	X				Sierra tree frog (eggs)	
12	14	8	15.24	37x15	95%	7967							X					
13	11	3	10.16	2x1	100%	7						X	X					
Stanford Ranch (SR-8)																		
16	11	3	10.16	2x2	60%	11								X			X	
17	11	5	7.62	2x1	60%	12							X				X	
18	11	10	15.24	5x5	100%	13								X			X	
19	11	8	10.16	9x5	100%	17							X		X		X	
20	11	5	10.16	8x3	100%	16							X	X			X	
21	14	3	7.62	61x6	95%	18				X			X	X			X	
22	14	5	7.62	5x1	90%	23				X			X	X			X	
23	14	8	10.16	6x2	100%	24				X			X				X	
24	15	8	15.24	6x6	100%	21							X	X	X		X	
25	14	3	10.16	3x2	98%	25							X				X	
26	11	10	17.78	5x2	100%	8											X	

Invertebrate Sampling Data

Project Site: Rocklin Open Space							Date: 1/6/2017							Quad: Roseville & Rocklin						
County: Placer							Time: 10:00 AM - 3:00 PM							Township: 11 North						
Collectors: Charlotte Marks and Marisa Britts							Temp: 39°F to 43°F							Range: 6E						
Permit #: TE-810380-5							Weather Conditions: partly cloudy, wind (-4 mph)							Section: 1-3, 10-15						
Vernal Pool #	Water Temp. (°C)	Water Depth (cm)	Estimated Maximum Depth (cm)	Present Surface Area (mxm)	Inundation (%)	Photo #	Crustacea						Turbellaria Flatworms	Insecta				Notes		
							Anostraca		Notostraca		Cladocera (Water Fleas)	Conchostraca (Clam Shrimps)		Copepoda (Copepods)	Ostracoda (Seed Shrimp)	Coleoptera			Hemiptera (Backswimmers)	Diptera (Midge)
							Vernal Pool Fairy Shrimp (B. lynchi)	California Linderiella	Vernal Pool Tadpole Shrimp	Dytiscidae (Diving Water Beetles)						Halipilidae (Crawling Water Beetles)				
Sunset West (SW-3)																				
56	9	15	22.86	61x18	100%	1														
59	9	20	25.40	15x6	100%	2							x		x	x				
58	9	10	15.24	9x9	100% +	3				x						x				
57	9	20	30.48	12x12	100%	4										x				
Sunset West (SW-2)																				
54	9	13	20.32	9x9	100% +	5				x		x	x	x		Sierran tree frogs (eggs and tadpoles)				
55	9	15	22.86	9x9	100%	6		100's		x		x	x	x		male and female linderiella				
Sunset West (SW-1)																				
34	14	20	35.56	52x9	100%	7989				x			x		x					
35	15	18	30.48	21x15	75%	7990							x			water scavenger beetle				
38	11	13	22.86	18x9	98%	7979				x		x				mosquito larvae				
39	11	13	22.86	12x6	95%	7982														
40	11	23	40.64	18x9	100%	7981				x		x		x						
41	14	5	15.24	18x6	95%	7983							x	x						
42	13	13	20.32	18x9	100%	7985				x			x	x						
45	15	10	15.24	6x3	75%	7987							x							
46	15	10	17.78	12x9	90%	7986							x	x		mosquito larvae				
49	16	8	15.24	8x6	90%	7988							x			Sierran tree frogs (eggs and tadpoles)				
50	15	8	10.16	6x3	100%	7984								x		mosquito larvae				
51	14	10	17.78	8x6	100%	7980							x	x		mosquito larvae				
Sunset West (SW-6)																				
61	10	10	17.78	5x5	100%	7									x	Sierran tree frogs (eggs and tadpoles)				

Invertebrate Sampling Data

Project Site: Rocklin Open Space			Date: 1/6/2017			Quad: Roseville & Rocklin													
County: Placer			Time: 10:00 AM - 3:00 PM			Township: 11 North													
Collectors: Charlotte Marks and Marisa Britts			Temp: 39°F to 43°F			Range: 6E													
Permit #: TE-810380-5			Weather Conditions: partly cloudy, wind (-4 mph)			Section: 1-3, 10-15													
Vernal Pool #	Water Temp. (°C)	Water Depth (cm)	Estimated Maximum Depth (cm)	Present Surface Area (mxm)	Inundation (%)	Photo #	Crustacea						Turbellaria Flatworms	Insecta				Notes	
							Anostraca		Notostraca						Coleoptera		Hemiptera		Diptera
							Vernal Pool Fairy Shrimp (B. lynchi)	California Linderella	Vernal Pool Tadpole Shrimp	Cladocera (Water Fleas)	Conchostraca (Clam Shrimps)	Copepoda (Copepods)		Ostracoda (Seed Shrimp)	Dytiscidae (Diving Water Beetles)	Halipilidae (Crawling Water Beetles)	Nolonecitidae (Backswimmers)		Chironomidae (Midge)
62	10	10	15.24	6x5	100%	8							x					Sierran tree frogs (eggs and tadpoles)	

Invertebrate Sampling Data

Project Site: Rocklin Open Space							Date: 3/4/2017							Quad: Roseville & Rocklin						
County: Placer							Time: 10:00 AM							Township: 11 North						
Collectors: Charlotte Marks							Temp: 60°F							Range: 6E						
Permit #: TE-810380-5							Weather Conditions: sunny, partly cloudy, 1-2 mph wind							Section: 1-3, 10-15						
Vernal Pool #	Water Temp. (°C)	Water Depth (cm)	Estimated Maximum Depth (cm)	Present Surface Area (mxm)	Inundation (%)	Photo #	Crustacea						Turbellaria Flatworms	Insecta				Notes		
							Anostraca		Notostraca		Cladocera (Water Fleas)	Conchostraca (Clam Shrimps)		Copepoda (Copepods)	Ostracoda (Seed Shrimp)	Coleoptera			Hemiptera	Diptera
							Vernal Pool Fairy Shrimp (B. lynchi)	California Lindernella	Vernal Pool Tadpole Shrimp	Dytiscidae (Diving Water Beetles)						Halipilidae (Crawling Water Beetles)	Nolonecitidae (Backswimmers)		Chironomidae (Midge)	
Sunset West (SW-1)																				
34	14	20		23x9	98%	8312				x			x	x			x	Sierran tree frogs (tadpoles)		
35	16	8	20.32	9x17	80%	8314				x			x	x		x	x	Sierran tree frogs (tadpoles); mayfly larvae		
49	16	8	10.16	2x1	20%	8313				x			x	x				Sierran tree frogs (tadpoles); mayfly larvae		
Sunset West (SW-4)																				
60	17	15	25.40	14x9	98%	8315				x			x	x			x	Sierran tree frogs (tadpoles); mayfly larvae; mosquito larvae		
Sunset West (SW-6)																				
61	20	13	17.78	8x6	98%	8317				x								mayfly larvae; dragonfly larvae; Sierran tree frogs (tadpoles and adults)		
62						8316												Dry		
Sunset West (SW-2)																				
54	18	13	20.32	14x9	98%					x		x	x	x		x	x	Sierran tree frogs (tadpoles); mayfly larvae		
55	21	15	25.40	8x9	98%					x		x	x	x		x		frogs (tadpoles); mayfly larvae; spiders		
Sunset West (SW-3)																				
56						8331, 8332												Dry		
57	21	15	20.32	9x6	98%	8330				x			x	x				Sierran tree frogs (tadpoles); mayfly larvae; dragonfly larvae		
58	22	15	17.78	8x6	98%	8329							x	x	x		x	Sierran tree frogs (tadpoles); dragonfly larvae		
59	21	10	15.24	9x9	95%	8322				x				x		x		aquatic snails; Sierran tree frog (tadpoles); bullfrog (adult); mayfly larvae; dragonfly larvae		

Invertebrate Sampling Data

Project Site: Rocklin Open Space				Date: 3/8/2017				Quad: Roseville & Rocklin												
County: Placer				Time: 1:00 PM				Township: 11 North												
Collectors: Marisa Britts				Temp: 60°F				Range: 6E												
Permit #: TE-810380-5				Weather Conditions: sunny, partly cloudy, 1-2 mph wind				Section: 1-3, 10-15												
Vernal Pool #	Water Temp. (°C)	Water Depth (cm)	Estimated Maximum Depth (cm)	Present Surface Area (mxm)	Inundation (%)	Photo #	Crustacea						Turbellaria Flatworms	Insecta				Notes		
							Anostraca		Notostraca		Cladocera (Water Fleas)	Conchostraca (Clam Shrimps)		Copepoda (Copepods)	Ostracoda (Seed Shrimp)	Coleoptera			Hemiptera	Diptera
							Vernal Pool Fairy Shrimp (B. lynchi)	California Lindernella	Vernal Pool Tadpole Shrimp	Dytiscidae (Diving Water Beetles)						Halipitidae (Crawling Water Beetles)	Notonectidae (Backswimmers)		Chironomidae (Midge)	
Orchard Creek																				
1	21	10	15.24	4x2		3				x		x	x	x	x	x	x	x	Snail, mosquito larvae	
2	21	20	33.02	3x3		2				x			x	x	x				Mosquito larvae	
3	24	1	2.54	5x3		1													Sierran tree frogs (tadpoles); mayfly larvae	
4						4													Dry	

Invertebrate Sampling Data

Project Site: Rocklin Open Space	Date: 3/15/2017	Quad: Roseville & Rocklin
County: Placer	Time: 8:30 AM - 4:25 PM	Township: 11 North
Collectors: Marisa Britts	Temp: 59°F	Range: 6E
Permit #: TE-810380-5	Weather Conditions: Slight haze, sunny, and wind at 1 mph.	Section: 1-3, 10-15

Vernal Pool #	Water Temp. (°C)	Water Depth (cm)	Estimated Maximum Depth (cm)	Present Surface Area (mxm)	Inundation (%)	Photo #	Crustacea						Turbellaria Flatworms	Insecta				Notes		
							Anostraca		Notostraca		Cladocera (Water Fleas)	Conchostraca (Clam Shrimps)		Copepoda (Copepods)	Ostracoda (Seed Shrimp)	Coleoptera			Hemiptera	Diptera
							Vernal Pool Fairy Shrimp (B. lynch)	California Linderiella	Vernal Pool Tadpole Shrimp	Dytiscidae (Diving Water Beetles)						Halipitidae (Crawling Water Beetles)	Notonectidae (Backswimmers)		Chironomidae (Midge)	

