Botanical Resources Report

Zayo Prineville-to-Reno Fiber Optic Project

September 16, 2020

Prepared for:

Zayo Group LLC
18110 SE 34th Street, Ste. 100
Vancouver, Washington 98683

Prepared by:

Stantec Consulting Services Inc.
376 Hartnell Avenue, Suite B
Redding, CA 96002

PRINEVILLE-TO-RENO FIBER OPTIC PROJECT

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Prepared by Sarah Tona
(signature)

Sarah Tona

Reviewed by
(signature)

Nick Eide

Approved by Sara Lindberg
(signature)

Sara Lindberg

Executive Summary

Zayo Group, LLC, proposes the construction and operation of a fiber optic cable from Prineville, Oregon, to Reno, Nevada (Project). The Project would install fiber-optic cable underground by plowing, trenching, and/or directional boring. This report addresses the botanical surveys conducted in the 194-mile segment of the Project that traverses California (Project segment) across Modoc, Lassen, and Sierra Counties. The study area (i.e., area evaluated for potential project-related effects) occurs within the California Department of Transportation right-of-way along U.S. Route 395 and Lassen County right-of-way along Standish Buntingville Road. The botanical survey area occurs in the accessible portions of the study area. The study area encompasses 6,011 acres, while the botanical survey area encompasses 5,538 acres.

Stantec Consulting Services Inc. (Stantec) conducted botanical resource surveys from May to August 2019 and April to August 2020. These surveys are intended to provide information to support environmental review of the Project segment in accordance with the California Environmental Quality Act and National Environmental Policy Act and regulatory agency permit applications/authorizations for plants listed under the federal Endangered Species Act or the California Endangered Species Act, if applicable.

Stantec's vegetation mapping resulted in 61 mapped vegetation communities to the alliance or association level, 22 of which are considered sensitive natural communities by California Department of Fish and Wildlife. During the botanical surveys, Stantec documented 38 special status plant species on both private and public lands, including five species considered sensitive by the U.S. Bureau of Land Management (BLM) on lands that they administer. Stantec also documented 19 invasive plant species on all land ownerships and 14 invasive plant species on BLM lands in the study area.

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Acronyms and Abbreviations

% RC	percent relative cover
BLM	Bureau of Land Management
Cal-IPC	California Invasive Plant Council
Caltrans	California Department of Transportation
CDFA	California Department of Food and Agriculture
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
ESA	federal Endangered Species Act
°F	degrees Fahrenheit
GPS	global positioning system
MCV	*A Manual of California Vegetation, Second Edition*
NEPA	National Environmental Policy Act
Project	construction and operation of a fiber optic cable from Prineville, Oregon, to Reno, Nevada
Project segment	segment of the Project that traverses California
Stantec	Stantec Consulting Services Inc.
US 395	U.S. Highway 395
USFWS	U.S. Fish and Wildlife Service
Zayo	Zayo Group, LLC

1.0 INTRODUCTION

Zayo Group, LLC, (Zayo) proposes the construction and operation of a fiber optic cable from Prineville, Oregon, to Reno, Nevada (Project). This report describes surveys and results of the segment of the Project that traverses California (Project segment) and occurs in Modoc, Lassen, and Sierra Counties. The Project segment extends 194 miles mainly along U.S. Route 395 (US 395), with a small section along Standish Buntingville Road, Lassen County, from the California-Oregon border to the California-Nevada border (**Error! Reference source not found.**). The Project would install conduit and fiber optic cable through plowing in, trenching, or directional boring along the proposed running line (i.e., the location where the conduit and fiber optic cable would be installed).

The study area (i.e., the area evaluated for potential Project-related effects) for the Project segment occurs within the California Department of Transportation (Caltrans) right-of-way along US 395 and Lassen County right-of-way along Standish Buntingville Road. The Caltrans and Lassen County rights-of-way vary in width from 20 to 250 feet measured from the edge of pavement to the edge of the right-of-way boundaries. The study area encompasses 6,011 acres and includes the entire right-of-way. The botanical survey area includes most of the study area, totaling 5,538 acres. It excludes several portions of the study area that were inaccessible.

Stantec Consulting Services Inc. (Stantec) conducted botanical resource surveys for the Project segment in the spring and summer of 2019 and 2020. Stantec also conducted vegetation mapping in the full study area along the Project segment during the summer of 2019 and conducted a quality check of mapped boundaries in the spring of 2020. These studies are intended to provide information to support the environmental review of the Project segment in accordance with the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) and regulatory agency permit applications/authorizations for plants listed under the federal Endangered Species Act (ESA) or California Endangered Species Act (CESA), if applicable.