Stanford Ranch (SR-12)

5	18	15	25.40	30x46	85%	1					x			x	x	x	x	bullfrogs (adults); Sierran tree frogs (tadpoles); mayfly larvae
6						9												Dry
7						8												Dry
8						7												Dry
9	18	5	7.62	3x2	65%	4							x	x	x	x	x	bullfrog tadpole, Sierran tree frogs (eggs and tadpoles)
10						5												Dry
11	18	10	15.24	23x5	90%	3				x							x	bullfrogs (adults); Sierran tree frogs (tadpoles); mayfly larvae
12						2												Dry
13						6												Dry

Stanford Ranch (SR-8)

17						25												Dry
18						24												Dry
19						21												Dry
20						20												Dry
21						13												Dry
24						17												Dry
24						19												Dry
25						15												Dry
26						10												Dry
26						26												Dry
27						22												Dry
28						11												Dry
29						12												Dry

Invertebrate Sampling Data

Project Site: Rocklin Open Space			Date: 3/15/2017			Quad: Roseville & Rocklin														
County: Placer			Time: 8:30 AM - 4:25 PM			Township: 11 North														
Collectors: Marisa Britts			Temp: 59°F			Range: 6E														
Permit #: TE-810380-5			Weather Conditions: Slight haze, sunny, and wind at 1 mph.			Section: 1-3, 10-15														
Vernal Pool #	Water Temp. (°C)	Water Depth (cm)	Estimated Maximum Depth (cm)	Present Surface Area (mxm)	Inundation (%)	Photo #	Crustacea						Turbellaria Flatworms	Insecta				Notes		
							Anostraca		Notostraca		Cladocera (Water Fleas)	Conchostraca (Clam Shrimps)		Copepoda (Copepods)	Ostracoda (Seed Shrimp)	Coleoptera			Hemiptera	Diptera
							Vernal Pool Fairy Shrimp (B. lynch)	California Linderiella	Vernal Pool Tadpole Shrimp	Dytiscidae (Diving Water Beetles)						Halipitidae (Crawling Water Beetles)	Notonectidae (Backswimmers)		Chironomidae (Midge)	
30	19	10	15.24	4x4	40%	14				x			x		x	x	x	Sierran tree frogs (eggs and tadpoles)		
32	19	5	10.16	5x6	15%	16							x	x	x	x	x	spider, Sierran tree frogs (eggs and tadpoles)		
32						18												Dry		
33						23												Dry		

Invertebrate Sampling Data

Project Site: Rocklin Open Space			Date: 3/20/2017			Quad: Roseville & Rocklin														
County: Placer			Time: 2:20 PM			Township: 11 North														
Collectors: Charlotte Marks			Temp: 68°F			Range: 6E														
Permit #: TE-810380-5			Weather Conditions: overcast, 5-8 mph wind			Section: 1-3, 10-15														
Vernal Pool #	Water Temp. (°C)	Water Depth (cm)	Estimated Maximum Depth (cm)	Present Surface Area (mxm)	Inundation (%)	Photo #	Crustacea						Turbellaria Flatworms	Insecta			Notes			
							Anostraca		Notostraca		Cladocera (Water Fleas)	Conchostraca (Clam Shrimps)		Copepoda (Copepods)	Ostracoda (Seed Shrimp)	Coleoptera		Hemiptera	Diptera	
							Vernal Pool Fairy Shrimp (B. lynchi)	California Linderella	Vernal Pool Tadpole Shrimp	Dytiscidae (Diving Water Beetles)						Halipitidae (Crawling Water Beetles)		Notonectidae (Backswimmers)	Chironomidae (Midge)	
Sunset West (SW-4)																				
14						8754												Dry		
15						8755												Dry		

Invertebrate Sampling Data

Project Site: Rocklin Open Space	Date: 3/21/2017	Quad: Roseville & Rocklin
County: Placer	Time: 12:15 PM - 3:15 PM	Township: 11 North
Collectors: Charlotte Marks	Temp: 58°F	Range: 6E
Permit #: TE-810380-5	Weather Conditions: cloudy, rain (intermittent), 5-10 mph wind	Section: 1-3, 10-15

Vernal Pool #	Water Temp. (°C)	Water Depth (cm)	Estimated Maximum Depth (cm)	Present Surface Area (mxm)	Inundation (%)	Photo #	Crustacea						Turbellaria Flatworms	Insecta			Notes			
							Anostraca		Notostraca		Cladocera (Water Fleas)	Conchostraca (Clam Shrimps)		Copepoda (Copepods)	Ostracoda (Seed Shrimp)	Coleoptera		Hemiptera	Diptera	
							Vernal Pool Fairy Shrimp (B. lynchi)	California Lindernella	Vernal Pool Tadpole Shrimp	Dytiscidae (Diving Water Beetles)						Halipilidae (Crawling Water Beetles)		Notonectidae (Backswimmers)	Chironomidae (Midge)	
Sunset West (SW-1)																				
36						8769										Not Sampled				
37						8768										Not Sampled				
38	22	20	27.94	8x6	90%	8770				x			x	x		bullfrogs (adults); Sierran tree frogs (tadpoles); mayfly larvae				
39	22	10	15.24	6x3	55%	8763				x			x	x		spiders; Sierran tree frogs (tadpoles)				
40	20	25	35.56	8x6	90%	8764				x			x	x		Sierran tree frogs (tadpoles and metamorphs); caterpillars				
41	23	8	12.70	6x6	75%	8765				x			x	x		spiders; Sierran tree frogs (tadpoles)				
42	22	13	20.32	9x8	98%	8766							x	x		mayfly larvae; Sierran tree frogs (tadpoles)				
43	27	3	5.08	3x2	30%	8772							x			bee; spiders				
44	26	13	17.78	8x6	85%	8771							x			spiders				
45	21	13	15.24	8x3	70%	8761							x		x	slugs; spiders				
46	22	5	7.62	5x2	30%	8760							x	x		spiders				
47	18	8	12.70	6x6	80%	8757							x			Sierran tree frogs (tadpoles and metamorphs); mayfly larvae; mosquito larvae				
48	20	10	15.24	3x2	45%	8758							x		x	slugs; mayfly larvae				
50						8767										Not Sampled				
51	21	13	25.40	5x3	90%	8762							x			spiders				
52	21	10	12.70	8x6	40%	8759									x	spiders				
53	16	8	10.16	2x2	95%	8756									x	spider; slug				

Appendix D — Vernal Pool Floristic Datasheets

Orchard Creek Preserve Area

2017 Plant Species Frequency for Rocklin - Orchard Creek

Species	Frequency
<i>Crassula aquatica</i>	50.00%
<i>Cynosurus echinatus</i>	25.00%
<i>Downingia bicornuta</i>	75.00%
<i>Eleocharis macrostachya</i>	50.00%
<i>Eryngium vaseyi</i>	100.00%
<i>Festuca perennis</i>	75.00%
<i>Hordeum marinum</i>	50.00%
<i>Juncus bufonius</i>	25.00%
<i>Lasthenia fremontii</i>	25.00%
<i>Leontodon saxatilis</i>	75.00%
<i>Lythrum hyssopifolia</i>	50.00%
<i>Plagiobothrys greenei</i>	75.00%
<i>Psilocarphus brevissimus</i>	25.00%
<i>Ranunculus aquatilis</i>	100.00%
<i>Rumex crispus</i>	25.00%
<i>Triteleia hyacinthina</i>	100.00%

2017 Monitoring Summary for Rocklin - Orchard Creek

Wetland	Cover	PI	CVVP Species		CVVP Cover	Species Richness	Native Species	Non-Native Species	Non-Native Cover
VP-001	95%	1.25	4	44.44%	81.34%	9	6	3	4.85%
VP-002	60%	1.64	3	50.00%	40.79%	6	5	1	2.17%
VP-003	98%	1.32	6	50.00%	83.06%	12	8	4	10.38%
VP-004	50%	1.92	4	40.00%	73.59%	10	6	4	10.39%

Wetland: VP-001

Species	Cover Class	Statistics
<i>Downingia bicornuta</i>	1	Vetetative Cover: 95%
<i>Eleocharis macrostachya</i>	5	Prevalence Index: 1.25
<i>Eryngium vaseyi</i>	2	CRAM Richness: 3
<i>Juncus bufonius</i>	1	CRAM Cover: 79.10%
<i>Leontodon saxatilis</i>	1	% CVVP Species: 44.44%
<i>Lythrum hyssopifolia</i>	1	CVVP Cover: 81.34%
<i>Ranunculus aquatilis</i>	2	Species Richness: 9
<i>Rumex crispus</i>	0	Native Species: 6
<i>Triteleia hyacinthina</i>	1	Non-Native Species: 3
		Non-Native Cover: 4.85%

Wetland: VP-002

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Eleocharis macrostachya</i>	3	Vetetative Cover: 60%
<i>Eryngium vaseyi</i>	2	Prevalence Index: 1.64
<i>Festuca perennis</i>	1	CRAM Richness: 3
<i>Plagiobothrys greenei</i>	4	CRAM Cover: 84.48%
<i>Ranunculus aquatilis</i>	2	% CVVP Species: 50.00%
<i>Triteleia hyacinthina</i>	1	CVVP Cover: 40.79%
		Species Richness: 6
		Native Species: 5
		Non-Native Species: 1
		Non-Native Cover: 2.17%

Wetland: VP-003

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Crassula aquatica</i>	1	Vetetative Cover: 98%
<i>Cynosurus echinatus</i>	0	Prevalence Index: 1.32
<i>Downingia bicornuta</i>	1	CRAM Richness: 6
<i>Eryngium vaseyi</i>	1	CRAM Cover: 85.79%
<i>Festuca perennis</i>	1	% CVVP Species: 50.00%
<i>Hordeum marinum</i>	1	CVVP Cover: 83.06%
<i>Lasthenia fremontii</i>	4	Species Richness: 12
<i>Leontodon saxatilis</i>	1	Native Species: 8
<i>Plagiobothrys greenii</i>	1	Non-Native Species: 4
<i>Psilocarphus brevissimus</i>	1	Non-Native Cover: 10.38%
<i>Ranunculus aquatilis</i>	1	
<i>Triteleia hyacinthina</i>	0	