2.0 ENVIRONMENTAL SETTING

The Project segment extends through California's Modoc bioregion as it follows US 395 from the Oregon border south to the Nevada border. The Modoc bioregion's climate is characterized as dry, cold, and continental. The average annual rainfall as reported from Alturas, California, is approximately 12 inches, and the average annual snowfall is 30 inches (Western Regional Climate Center 2019). Air temperatures range from an average January high of 42 degrees Fahrenheit (°F) to an average July high of 88°F (Western Regional Climate Center 2019).

The Modoc bioregion is further separated into the Modoc Plateau and Basin and Range geomorphic provinces. The Modoc Plateau is a volcanic table landscape that generally occurs at elevations from 4,000 to 6,000 feet above sea level (Fuller et al. 2015). Millions of years ago, volcanic activity produced a thick accumulation of lava flows and ash beds that built the plateau. Numerous northerly and southerly faults cut across the plateau and have broken portions of the plateau apart into tilt-block mountains (Fuller et al. 2015). The primary watershed of the Modoc Plateau is the Pit River watershed, which drains in a westerly direction into the Sacramento River. The plateau supports many high desert plant communities, including juniper woodlands, sagebrush steppes, sagebrush scrub, and perennial and annual grasslands. Several wetland plant communities are also present in the region, including riparian wetlands, marshes, seasonal wetlands, and vernal pools. In addition to natural vegetation communities, numerous cattle ranches and agricultural fields occur, particularly along the US 395 right-of-way.

The Basin and Range portion of the Modoc bioregion is the westernmost part of the much larger Great Basin and is characterized by fault-bounded mountain ranges that are separated by broad basins or valleys (Fuller et al. 2015). Basins within the Modoc bioregion generally occur at elevations greater than 3,000 feet above sea level. Most streams and rivers of the Basin and Range drain into lakes and playas in the interior of the continent. The Basin and Range is dominated by sagebrush and salt-desert scrub communities. Wetlands and alkali flats are present and generally occur at lower elevations in the basins. Most of the Basin and Range portion of the Project segment is undeveloped, with some agricultural lands bordering prominent streams. Free range cattle grazing is a common land use when water sources are available.

The U.S. Department of Agriculture, Natural Resources Conservation Service has mapped soil map units in the Project segment (Natural Resources Conservation Service 2020). One hundred fifty-one soil map units occur in the study area (Figure 2).

3.0 METHODS

3.1 REFERENCE REVIEW

Prior to the field studies, Stantec established the study area, reviewed landownerships and regulatory requirements, and reviewed botanical references. The study area occurs entirely within Caltrans's US 395 right-of-way and Lassen County's right-of-way along Standish Buntingville Road where installation of the conduit and fiber optic cable is proposed. The botanical survey area is slightly smaller than the study area in some locations because tall fences or unsafe conditions prohibited entry. The study area occurs on private, Bureau of Land Management (BLM), U.S. Fish and Wildlife Service (USFWS), and California Department of Fish and Wildlife (CDFW) land ownerships.

Stantec identified plant communities and potentially occurring special status plant species in the study area using a combination of database searches, reviews of existing information, and vegetation mapping conducted during field visits. For the purpose of this evaluation, special status plant species include the following, as listed in the most current CDFW *Special Vascular Plants, Bryophytes, and Lichens List* (CDFW 2020a):

1. plants listed, proposed for listing, or are a candidate for listing under the CESA or the federal ESA;
2. designated as rare by CDFW;
3. listed as California Rare Plant Rank (CRPR) 1, 2, 3 or 4; or
4. considered a BLM Sensitive Species

Prior to conducting field work, we developed a list of special status plant species that could occur in the study area using the following databases: the California Natural Diversity Database (CNDDB) (CDFW 2020b), the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (CNPS 2020a), the Official Species List generated by the USFWS Information, Planning, and Conservation project planning tool (USFWS 2020a).

The CNDDB was queried for reported occurrences of special status plants within the 7.5-minute U.S. Geological Survey topographic quadrangles in the study area, as well as those quadrangles immediately adjacent (CDFW 2020b). The CNDDB is a database consisting of historical observations of special status plant species, wildlife species, and natural plant communities. Because the CNDDB is limited to reported sightings, it is not a comprehensive list of species that may occur in an area.

Stantec also queried the CNPS online Inventory of Rare and Endangered Plants of California (CNPS 2020a), which allows users to search the inventory using a set of criteria (e.g., location, habitat, elevation). The CNPS inventory was queried for all CRPR 1, 2, 3, and 4 plants occurring in the same topographic quadrangles included in the CNDDB query. All CRPR 1, 2, 3, and 4 plant species were included in the queries to evaluate whether any of these plant species have the potential to occur in the study area.

Stantec reviewed the Official Species List generated from the USFWS Information, Planning, and Conservation online project planning tool, which identifies federally listed, proposed and candidate species, as well as critical habitat that may occur in the study area (USFWS 2020b). The Official Species List generated by the USFWS Information, Planning, and Conservation online tool is a comprehensive list of regionally occurring federally protected species and their critical habitat provided by the USFWS for purposes of consultation, which uses project-specific boundaries to generate the list of species and their critical habitat. The study area was used to generate the Official Species List for the Project segment.

Soil types mapped in the study area (Figure 2) were also reviewed to determine if any soils are known to occur that may provide suitable habitat for special status plant species, such as serpentine or limestone (Natural Resources Conservation Service 2020). We consulted the Consortium of California Herbaria (Consortium of California Herbaria 2020) and Calflora (Calflora 2020) to review specimen records, photographs, and habitat descriptions to better identify potential special-status species and their habitat.

Stantec consulted with several taxon experts to assist in plant identification during the course of the botanical survey, including Genevieve Walden with the California Department of Food and Agriculture (CDFA) regarding playa phacelia (*Phacelia inundata*) and Teresa Sholars with Mendocino College regarding intermountain lupine (*Lupinus pusillus* var. *intermontanus*) (W. Boes, personal communications, May 15, 2019). Stantec reviewed several raven's lomatium (*Lomatium ravenii*) varieties with Don Mansfield with the University of Idaho (W. Boes personal communications, May 15, 2019, S. Tona personal communications April 30, 2020). Stantec confirmed a dotted onion (*Allium punctum*) identification with Nick Otting with Oregon State University (S. Tona personal communications, May 27, 2020). Stantec reviewed several taxa with Arnold Tiehm with the University of Nevada, Reno Herbarium (W. Boes personal communications, August 4, 2020). Stantec also consulted with BLM botanists to discuss botanical resource concerns on BLM lands, including special status plants and invasive plant species. Stantec communicated with Sarah Canham, the botanist for the Prineville District, and Valda Lockie, the ecologist in the Eagle Lake Field Office (S. Tona, personal communication, April 17, 2019). Stantec botanists visited the Reno Herbarium at the University of Nevada, Reno, on five separate occasions (May 16 and 21, and June 17, 2019 and August 4 and 5, 2020) during the botanical survey to review herbarium specimens of target special status species to review key characteristics and to develop an accurate search image for field surveys.

Special status plant species were added to the target list of species with potential to occur in the study area if suitable habitat was present and its geographic and elevational ranges overlapped with the study area. A list of all special status plant species with the potential to occur in the study area is included in Appendix A.

Prior to the field work, Stantec used several resources to identify and classify vegetation communities within the study area. These resources included the California Vegetation Inventory (CDFW 2019a); USFWS National Wetland Inventory (USFWS 2020a); Google Earth aerial imagery dating back to 1985; and Google Earth street view. Prior to conducting field surveys, potential vegetation community boundaries were digitized using current ArcGIS software and were loaded on to a working field map that was then used as a reference and refined during field surveys. The vegetation types and boundaries were updated based on the field findings following the survey efforts.

3.2 FIELD SURVEYS

3.2.1 Vegetation Mapping

Stantec conducted surveys to characterize natural vegetation communities and describe the existing environment during the 2019 surveys and conducted a quality check during the 2020 surveys. The vegetation mapping included the entire Caltrans and Lassen County rights-of-way. Vegetation mapping followed the technical approach and vegetation alliance classification system described in *A Manual of California Vegetation, Second Edition* (MCV) (Sawyer et al. 2009) and updated in the current online edition (CNPS 2020b). The MCV represents the most recent efforts to provide a common and accepted vegetation classification system for use throughout California and classifies vegetation into a set of plant alliances, associations, special stands, or semi-natural stands. A plant species' dominance or importance in the stratum (i.e., tree, woody shrub/subshrub, or non-woody herbaceous) with the greatest amount of cover generally determines the vegetation alliance classification. The mapping effort also included identifying and documenting all CDFW California Sensitive Natural Communities in the study area. Sensitive natural communities as defined by CDFW are those with a state rarity ranking of S1 (critically imperiled), S2 (imperiled), or S3 (vulnerable). To identify sensitive natural communities within the study area, we reviewed each natural community identified during field mapping against the *California Natural Community List* dated November 8, 2019 (CDFW 2019b).