Wetland: VP-004

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Crassula aquatica</i>	1	Vetetative Cover: 50%
<i>Downingia bicornuta</i>	1	Prevalence Index: 1.92
<i>Eryngium vaseyi</i>	4	CRAM Richness: 4
<i>Festuca perennis</i>	1	CRAM Cover: 62.77%
<i>Hordeum marinum</i>	1	% CVVP Species: 40.00%
<i>Leontodon saxatilis</i>	1	CVVP Cover: 73.59%
<i>Lythrum hyssopifolia</i>	1	Species Richness: 10
<i>Plagiobothrys greenei</i>	1	Native Species: 6
<i>Ranunculus aquatilis</i>	2	Non-Native Species: 4
<i>Triteleia hyacinthina</i>	2	Non-Native Cover: 10.39%

Stanford Ranch Preserve Area

2017 Plant Species Frequency for Rocklin - Stanford Ranch

Species	Frequency
<i>Aira caryophyllea</i>	6.90%
<i>Alopecurus saccatus</i>	6.90%
<i>Briza minor</i>	3.45%
<i>Brodiaea elegans</i>	55.17%
<i>Brodiaea sp.</i>	10.34%
<i>Cicendia quadrangularis</i>	3.45%
<i>Convolvulus arvensis</i>	3.45%
<i>Crassula aquatica</i>	24.14%
<i>Croton setiger</i>	6.90%
<i>Cynosurus echinatus</i>	3.45%
<i>Cyperus eragrostis</i>	13.79%
<i>Deschampsia danthonioides</i>	6.90%
<i>Downingia bicornuta</i>	27.59%
<i>Eleocharis acicularis</i>	3.45%
<i>Eleocharis macrostachya</i>	37.93%
<i>Elymus caput-medusae</i>	10.34%
<i>Epilobium sp.</i>	3.45%
<i>Eryngium vaseyi</i>	55.17%
<i>Festuca bromoides</i>	3.45%
<i>Festuca perennis</i>	58.62%
<i>Gratiola heterosepala</i>	3.45%
<i>Holocarpha virgata</i>	10.34%
<i>Hordeum marinum</i>	48.28%
<i>Lasthenia fremontii</i>	82.76%
<i>Lasthenia glaberrima</i>	6.90%
<i>Leontodon saxatilis</i>	68.97%
<i>Lythrum hyssopifolia</i>	79.31%
<i>Navarretia leucocephala</i>	6.90%
<i>Plagiobothrys stipitatus</i>	55.17%
<i>Pogogyne zizyphoroides</i>	10.34%
<i>Polypogon monspeliensis</i>	37.93%
<i>Psilocarphus brevissimus</i>	37.93%
<i>Ranunculus bonariensis</i>	24.14%
<i>Rumex crispus</i>	20.69%
<i>Rumex pulcher</i>	3.45%
<i>Trifolium sp.</i>	3.45%

<i>Trifolium variegatum</i>	3.45%
<i>Triteleia hyacinthina</i>	6.90%
<i>Vicia sp.</i>	3.45%

2017 Monitoring Summary for Rocklin - Stanford Ranch

Wetland	Cover	PI	CVVP Species	CVVP Cover	Species Richness	Native Species	Non-Native Species	Non-Native Cover
VP-005	55%	1.11	8 80.00%	93.18%	10	8	2	6.82%
VP-006	95%	2.42	5 55.56%	56.60%	9	6	3	23.90%
VP-007	70%	1.05	7 77.78%	98.91%	9	7	2	1.09%
VP-008	80%	1.74	6 75.00%	96.30%	8	6	2	3.70%
VP-009	90%	1.04	7 87.50%	99.47%	8	7	1	0.53%
VP-010	65%	1.75	3 37.50%	76.33%	8	4	4	23.08%
VP-011	95%	1.05	8 80.00%	96.32%	10	8	2	3.68%
VP-012	95%	1.52	8 72.73%	86.26%	11	8	3	13.74%
VP-013	55%	2.15	4 50.00%	46.84%	8	5	3	52.53%
VP-014	98%	2.59	4 66.67%	38.52%	6	4	2	61.48%
VP-015	100%	1.43	5 55.56%	87.25%	9	6	3	8.72%
VP-016	85%	2.44	2 33.33%	45.30%	6	3	3	37.57%
VP-017	100%	2.24	3 33.33%	50.57%	9	5	4	28.16%
VP-018	90%	2.93	2 22.22%	20.67%	9	4	5	58.66%
VP-019	95%	3.16	3 27.27%	34.66%	11	6	5	38.34%
VP-020	70%	1.70	4 44.44%	84.54%	9	5	4	12.37%
VP-021	95%	3.00	1 11.11%	2.67%	9	3	6	92.00%
VP-022	85%	1.35	3 37.50%	84.04%	8	4	4	12.77%
VP-023	85%	1.28	5 62.50%	92.44%	8	6	2	5.04%
VP-024	90%	2.00	4 44.44%	10.67%	9	5	4	86.67%
VP-025	100%	2.97	1 25.00%	3.11%	4	1	3	96.89%
VP-026	95%	1.59	3 30.00%	50.18%	10	6	4	34.18%
VP-027	90%	3.51	1 14.29%	3.70%	7	2	5	77.16%
VP-028	85%	2.09	3 33.33%	64.94%	9	4	5	31.61%
VP-029	85%	1.70	3 30.00%	72.90%	10	5	5	19.35%
VP-030	75%	1.67	1 16.67%	43.18%	6	2	4	53.41%
VP-031	95%	2.23	2 25.00%	44.96%	8	3	5	52.52%
VP-032	95%	1.94	4 44.44%	77.46%	9	6	3	7.38%
VP-033	100%	1.89	5 41.67%	82.72%	12	7	5	12.35%

Wetland: VP-005

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Crassula aquatica</i>	0	Vetetative Cover: 55%
<i>Eleocharis macrostachya</i>	4	Prevalence Index: 1.11
<i>Eryngium vaseyi</i>	0	CRAM Richness: 7
<i>Lasthenia fremontii</i>	0	CRAM Cover: 92.61%
<i>Lasthenia glaberrima</i>	2	% CVVP Species: 80.00%
<i>Lythrum hyssopifolia</i>	1	CVVP Cover: 93.18%
<i>Plagiobothrys stipitatus</i>	0	Species Richness: 10
<i>Ranunculus bonariensis</i>	0	Native Species: 8
<i>Rumex pulcher</i>	1	Non-Native Species: 2
<i>Triteleia hyacinthina</i>	0	Non-Native Cover: 6.82%

Wetland: VP-006

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Alopecurus saccatus</i>	1	Vetetative Cover: 95%
<i>Brodiaea sp.</i>	2	Prevalence Index: 2.42
<i>Downingia bicornuta</i>	1	CRAM Richness: 5
<i>Eryngium vaseyi</i>	0	CRAM Cover: 56.60%
<i>Festuca perennis</i>	0	% CVVP Species: 55.56%
<i>Lasthenia fremontii</i>	3	CVVP Cover: 56.60%
<i>Leontodon saxatilis</i>	2	Species Richness: 9
<i>Lythrum hyssopifolia</i>	1	Native Species: 6
<i>Pogogyne zizyphoroides</i>	0	Non-Native Species: 3
		Non-Native Cover: 23.90%

Wetland: VP-007

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Crassula aquatica</i>	2	Vetetative Cover: 70%
<i>Downingia bicornuta</i>	3	Prevalence Index: 1.05
<i>Eryngium vaseyi</i>	1	CRAM Richness: 7
<i>Lasthenia fremontii</i>	2	CRAM Cover: 98.91%
<i>Leontodon saxatilis</i>	0	% CVVP Species: 77.78%
<i>Lythrum hyssopifolia</i>	0	CVVP Cover: 98.91%
<i>Navarretia leucocephala</i>	2	Species Richness: 9
<i>Plagiobothrys stipitatus</i>	0	Native Species: 7
<i>Psilocarphus brevissimus</i>	1	Non-Native Species: 2
		Non-Native Cover: 1.09%

Wetland: VP-008

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Downingia bicornuta</i>	1	Vetetative Cover: 80%
<i>Eleocharis macrostachya</i>	1	Prevalence Index: 1.74
<i>Eryngium vaseyi</i>	4	CRAM Richness: 6
<i>Hordeum marinum</i>	1	CRAM Cover: 96.30%
<i>Lasthenia fremontii</i>	2	% CVVP Species: 75.00%
<i>Lythrum hyssopifolia</i>	0	CVVP Cover: 96.30%
<i>Plagiobothrys stipitatus</i>	1	Species Richness: 8
<i>Psilocarphus brevissimus</i>	1	Native Species: 6
		Non-Native Species: 2
		Non-Native Cover: 3.70%

Wetland: VP-009

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Downingia bicornuta</i>	2	Vetetative Cover: 90%
<i>Eleocharis macrostachya</i>	1	Prevalence Index: 1.04
<i>Eryngium vaseyi</i>	1	CRAM Richness: 7
<i>Lasthenia fremontii</i>	2	CRAM Cover: 99.47%
<i>Lythrum hyssopifolia</i>	0	% CVVP Species: 87.50%
<i>Plagiobothrys stipitatus</i>	3	CVVP Cover: 99.47%
<i>Psilocarphus brevissimus</i>	1	Species Richness: 8
<i>Ranunculus bonariensis</i>	2	Native Species: 7
		Non-Native Species: 1
		Non-Native Cover: 0.53%

Wetland: VP-010

Species	Cover Class	Statistics
<i>Aira caryophyllea</i>	0	Vetetative Cover: 65%
<i>Brodiaea sp.</i>	0	Prevalence Index: 1.75
<i>Downingia bicornuta</i>	0	CRAM Richness: 3
<i>Elymus caput-medusae</i>	1	CRAM Cover: 76.33%
<i>Lasthenia fremontii</i>	4	% CVVP Species: 37.50%
<i>Leontodon saxatilis</i>	2	CVVP Cover: 76.33%
<i>Lythrum hyssopifolia</i>	0	Species Richness: 8
<i>Plagiobothrys stipitatus</i>	0	Native Species: 4
		Non-Native Species: 4
		Non-Native Cover: 23.08%

Wetland: VP-011

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Crassula aquatica</i>	1	Vetetative Cover: 95%
<i>Downingia bicornuta</i>	2	Prevalence Index: 1.05
<i>Eleocharis macrostachya</i>	3	CRAM Richness: 8
<i>Eryngium vaseyi</i>	0	CRAM Cover: 96.32%
<i>Gratiola heterosepala</i>	1	% CVVP Species: 80.00%
<i>Hordeum marinum</i>	0	CVVP Cover: 96.32%
<i>Lythrum hyssopifolia</i>	1	Species Richness: 10
<i>Navarretia leucocephala</i>	0	Native Species: 8
<i>Plagiobothrys stipitatus</i>	2	Non-Native Species: 2
<i>Psilocarphus brevissimus</i>	2	Non-Native Cover: 3.68%

Wetland: VP-012

Species	Cover Class	Statistics
<i>Downingia bicornuta</i>	0	Vetetative Cover: 95%
<i>Eleocharis macrostachya</i>	2	Prevalence Index: 1.52
<i>Eryngium vaseyi</i>	2	CRAM Richness: 7
<i>Hordeum marinum</i>	1	CRAM Cover: 85.50%
<i>Lasthenia fremontii</i>	2	% CVVP Species: 72.73%
<i>Lasthenia glaberrima</i>	1	CVVP Cover: 86.26%
<i>Leontodon saxatilis</i>	1	Species Richness: 11
<i>Plagiobothrys stipitatus</i>	1	Native Species: 8
<i>Ranunculus bonariensis</i>	1	Non-Native Species: 3
<i>Rumex crispus</i>	1	Non-Native Cover: 13.74%
<i>Triteleia hyacinthina</i>	0	

Wetland: VP-013

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Brodiaea sp.</i>	0	Vetetative Cover: 55%
<i>Elymus caput-medusae</i>	1	Prevalence Index: 2.15
<i>Hordeum marinum</i>	3	CRAM Richness: 4
<i>Lasthenia fremontii</i>	2	CRAM Cover: 46.84%
<i>Lythrum hyssopifolia</i>	0	% CVVP Species: 50.00%
<i>Plagiobothrys stipitatus</i>	2	CVVP Cover: 46.84%
<i>Pogogyne zizyphoroides</i>	1	Species Richness: 8
<i>Psilocarphus brevissimus</i>	1	Native Species: 5
		Non-Native Species: 3
		Non-Native Cover: 52.53%

Wetland: VP-014

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Cynosurus echinatus</i>	2	Vetetative Cover: 98%
<i>Eryngium vaseyi</i>	2	Prevalence Index: 2.59
<i>Festuca perennis</i>	4	CRAM Richness: 4
<i>Lasthenia fremontii</i>	2	CRAM Cover: 38.52%
<i>Plagiobothrys stipitatus</i>	2	% CVVP Species: 66.67%
<i>Ranunculus bonariensis</i>	1	CVVP Cover: 38.52%
		Species Richness: 6
		Native Species: 4
		Non-Native Species: 2
		Non-Native Cover: 61.48%

Wetland: VP-015

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Downingia bicornuta</i>	1	Vetetative Cover: 100%
<i>Eleocharis macrostachya</i>	2	Prevalence Index: 1.43
<i>Eryngium vaseyi</i>	2	CRAM Richness: 5
<i>Festuca perennis</i>	1	CRAM Cover: 87.25%
<i>Hordeum marinum</i>	1	% CVVP Species: 55.56%
<i>Lasthenia fremontii</i>	2	CVVP Cover: 87.25%
<i>Leontodon saxatilis</i>	0	Species Richness: 9
<i>Plagiobothrys stipitatus</i>	2	Native Species: 6
<i>Trifolium variegatum</i>	1	Non-Native Species: 3
		Non-Native Cover: 8.72%

Wetland: VP-016

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Brodiaea elegans</i>	2	Vetetative Cover: 85%
<i>Eryngium vaseyi</i>	1	Prevalence Index: 2.44
<i>Festuca perennis</i>	2	CRAM Richness: 2
<i>Lasthenia fremontii</i>	3	CRAM Cover: 45.30%
<i>Leontodon saxatilis</i>	2	% CVVP Species: 33.33%
<i>Polypogon monspeliensis</i>	1	CVVP Cover: 45.30%
		Species Richness: 6
		Native Species: 3
		Non-Native Species: 3
		Non-Native Cover: 37.57%

Wetland: VP-017

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Brodiaea elegans</i>	2	Vetetative Cover: 100%
<i>Deschampsia danthonioides</i>	1	Prevalence Index: 2.24
<i>Festuca perennis</i>	2	CRAM Richness: 3
<i>Holocarpha virgata</i>	1	CRAM Cover: 50.57%
<i>Lasthenia fremontii</i>	3	% CVVP Species: 33.33%
<i>Leontodon saxatilis</i>	1	CVVP Cover: 50.57%
<i>Lythrum hyssopifolia</i>	1	Species Richness: 9
<i>Pogogyne zizyphoroides</i>	1	Native Species: 5
<i>Polypogon monspeliensis</i>	1	Non-Native Species: 4
		Non-Native Cover: 28.16%

Wetland: VP-018

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Brodiaea elegans</i>	2	Vetetative Cover: 90%
<i>Eleocharis macrostachya</i>	1	Prevalence Index: 2.93
<i>Festuca perennis</i>	2	CRAM Richness: 2
<i>Holocarpha virgata</i>	1	CRAM Cover: 20.67%
<i>Hordeum marinum</i>	2	% CVVP Species: 22.22%
<i>Lasthenia fremontii</i>	2	CVVP Cover: 20.67%
<i>Leontodon saxatilis</i>	2	Species Richness: 9
<i>Lythrum hyssopifolia</i>	1	Native Species: 4
<i>Polypogon monspeliensis</i>	1	Non-Native Species: 5
		Non-Native Cover: 58.66%

Wetland: VP-019

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Brodiaea elegans</i>	3	Vetetative Cover: 95%
<i>Croton setiger</i>	1	Prevalence Index: 3.16
<i>Elymus caput-medusae</i>	3	CRAM Richness: 3
<i>Eryngium vaseyi</i>	1	CRAM Cover: 34.66%
<i>Festuca perennis</i>	1	% CVVP Species: 27.27%
<i>Holocarpha virgata</i>	1	CVVP Cover: 34.66%
<i>Lasthenia fremontii</i>	3	Species Richness: 11
<i>Leontodon saxatilis</i>	2	Native Species: 6
<i>Lythrum hyssopifolia</i>	1	Non-Native Species: 5
<i>Polypogon monspeliensis</i>	1	Non-Native Cover: 38.34%
<i>Ranunculus bonariensis</i>	2	

Wetland: VP-020

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Brodiaea elegans</i>	1	Vetetative Cover: 70%
<i>Eryngium vaseyi</i>	3	Prevalence Index: 1.70
<i>Festuca perennis</i>	1	CRAM Richness: 4
<i>Lasthenia fremontii</i>	3	CRAM Cover: 84.54%
<i>Leontodon saxatilis</i>	1	% CVVP Species: 44.44%
<i>Lythrum hyssopifolia</i>	1	CVVP Cover: 84.54%
<i>Polypogon monspeliensis</i>	1	Species Richness: 9
<i>Psilocarphus brevissimus</i>	1	Native Species: 5
<i>Ranunculus bonariensis</i>	1	Non-Native Species: 4
		Non-Native Cover: 12.37%

Wetland: VP-021

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Alopecurus saccatus</i>	1	Vetetative Cover: 95%
<i>Briza minor</i>	1	Prevalence Index: 3.00
<i>Brodiaea elegans</i>	1	CRAM Richness: 1
<i>Cyperus eragrostis</i>	1	CRAM Cover: 2.67%
<i>Festuca perennis</i>	4	% CVVP Species: 11.11%
<i>Hordeum marinum</i>	2	CVVP Cover: 2.67%
<i>Leontodon saxatilis</i>	2	Species Richness: 9
<i>Lythrum hyssopifolia</i>	1	Native Species: 3
<i>Rumex crispus</i>	1	Non-Native Species: 6
		Non-Native Cover: 92.00%

Wetland: VP-022

Species	Cover Class	Statistics
<i>Brodiaea elegans</i>	1	Vetetative Cover: 85%
<i>Festuca perennis</i>	1	Prevalence Index: 1.35
<i>Hordeum marinum</i>	1	CRAM Richness: 3
<i>Lasthenia fremontii</i>	3	CRAM Cover: 84.04%
<i>Leontodon saxatilis</i>	1	% CVVP Species: 37.50%
<i>Lythrum hyssopifolia</i>	1	CVVP Cover: 84.04%
<i>Plagiobothrys stipitatus</i>	3	Species Richness: 8
<i>Psilocarphus brevissimus</i>	1	Native Species: 4
		Non-Native Species: 4
		Non-Native Cover: 12.77%

Wetland: VP-023

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Brodiaea elegans</i>	1	Vetetative Cover: 85%
<i>Eleocharis macrostachya</i>	2	Prevalence Index: 1.28
<i>Eryngium vaseyi</i>	2	CRAM Richness: 5
<i>Festuca perennis</i>	1	CRAM Cover: 92.44%
<i>Lasthenia fremontii</i>	3	% CVVP Species: 62.50%
<i>Lythrum hyssopifolia</i>	1	CVVP Cover: 92.44%
<i>Plagiobothrys stipitatus</i>	3	Species Richness: 8
<i>Psilocarphus brevissimus</i>	1	Native Species: 6
		Non-Native Species: 2
		Non-Native Cover: 5.04%

Wetland: VP-024

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Brodiaea elegans</i>	1	Vetetative Cover: 90%
<i>Crassula aquatica</i>	1	Prevalence Index: 2.00
<i>Eleocharis acicularis</i>	1	CRAM Richness: 3
<i>Festuca bromoides</i>	4	CRAM Cover: 8.00%
<i>Hordeum marinum</i>	1	% CVVP Species: 44.44%
<i>Lasthenia fremontii</i>	1	CVVP Cover: 10.67%
<i>Lythrum hyssopifolia</i>	2	Species Richness: 9
<i>Polypogon monspeliensis</i>	2	Native Species: 5
<i>Psilocarphus brevissimus</i>	1	Non-Native Species: 4
		Non-Native Cover: 86.67%

Wetland: VP-025

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Festuca perennis</i>	5	Vetetative Cover: 100%
<i>Hordeum marinum</i>	1	Prevalence Index: 2.97
<i>Lasthenia fremontii</i>	1	CRAM Richness: 1
<i>Leontodon saxatilis</i>	1	CRAM Cover: 3.11%
		% CVVP Species: 25.00%
		CVVP Cover: 3.11%
		Species Richness: 4
		Native Species: 1
		Non-Native Species: 3
		Non-Native Cover: 96.89%

Wetland: VP-026

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Brodiaea elegans</i>	1	Vetetative Cover: 95%
<i>Crassula aquatica</i>	2	Prevalence Index: 1.59
<i>Cyperus eragrostis</i>	2	CRAM Richness: 3
<i>Epilobium sp.</i>	1	CRAM Cover: 50.18%
<i>Festuca perennis</i>	1	% CVVP Species: 30.00%
<i>Lasthenia fremontii</i>	3	CVVP Cover: 50.18%
<i>Leontodon saxatilis</i>	1	Species Richness: 10
<i>Lythrum hyssopifolia</i>	3	Native Species: 6
<i>Plagiobothrys stipitatus</i>	2	Non-Native Species: 4
<i>Rumex crispus</i>	1	Non-Native Cover: 34.18%

Wetland: VP-027

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Brodiaea elegans</i>	2	Vetetative Cover: 90%
<i>Festuca perennis</i>	2	Prevalence Index: 3.51
<i>Hordeum marinum</i>	1	CRAM Richness: 1
<i>Leontodon saxatilis</i>	3	CRAM Cover: 3.70%
<i>Lythrum hyssopifolia</i>	1	% CVVP Species: 14.29%
<i>Polypogon monspeliensis</i>	1	CVVP Cover: 3.70%
<i>Psilocarphus brevissimus</i>	1	Species Richness: 7
		Native Species: 2
		Non-Native Species: 5
		Non-Native Cover: 77.16%

Wetland: VP-028

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Aira caryophyllea</i>	2	Vetetative Cover: 85%
<i>Brodiaea elegans</i>	1	Prevalence Index: 2.09
<i>Crassula aquatica</i>	2	CRAM Richness: 3
<i>Deschampsia danthonioides</i>	1	CRAM Cover: 64.94%
<i>Hordeum marinum</i>	1	% CVVP Species: 33.33%
<i>Lasthenia fremontii</i>	3	CVVP Cover: 64.94%
<i>Leontodon saxatilis</i>	1	Species Richness: 9
<i>Lythrum hyssopifolia</i>	1	Native Species: 4
<i>Polypogon monspeliensis</i>	1	Non-Native Species: 5
		Non-Native Cover: 31.61%

Wetland: VP-029

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Brodiaea elegans</i>	1	Vetetative Cover: 85%
<i>Crassula aquatica</i>	3	Prevalence Index: 1.70
<i>Cyperus eragrostis</i>	1	CRAM Richness: 3
<i>Eryngium vaseyi</i>	2	CRAM Cover: 72.90%
<i>Festuca perennis</i>	1	% CVVP Species: 30.00%
<i>Hordeum marinum</i>	1	CVVP Cover: 72.90%
<i>Leontodon saxatilis</i>	1	Species Richness: 10
<i>Lythrum hyssopifolia</i>	1	Native Species: 5
<i>Plagiobothrys stipitatus</i>	1	Non-Native Species: 5
<i>Polypogon monspeliensis</i>	1	Non-Native Cover: 19.35%

Wetland: VP-030

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Cyperus eragrostis</i>	1	Vetetative Cover: 75%
<i>Eleocharis macrostachya</i>	3	Prevalence Index: 1.67
<i>Lythrum hyssopifolia</i>	1	CRAM Richness: 1
<i>Polypogon monspeliensis</i>	3	CRAM Cover: 43.18%
<i>Rumex crispus</i>	1	% CVVP Species: 16.67%
<i>Vicia sp.</i>	1	CVVP Cover: 43.18%
		Species Richness: 6
		Native Species: 2
		Non-Native Species: 4
		Non-Native Cover: 53.41%

Wetland: VP-031

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Brodiaea elegans</i>	1	Vetetative Cover: 95%
<i>Eleocharis macrostachya</i>	3	Prevalence Index: 2.23
<i>Festuca perennis</i>	3	CRAM Richness: 2
<i>Hordeum marinum</i>	1	CRAM Cover: 44.96%
<i>Lasthenia fremontii</i>	2	% CVVP Species: 25.00%
<i>Leontodon saxatilis</i>	2	CVVP Cover: 44.96%
<i>Rumex crispus</i>	1	Species Richness: 8
<i>Trifolium sp.</i>	1	Native Species: 3
		Non-Native Species: 5
		Non-Native Cover: 52.52%

Wetland: VP-032

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Brodiaea elegans</i>	2	Vetetative Cover: 95%
<i>Croton setiger</i>	1	Prevalence Index: 1.94
<i>Eryngium vaseyi</i>	3	CRAM Richness: 4
<i>Festuca perennis</i>	1	CRAM Cover: 77.46%
<i>Lasthenia fremontii</i>	3	% CVVP Species: 44.44%
<i>Leontodon saxatilis</i>	1	CVVP Cover: 77.46%
<i>Lythrum hyssopifolia</i>	1	Species Richness: 9
<i>Plagiobothrys stipitatus</i>	2	Native Species: 6
<i>Psilocarphus brevissimus</i>	1	Non-Native Species: 3
		Non-Native Cover: 7.38%

Wetland: VP-033

Species	Cover Class	Statistics
<i>Brodiaea elegans</i>	1	Vetetative Cover: 100%
<i>Cicendia quadrangularis</i>	1	Prevalence Index: 1.89
<i>Convolvulus arvensis</i>	1	CRAM Richness: 5
<i>Eleocharis macrostachya</i>	2	CRAM Cover: 82.72%
<i>Eryngium vaseyi</i>	4	% CVVP Species: 41.67%
<i>Lasthenia fremontii</i>	2	CVVP Cover: 82.72%
<i>Leontodon saxatilis</i>	1	Species Richness: 12
<i>Lythrum hyssopifolia</i>	1	Native Species: 7
<i>Plagiobothrys stipitatus</i>	1	Non-Native Species: 5
<i>Polypogon monspeliensis</i>	1	Non-Native Cover: 12.35%
<i>Ranunculus bonariensis</i>	1	
<i>Rumex crispus</i>	1	

Sunset West Preserve Area

2017 Plant Species Frequency for Rocklin - Sunset West

Species	Frequency
<i>Aira caryophyllea</i>	3.45%
<i>Avena sp.</i>	17.24%
<i>Briza minor</i>	6.90%
<i>Brodiaea elegans</i>	13.79%
<i>Cicendia quadrangularis</i>	3.45%
<i>Convolvulus arvensis</i>	10.34%
<i>Crassula aquatica</i>	17.24%
<i>Croton setiger</i>	17.24%
<i>Crypsis sp.</i>	6.90%
<i>Cynosurus echinatus</i>	13.79%
<i>Cyperus sp.</i>	3.45%
<i>Downingia bicornuta</i>	34.48%
<i>Downingia ornatissima</i>	20.69%
<i>Eleocharis macrostachya</i>	89.66%
<i>Elymus caput-medusae</i>	6.90%
<i>Erodium botrys</i>	3.45%
<i>Eryngium vaseyi</i>	86.21%
<i>Festuca perennis</i>	37.93%
<i>Gratiola ebracteata</i>	3.45%
<i>Gratiola heterosepala</i>	6.90%
<i>Hordeum marinum</i>	24.14%
<i>Hordeum murinum</i>	3.45%
<i>Juncus bufonius</i>	6.90%
<i>Juncus effusus</i>	10.34%
<i>Juncus xiphioides</i>	6.90%
<i>Lasthenia fremontii</i>	55.17%
<i>Leontodon saxatilis</i>	55.17%
<i>Lythrum hyssopifolia</i>	79.31%
<i>Mentha sp.</i>	10.34%
<i>Navarretia intertexta</i>	10.34%
<i>Navarretia leucocephala</i>	13.79%
<i>Pilularia americana</i>	10.34%
<i>Plagiobothrys greenei</i>	34.48%
<i>Plagiobothrys stipitatus</i>	34.48%
<i>Plantago sp.</i>	3.45%
<i>Polygonum sp.</i>	10.34%

<i>Psilocarphus brevissimus</i>	27.59%
<i>Ranunculus aquatilis</i>	37.93%
<i>Ranunculus bonariensis</i>	27.59%
<i>Rumex crispus</i>	27.59%
<i>Trifolium depauperatum</i>	3.45%
<i>Trifolium hirtum</i>	3.45%
<i>Trifolium variegatum</i>	6.90%
<i>Triteleia hyacinthina</i>	31.03%

2017 Monitoring Summary for Rocklin - Sunset West

Wetland	Cover	PI	CVVP Species	CVVP Cover	Species Richness	Native Species	Non-Native Species	Non-Native Cover
SW-056	90%	1.46	0 0.00%	0.00%	3	1	2	54.41%
VP-034	95%	1.37	6 50.00%	91.70%	12	9	3	3.16%
VP-035	90%	1.60	4 50.00%	89.62%	8	6	2	6.56%
VP-036	100%	1.67	5 41.67%	80.65%	12	6	6	16.59%
VP-037	100%	2.16	6 37.50%	54.55%	16	10	6	37.23%
VP-038	95%	1.32	2 33.33%	76.33%	6	4	2	5.80%
VP-039	98%	1.11	5 71.43%	92.64%	7	6	1	3.68%
VP-040	95%	1.18	5 62.50%	84.10%	8	7	1	2.51%
VP-041	98%	1.55	8 57.14%	75.43%	14	11	3	12.29%
VP-042	95%	1.61	5 55.56%	64.00%	9	8	1	2.18%
VP-043	98%	1.28	3 42.86%	81.01%	7	4	3	6.98%
VP-044	95%	1.20	4 50.00%	79.92%	8	7	1	12.70%
VP-045	100%	1.29	3 30.00%	63.10%	10	5	5	8.62%
VP-046	95%	2.13	8 53.33%	52.00%	15	11	4	32.36%
VP-047	98%	1.29	6 54.55%	87.62%	11	9	2	5.94%
VP-048	98%	1.33	7 63.64%	87.63%	11	8	3	10.86%
VP-049	100%	1.40	4 36.36%	83.83%	11	5	6	15.57%
VP-050	100%	1.99	3 42.86%	82.48%	7	3	4	17.52%
VP-051	98%	1.19	4 66.67%	92.36%	6	5	1	3.82%
VP-052	100%	1.58	2 20.00%	87.88%	10	3	7	11.69%
VP-053	100%	1.80	2 33.33%	75.62%	6	2	4	24.38%
VP-054	90%	1.69	6 54.55%	69.35%	11	7	4	18.77%
VP-055	92%	1.43	3 42.86%	81.01%	7	3	4	18.99%
VP-057	98%	1.91	2 33.33%	53.23%	6	2	4	46.77%
VP-058	96%	1.62	8 66.67%	76.28%	12	8	4	23.72%
VP-059	100%	1.17	5 45.45%	89.60%	11	7	4	5.60%
VP-060	95%	1.35	8 72.73%	94.96%	11	8	3	5.04%
VP-061	70%	1.19	5 71.43%	92.59%	7	5	2	7.41%
VP-062	80%	1.69	7 70.00%	94.25%	10	7	3	5.75%

Wetland: SW-056

Species	Cover Class	Statistics
<i>Juncus effusus</i>	2	Vetetative Cover: 90%
<i>Mentha sp.</i>	1	Prevalence Index: 1.46
<i>Rumex crispus</i>	2	CRAM Richness: 0
		CRAM Cover: 0.00%
		% CVVP Species: 0.00%
		CVVP Cover: 0.00%
		Species Richness: 3
		Native Species: 1
		Non-Native Species: 2
		Non-Native Cover: 54.41%

Wetland: VP-034

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Brodiaea elegans</i>	1	Vetetative Cover: 95%
<i>Downingia bicornuta</i>	1	Prevalence Index: 1.37
<i>Downingia ornatissima</i>	1	CRAM Richness: 5
<i>Eleocharis macrostachya</i>	4	CRAM Cover: 79.45%
<i>Eryngium vaseyi</i>	2	% CVVP Species: 50.00%
<i>Festuca perennis</i>	1	CVVP Cover: 91.70%
<i>Juncus xiphioides</i>	0	Species Richness: 12
<i>Lythrum hyssopifolia</i>	0	Native Species: 9
<i>Psilocarphus brevissimus</i>	2	Non-Native Species: 3
<i>Ranunculus aquatilis</i>	1	Non-Native Cover: 3.16%
<i>Rumex crispus</i>	0	
<i>Triteleia hyacinthina</i>	2	

Wetland: VP-035

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Croton setiger</i>	0	Vetetative Cover: 90%
<i>Cynosurus echinatus</i>	1	Prevalence Index: 1.60
<i>Downingia bicornuta</i>	1	CRAM Richness: 4
<i>Eleocharis macrostachya</i>	3	CRAM Cover: 89.62%
<i>Eryngium vaseyi</i>	3	% CVVP Species: 50.00%
<i>Lythrum hyssopifolia</i>	1	CVVP Cover: 89.62%
<i>Plagiobothrys stipitatus</i>	1	Species Richness: 8
<i>Ranunculus aquatilis</i>	1	Native Species: 6
		Non-Native Species: 2
		Non-Native Cover: 6.56%

Wetland: VP-036

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Briza minor</i>	1	Vetetative Cover: 100%
<i>Convolvulus arvensis</i>	1	Prevalence Index: 1.67
<i>Croton setiger</i>	1	CRAM Richness: 4
<i>Eleocharis macrostachya</i>	2	CRAM Cover: 66.36%
<i>Eryngium vaseyi</i>	2	% CVVP Species: 41.67%
<i>Festuca perennis</i>	1	CVVP Cover: 80.65%
<i>Lasthenia fremontii</i>	3	Species Richness: 12
<i>Lythrum hyssopifolia</i>	1	Native Species: 6
<i>Plagiobothrys stipitatus</i>	1	Non-Native Species: 6
<i>Polygonum sp.</i>	1	Non-Native Cover: 16.59%
<i>Rumex crispus</i>	1	
<i>Triteleia hyacinthina</i>	2	

Wetland: VP-037

Species	Cover Class	Statistics
<i>Brodiaea elegans</i>	0	Vetetative Cover: 100%
<i>Croton setiger</i>	1	Prevalence Index: 2.16
<i>Cynosurus echinatus</i>	1	CRAM Richness: 6
<i>Downingia bicornuta</i>	1	CRAM Cover: 56.71%
<i>Eleocharis macrostachya</i>	1	% CVVP Species: 37.50%
<i>Eryngium vaseyi</i>	2	CVVP Cover: 54.55%
<i>Hordeum marinum</i>	2	Species Richness: 16
<i>Juncus bufonius</i>	1	Native Species: 10
<i>Lasthenia fremontii</i>	3	Non-Native Species: 6
<i>Leontodon saxatilis</i>	2	Non-Native Cover: 37.23%
<i>Lythrum hyssopifolia</i>	1	
<i>Plagiobothrys greenei</i>	1	
<i>Polygonum sp.</i>	1	
<i>Psilocarphus brevissimus</i>	1	
<i>Rumex crispus</i>	1	
<i>Triteleia hyacinthina</i>	0	

Wetland: VP-038

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Convolvulus arvensis</i>	1	Vetetative Cover: 95%
<i>Eleocharis macrostachya</i>	4	Prevalence Index: 1.32
<i>Eryngium vaseyi</i>	2	CRAM Richness: 3
<i>Plagiobothrys greenei</i>	1	CRAM Cover: 79.23%
<i>Ranunculus aquatilis</i>	2	% CVVP Species: 33.33%
<i>Rumex crispus</i>	1	CVVP Cover: 76.33%
		Species Richness: 6
		Native Species: 4
		Non-Native Species: 2
		Non-Native Cover: 5.80%

Wetland: VP-039

Species	Cover Class	Statistics
<i>Downingia bicornuta</i>	1	Vetetative Cover: 98%
<i>Eleocharis macrostachya</i>	4	Prevalence Index: 1.11
<i>Eryngium vaseyi</i>	1	CRAM Richness: 5
<i>Festuca perennis</i>	1	CRAM Cover: 92.64%
<i>Lasthenia fremontii</i>	1	% CVVP Species: 71.43%
<i>Pilularia americana</i>	1	CVVP Cover: 92.64%
<i>Ranunculus aquatilis</i>	1	Species Richness: 7
		Native Species: 6
		Non-Native Species: 1
		Non-Native Cover: 3.68%

Wetland: VP-040

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Crassula aquatica</i>	2	Vetetative Cover: 95%
<i>Eleocharis macrostachya</i>	4	Prevalence Index: 1.18
<i>Eryngium vaseyi</i>	1	CRAM Richness: 6
<i>Lasthenia fremontii</i>	1	CRAM Cover: 97.07%
<i>Lythrum hyssopifolia</i>	1	% CVVP Species: 62.50%
<i>Plagiobothrys greenei</i>	2	CVVP Cover: 84.10%
<i>Psilocarphus brevissimus</i>	2	Species Richness: 8
<i>Trifolium variegatum</i>	0	Native Species: 7
		Non-Native Species: 1
		Non-Native Cover: 2.51%

Wetland: VP-041

Species	Cover Class	Statistics
<i>Avena sp.</i>	2	Vetetative Cover: 98%
<i>Crassula aquatica</i>	1	Prevalence Index: 1.55
<i>Downingia bicornuta</i>	1	CRAM Richness: 7
<i>Eleocharis macrostachya</i>	3	CRAM Cover: 73.71%
<i>Eryngium vaseyi</i>	2	% CVVP Species: 57.14%
<i>Juncus bufonius</i>	1	CVVP Cover: 75.43%
<i>Juncus xiphioides</i>	2	Species Richness: 14
<i>Lasthenia fremontii</i>	4	Native Species: 11
<i>Leontodon saxatilis</i>	1	Non-Native Species: 3
<i>Lythrum hyssopifolia</i>	1	Non-Native Cover: 12.29%
<i>Navarretia leucocephala</i>	1	
<i>Psilocarphus brevissimus</i>	1	
<i>Ranunculus aquatilis</i>	1	
<i>Triteleia hyacinthina</i>	1	

Wetland: VP-042

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Croton setiger</i>	2	Vetetative Cover: 95%
<i>Downingia bicornuta</i>	1	Prevalence Index: 1.61
<i>Downingia ornatissima</i>	1	CRAM Richness: 6
<i>Eleocharis macrostachya</i>	4	CRAM Cover: 75.27%
<i>Eryngium vaseyi</i>	1	% CVVP Species: 55.56%
<i>Lythrum hyssopifolia</i>	1	CVVP Cover: 64.00%
<i>Pilularia americana</i>	2	Species Richness: 9
<i>Plagiobothrys greenei</i>	2	Native Species: 8
<i>Ranunculus aquatilis</i>	2	Non-Native Species: 1
		Non-Native Cover: 2.18%

Wetland: VP-043

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Eleocharis macrostachya</i>	3	Vetetative Cover: 98%
<i>Eryngium vaseyi</i>	1	Prevalence Index: 1.28
<i>Festuca perennis</i>	1	CRAM Richness: 4
<i>Lasthenia fremontii</i>	4	CRAM Cover: 93.02%
<i>Leontodon saxatilis</i>	1	% CVVP Species: 42.86%
<i>Lythrum hyssopifolia</i>	1	CVVP Cover: 81.01%
<i>Plagiobothrys greenei</i>	2	Species Richness: 7
		Native Species: 4
		Non-Native Species: 3
		Non-Native Cover: 6.98%

Wetland: VP-044

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Eleocharis macrostachya</i>	4	Vetetative Cover: 95%
<i>Eryngium vaseyi</i>	1	Prevalence Index: 1.20
<i>Lasthenia fremontii</i>	2	CRAM Richness: 5
<i>Lythrum hyssopifolia</i>	2	CRAM Cover: 82.38%
<i>Pilularia americana</i>	2	% CVVP Species: 50.00%
<i>Plagiobothrys greenei</i>	1	CVVP Cover: 79.92%
<i>Ranunculus aquatilis</i>	1	Species Richness: 8
<i>Trifolium variegatum</i>	1	Native Species: 7
		Non-Native Species: 1
		Non-Native Cover: 12.70%

Wetland: VP-045

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Eleocharis macrostachya</i>	3	Vetetative Cover: 100%
<i>Erodium botrys</i>	0	Prevalence Index: 1.29
<i>Eryngium vaseyi</i>	2	CRAM Richness: 4
<i>Festuca perennis</i>	1	CRAM Cover: 65.17%
<i>Lasthenia fremontii</i>	3	% CVVP Species: 30.00%
<i>Leontodon saxatilis</i>	1	CVVP Cover: 63.10%
<i>Lythrum hyssopifolia</i>	1	Species Richness: 10
<i>Plagiobothrys greenei</i>	1	Native Species: 5
<i>Polygonum sp.</i>	1	Non-Native Species: 5
<i>Ranunculus aquatilis</i>	3	Non-Native Cover: 8.62%

Wetland: VP-046

Species	Cover Class	Statistics
<i>Brodiaea elegans</i>	1	Vetetative Cover: 95%
<i>Crassula aquatica</i>	1	Prevalence Index: 2.13
<i>Downingia bicornuta</i>	1	CRAM Richness: 8
<i>Eleocharis macrostachya</i>	1	CRAM Cover: 52.00%
<i>Elymus caput-medusae</i>	0	% CVVP Species: 53.33%
<i>Eryngium vaseyi</i>	2	CVVP Cover: 52.00%
<i>Lasthenia fremontii</i>	3	Species Richness: 15
<i>Leontodon saxatilis</i>	3	Native Species: 11
<i>Lythrum hyssopifolia</i>	1	Non-Native Species: 4
<i>Navarretia leucocephala</i>	1	Non-Native Cover: 32.36%
<i>Plagiobothrys greenei</i>	1	
<i>Plantago sp.</i>	1	
<i>Psilocarphus brevissimus</i>	1	
<i>Ranunculus aquatilis</i>	2	
<i>Triteleia hyacinthina</i>	1	

Wetland: VP-047

Species	Cover Class	Statistics
<i>Briza minor</i>	1	Vetetative Cover: 98%
<i>Brodiaea elegans</i>	0	Prevalence Index: 1.29
<i>Crassula aquatica</i>	1	CRAM Richness: 6
<i>Eleocharis macrostachya</i>	4	CRAM Cover: 90.10%
<i>Eryngium vaseyi</i>	2	% CVVP Species: 54.55%
<i>Festuca perennis</i>	1	CVVP Cover: 87.62%
<i>Lasthenia fremontii</i>	1	Species Richness: 11
<i>Plagiobothrys greenii</i>	1	Native Species: 9
<i>Psilocarphus brevissimus</i>	1	Non-Native Species: 2
<i>Ranunculus aquatilis</i>	1	Non-Native Cover: 5.94%
<i>Triteleia hyacinthina</i>	0	

Wetland: VP-048

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Avena sp.</i>	1	Vetetative Cover: 98%
<i>Crassula aquatica</i>	3	Prevalence Index: 1.33
<i>Downingia bicornuta</i>	1	CRAM Richness: 6
<i>Eleocharis macrostachya</i>	2	CRAM Cover: 86.11%
<i>Lasthenia fremontii</i>	3	% CVVP Species: 63.64%
<i>Leontodon saxatilis</i>	2	CVVP Cover: 87.63%
<i>Lythrum hyssopifolia</i>	1	Species Richness: 11
<i>Navarretia intertexta</i>	3	Native Species: 8
<i>Psilocarphus brevissimus</i>	3	Non-Native Species: 3
<i>Ranunculus aquatilis</i>	1	Non-Native Cover: 10.86%
<i>Triteleia hyacinthina</i>	1	

Wetland: VP-049

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Avena sp.</i>	0	Vetetative Cover: 100%
<i>Croton setiger</i>	0	Prevalence Index: 1.40
<i>Eryngium vaseyi</i>	1	CRAM Richness: 4
<i>Festuca perennis</i>	1	CRAM Cover: 83.83%
<i>Gratiola heterosepala</i>	0	% CVVP Species: 36.36%
<i>Hordeum marinum</i>	1	CVVP Cover: 83.83%
<i>Lasthenia fremontii</i>	4	Species Richness: 11
<i>Leontodon saxatilis</i>	1	Native Species: 5
<i>Lythrum hyssopifolia</i>	1	Non-Native Species: 6
<i>Navarretia intertexta</i>	1	Non-Native Cover: 15.57%
<i>Trifolium hirtum</i>	0	

Wetland: VP-050

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Eleocharis macrostachya</i>	2	Vetetative Cover: 100%
<i>Eryngium vaseyi</i>	3	Prevalence Index: 1.99
<i>Festuca perennis</i>	1	CRAM Richness: 3
<i>Hordeum murinum</i>	1	CRAM Cover: 82.48%
<i>Leontodon saxatilis</i>	1	% CVVP Species: 42.86%
<i>Lythrum hyssopifolia</i>	1	CVVP Cover: 82.48%
<i>Plagiobothrys stipitatus</i>	1	Species Richness: 7
		Native Species: 3
		Non-Native Species: 4
		Non-Native Cover: 17.52%

Wetland: VP-051

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Downingia bicornuta</i>	1	Vetetative Cover: 98%
<i>Eleocharis macrostachya</i>	4	Prevalence Index: 1.19
<i>Eryngium vaseyi</i>	1	CRAM Richness: 4
<i>Festuca perennis</i>	1	CRAM Cover: 92.36%
<i>Plagiobothrys stipitatus</i>	1	% CVVP Species: 66.67%
<i>Trifolium depauperatum</i>	1	CVVP Cover: 92.36%
		Species Richness: 6
		Native Species: 5
		Non-Native Species: 1
		Non-Native Cover: 3.82%

Wetland: VP-052

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>	
<i>Convolvulus arvensis</i>	0	Vetetative Cover:	100%
<i>Cynosurus echinatus</i>	0	Prevalence Index:	1.58
<i>Cyperus sp.</i>	0	CRAM Richness:	3
<i>Eryngium vaseyi</i>	3	CRAM Cover:	88.31%
<i>Festuca perennis</i>	1	% CVVP Species:	20.00%
<i>Hordeum marinum</i>	1	CVVP Cover:	87.88%
<i>Leontodon saxatilis</i>	1	Species Richness:	10
<i>Lythrum hyssopifolia</i>	1	Native Species:	3
<i>Plagiobothrys greenei</i>	0	Non-Native Species:	7
<i>Ranunculus bonariensis</i>	4	Non-Native Cover:	11.69%

Wetland: VP-053

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Avena sp.</i>	1	Vetetative Cover: 100%
<i>Eleocharis macrostachya</i>	3	Prevalence Index: 1.80
<i>Eryngium vaseyi</i>	3	CRAM Richness: 2
<i>Festuca perennis</i>	1	CRAM Cover: 75.62%
<i>Leontodon saxatilis</i>	1	% CVVP Species: 33.33%
<i>Rumex crispus</i>	2	CVVP Cover: 75.62%
		Species Richness: 6
		Native Species: 2
		Non-Native Species: 4
		Non-Native Cover: 24.38%

Wetland: VP-054

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Cicendia quadrangularis</i>	2	Vetetative Cover: 90%
<i>Eleocharis macrostachya</i>	3	Prevalence Index: 1.69
<i>Eryngium vaseyi</i>	2	CRAM Richness: 6
<i>Hordeum marinum</i>	2	CRAM Cover: 69.35%
<i>Leontodon saxatilis</i>	1	% CVVP Species: 54.55%
<i>Lythrum hyssopifolia</i>	1	CVVP Cover: 69.35%
<i>Mentha sp.</i>	1	Species Richness: 11
<i>Navarretia intertexta</i>	1	Native Species: 7
<i>Navarretia leucocephala</i>	1	Non-Native Species: 4
<i>Plagiobothrys stipitatus</i>	2	Non-Native Cover: 18.77%
<i>Ranunculus bonariensis</i>	2	

Wetland: VP-055

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Avena sp.</i>	1	Vetetative Cover: 92%
<i>Eleocharis macrostachya</i>	4	Prevalence Index: 1.43
<i>Hordeum marinum</i>	2	CRAM Richness: 3
<i>Leontodon saxatilis</i>	1	CRAM Cover: 81.01%
<i>Lythrum hyssopifolia</i>	1	% CVVP Species: 42.86%
<i>Plagiobothrys stipitatus</i>	3	CVVP Cover: 81.01%
<i>Ranunculus bonariensis</i>	1	Species Richness: 7
		Native Species: 3
		Non-Native Species: 4
		Non-Native Cover: 18.99%

Wetland: VP-057

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Eleocharis macrostachya</i>	3	Vetetative Cover: 98%
<i>Hordeum marinum</i>	3	Prevalence Index: 1.91
<i>Leontodon saxatilis</i>	1	CRAM Richness: 2
<i>Lythrum hyssopifolia</i>	1	CRAM Cover: 53.23%
<i>Ranunculus bonariensis</i>	2	% CVVP Species: 33.33%
<i>Rumex crispus</i>	1	CVVP Cover: 53.23%
		Species Richness: 6
		Native Species: 2
		Non-Native Species: 4
		Non-Native Cover: 46.77%

Wetland: VP-058

Species	Cover Class	Statistics
<i>Crypsis sp.</i>	2	Vetetative Cover: 96%
<i>Downingia ornatissima</i>	1	Prevalence Index: 1.62
<i>Eleocharis macrostachya</i>	3	CRAM Richness: 7
<i>Eryngium vaseyi</i>	3	CRAM Cover: 74.36%
<i>Hordeum marinum</i>	1	% CVVP Species: 66.67%
<i>Lasthenia fremontii</i>	2	CVVP Cover: 76.28%
<i>Leontodon saxatilis</i>	2	Species Richness: 12
<i>Lythrum hyssopifolia</i>	1	Native Species: 8
<i>Plagiobothrys stipitatus</i>	1	Non-Native Species: 4
<i>Psilocarphus brevissimus</i>	1	Non-Native Cover: 23.72%
<i>Ranunculus bonariensis</i>	2	
<i>Triteleia hyacinthina</i>	1	

Wetland: VP-059

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Cynosurus echinatus</i>	0	Vetetative Cover: 100%
<i>Downingia ornatissima</i>	1	Prevalence Index: 1.17
<i>Eleocharis macrostachya</i>	5	CRAM Richness: 4
<i>Eryngium vaseyi</i>	2	CRAM Cover: 87.20%
<i>Juncus effusus</i>	1	% CVVP Species: 45.45%
<i>Juncus effusus</i>	1	CVVP Cover: 89.60%
<i>Lythrum hyssopifolia</i>	1	Species Richness: 11
<i>Mentha sp.</i>	1	Native Species: 7
<i>Ranunculus bonariensis</i>	1	Non-Native Species: 4
<i>Rumex crispus</i>	0	Non-Native Cover: 5.60%
<i>Triteleia hyacinthina</i>	1	

Wetland: VP-060

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Downingia bicornuta</i>	1	Vetetative Cover: 95%
<i>Downingia ornatissima</i>	2	Prevalence Index: 1.35
<i>Eleocharis macrostachya</i>	4	CRAM Richness: 8
<i>Elymus caput-medusae</i>	1	CRAM Cover: 94.96%
<i>Eryngium vaseyi</i>	3	% CVVP Species: 72.73%
<i>Lasthenia fremontii</i>	2	CVVP Cover: 94.96%
<i>Leontodon saxatilis</i>	1	Species Richness: 11
<i>Lythrum hyssopifolia</i>	1	Native Species: 8
<i>Navarretia leucocephala</i>	2	Non-Native Species: 3
<i>Plagiobothrys stipitatus</i>	1	Non-Native Cover: 5.04%
<i>Ranunculus bonariensis</i>	2	

Wetland: VP-061

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>
<i>Eleocharis macrostachya</i>	3	Vetetative Cover: 70%
<i>Eryngium vaseyi</i>	1	Prevalence Index: 1.19
<i>Gratiola ebracteata</i>	1	CRAM Richness: 5
<i>Lasthenia fremontii</i>	2	CRAM Cover: 92.59%
<i>Leontodon saxatilis</i>	1	% CVVP Species: 71.43%
<i>Lythrum hyssopifolia</i>	1	CVVP Cover: 92.59%
<i>Plagiobothrys stipitatus</i>	2	Species Richness: 7
		Native Species: 5
		Non-Native Species: 2
		Non-Native Cover: 7.41%

Wetland: VP-062

<u>Species</u>	<u>Cover Class</u>	<u>Statistics</u>	
<i>Aira caryophyllea</i>	1	Vetetative Cover:	80%
<i>Crypsis sp.</i>	0	Prevalence Index:	1.69
<i>Downingia ornatissima</i>	1	CRAM Richness:	7
<i>Eleocharis macrostachya</i>	1	CRAM Cover:	94.25%
<i>Eryngium vaseyi</i>	4	% CVVP Species:	70.00%
<i>Gratiola heterosepala</i>	1	CVVP Cover:	94.25%
<i>Lasthenia fremontii</i>	2	Species Richness:	10
<i>Lythrum hyssopifolia</i>	1	Native Species:	7
<i>Plagiobothrys stipitatus</i>	1	Non-Native Species:	3
<i>Ranunculus bonariensis</i>	2	Non-Native Cover:	5.75%

Appendix E — RDM Sampling Datasheets

Fall 2016 RDM Sampling Data

Claremont								
Sample Number	Site Ref. #	Date	Dried Weight (grams) Sq. Foot	RDM (lbs./ac.)	Exceeds/ Meets/ Under Objective	Estimated Degree of Use	Photo #	Habitat Type
22	C-4	10/19/2016	8	768	Under	4	1,2	AG
49	C-3	10/19/2016	16	1,536	Exceeds	4	3,4	OW

RDM Objective: 800-1,200 lbs/acre for Annual Grassland (AG), 400-1,200 lbs/acre for Oak Woodland (OW)

Degree of Use:

- 1 - None Little or no use of surveyed vegetation
- 2 - Light Less than 1/3 of surveyed vegetation shows evidence of being grazed. Trampling damage is minimal.
- 3 - Moderate Grazing is spotty, but evident. Trampling damage may be evident.
- 4 - Heavy Surveyed vegetation is closely cropped. Trampling damage should be evident.
- 5 - Severe Surveyed vegetation grubbed. Trampling damage evident.

Orchard Creek								
Sample Number	Site Ref. #	Date	Dried Weight (grams) Sq. Foot	RDM (lbs./ac.)	Exceeds/ Meets/ Under Objective	Estimated Degree of Use	Photo #	Habitat Type
26	OC-1	10/12/2016	16	1,536	Exceeds	4	5,6	AG
29	OC-1	10/12/2016	12	1,152	Meets	3	7,8	AG

RDM Objective: 800-1,200 lbs/acre for Annual Grassland (AG), 400-1,200 lbs/acre for Oak Woodland (OW)

Degree of Use:

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- 4 - Heavy Surveyed vegetation is closely cropped. Trampling damage should be evident.
- 5 - Severe Surveyed vegetation grubbed. Trampling damage evident.

Stanford Ranch								
Sample Number	Site Ref. #	Date	Dried Weight (grams) Sq. Foot	RDM (lbs./ac.)	Exceeds/ Meets/ Under Objective	Estimated Degree of Use	Photo #	Habitat Type
4	SR-8	10/20/2016	11	1,056	Meets	2	9,10	AG
10	SR-13	10/26/2016	11	1,056	Meets	2	11,12	AG
11	SR-12	10/26/2016	6	576	Under	3	13,14	AG
12	SR-12	10/26/2016	3	288	Under	3	15,16	AG
13	SR-14	10/26/2016	8	768	Under	2	17,18	AG
14	SR-21	10/26/2016	9	864	Meets	3	19,20	AG
15	SR-8	10/20/2016	13	1,248	Exceeds	2	21,22	AG
16	SR-8	10/20/2016	20	1,920	Exceeds	2	23,24	AG
17	SR-17	10/26/2016	10	960	Meets	1	25,26	AG
18	SR-19	10/26/2016	10	960	Meets	2	27,28	AG
19	SR-16	10/26/2016	20	1,920	Exceeds	2	29,30	AG
34	SR-15	10/26/2016	16	1,536	Exceeds	3	31,32	OW
35	SR-15	10/26/2016	5	480	Meets	4	33,34	OW
36	SR-13	10/26/2016	9	864	Meets	2	35,36	OW
37	SR-21	10/26/2016	1	96	Under	3	37,38	OW
38	SR-11	10/20/2016	69	6,624	Exceeds	1	39,40	OW
39	SR-10	10/26/2016	8	768	Meets	3	41,42	OW
40	SR-18	10/26/2016	14	1,344	Exceeds	2	43,44	OW
41	SR-8	10/20/2016	12	1,152	Meets	2	45,46	OW
42	SR-17	10/26/2016	1	96	Under	1	47,48	OW
43	SR-17	10/26/2016	12	1,152	Meets	3	49,50	OW
44	SR-7	10/20/2016	10	960	Meets	2	51,52	OW
45	SR-7	10/20/2016	25	2,400	Exceeds	2	53, 54	OW
46	SR-4	10/20/2016	25	2,400	Exceeds	5	55,56	OW
47	SR-6	10/20/2016	27	2,592	Exceeds	5	57, 58	OW
48	SR-2	10/20/2016	10	960	Meets	5	59, 60	OW

RDM Objective: 800-1,200 lbs/acre for Annual Grassland (AG), 400-1,200 lbs/acre for Oak Woodland (OW)

Degree of Use:

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- 4 - Heavy Surveyed vegetation is closely cropped. Trampling damage should be evident.
- 5 - Severe Surveyed vegetation grubbed. Trampling damage evident.

Sunset West								
Sample Number	Site Ref. #	Date	Dried Weight (grams) Sq. Foot	RDM (lbs./ac.)	Exceeds/ Meets/ Under Objective	Estimated Degree of Use	Photo #	Habitat Type
1	SW-8	10/5/2016	11	1,056	Meets	2	61, 62	AG
3	SW-6	10/5/2016	8	768	Under	3	63, 64	AG
5	SW-7	10/5/2016	17	1,632	Exceeds	1	65, 66	AG
6	SW-4	10/5/2016	33	3,168	Exceeds	2	67,68	AG
7	SW-1	10/5/2016	13	1,248	Exceeds	3	69, 70	AG
8	SW-3	10/5/2016	63	6,048	Exceeds	2	71,72	AG
9	SW-1	10/5/2016	11	1,056	Meets	2	73, 74	AG
31	SW-6	10/5/2016	31	2,976	Exceeds	2	75, 76	OW
32	SW-4	10/5/2016	12	1,152	Meets	2	77, 78	OW
33	SW-5	10/5/2016	11	1,056	Meets	2	79, 80	OW

RDM Objective: 800-1,200 lbs/acre for Annual Grassland (AG), 400-1,200 lbs/acre for Oak Woodland (OW)

Degree of Use:

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- 3 - Moderate Grazing is spotty, but evident. Trampling damage may be evident.
- 4 - Heavy Surveyed vegetation is closely cropped. Trampling damage should be evident.
- 5 - Severe Surveyed vegetation grubbed. Trampling damage evident.

Whitney Ranch								
Sample Number	Site Ref. #	Date	Dried Weight (grams) Sq. Foot	RDM (lbs./ac.)	Exceeds/ Meets/ Under Objective	Estimated Degree of Use	Photo #	Habitat Type
2	WR-4	10/12/2016	17	1,632	Exceeds	4	81,82	AG
20	WR-6	10/19/2016	12	1,152	Meets	2	83, 84	AG
21	WR-5	10/19/2016	16	1,536	Exceeds	3	85, 86	AG
23	WR-5	10/19/2016	14	1,344	Exceeds	2	87, 88	AG
24	WR-6	10/19/2016	18	1,728	Exceeds	3	89, 90	AG
25	WR-2	10/12/2016	33	3,168	Exceeds	4	91, 92	AG
27	WR-3	10/12/2016	16	1,536	Exceeds	4	93, 94	AG
28	WR-4	10/12/2016	18	1,728	Exceeds	4	95, 96	AG
30	WR-1	10/12/2016	27	2,592	Exceeds	3	97, 98	AG
50	WR-1	10/12/2016	35	3,360	Exceeds	4	99, 100	OW

RDM Objective: 800-1,200 lbs/acre for Annual Grassland (AG), 400-1,200 lbs/acre for Oak Woodland (OW)

Degree of Use:

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- 2 - Light Less than 1/3 of surveyed vegetation shows evidence of being grazed. Trampling damage is minimal.
- 3 - Moderate Grazing is spotty, but evident. Trampling damage may be evident.
- 4 - Heavy Surveyed vegetation is closely cropped. Trampling damage should be evident.
- 5 - Severe Surveyed vegetation grubbed. Trampling damage evident.