Stantec botanists mapped vegetation in the field by walking and driving along the study area and assessing plant species composition and vegetative cover within stands. Stantec used the Collector for ArcGIS application on tablets and phones to collect vegetation data in the field. The tablets were paired with global positioning system (GPS) receivers for increased accuracy. All stands were classified to the alliance level, or association level when an association was present. During field assessments, we identified and delineated the MCV or other alliance and association types onto field maps with aerial imagery. Stantec botanists delineated the boundaries of natural communities based on characteristics observed in the field and vegetation signatures observed on aerial imagery during the desktop review. Information was collected by Stantec botanists to document each mapped vegetation community, including plant species composition (i.e., percent relative cover [% RC] of dominant and sub-dominant species within each stratum), stand structure, regional occurrence, and other notable characteristics. Stantec then digitized the delineated boundaries in current ArcGIS software for display and data query purposes. Stantec used vegetation signatures on aerial imagery to map vegetation communities in inaccessible areas; thus, the vegetation mapping was performed in the entire study area and not limited to the botanical survey area. The natural community boundaries are shown in Figure 3.

John Holson, Stantec botanist, managed the vegetation mapping effort. The field team included John Holson, Sheryl Creer, Laurel Hoffman, Sarah Tona, Wendy Boes, Mike Dolan, and Karen Whitestone.

Stantec biologists encountered several natural communities in the study area that are not currently described in the MCV because the study area occurs in an area currently being classified or that remains unclassified. As a result, and for the purposes of this report, we designated several new alliance and association types not currently provided in the MCV. We described these new alliances and associations by classifying dominant and sub-dominant vegetation and by assessing repeated plant species

composition across the study area. Stantec assessed the status of new vegetation communities as sensitive natural communities based on existing CDFW classifications. CDFW considers all associations within sensitive alliances to be sensitive. As such, Stantec considered new associations mapped within existing sensitive alliances to be sensitive. Diana Hickson of CDFW (personal communication, October 28, 2019) confirmed that these communities, while currently undescribed in MCV, should be considered sensitive. In addition, new alliances dominated by non-native species are not be considered sensitive communities. For new alliances and associations dominated by native species, we followed CDFW guidance and used corresponding vegetation types and listing status provided in *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986).

3.2.2 Special Status Plant Species

3.2.2.1 Reference Population Visits

Stantec botanists visited nearby reference populations for 40 special status plant species with the potential to occur to determine if the plants were in bloom or were otherwise identifiable at the time of the survey. These visits also provided the field team an opportunity to refine their search images for specific taxa. Stantec queried the CNDDB to identify nearby reference populations, and field visits took place between mid-May and mid-July of 2019 and 2020. Table 1 shows which special-status plant species were visited and if each species was re-found.

Table 1: Visited Special Status Plant Species Reference Populations

Special Status Species Scientific Name	Status[1] Federal/State/CRPR	Number of Visits to Reference Sites	Reference Population Found (Yes/No)
Alisma gramineum	--/--/2B.2	1	No
Allium atrorubens var. *atrorubens*	--/--/2B.3	2	No
Astragalus agrestis	BLMS/--/2B.2	1	No
Astragalus geyeri var. *geyeri*	--/--/2B.2	2	No
Astragalus pulsiferae var. pulsiferae	BLMS/--/1B.2	1	No
Atriplex argentea var. *hillmanii*	--/--/2B.2	2	No
Atriplex gardneri var. *falcata*	--/--/2B.2	2	**Yes**
Balsamorhiza serrata	--/--/2B.3	1	No
Chylismia claviformis ssp. *cruciformis*	--/--/2B.3	3	**Yes**
Dimeresia howellii	--/--/2B.3	1	No
Downingia laeta	--/--/2B.2	2	No
Erigeron eatonii var. *nevadincola*	--/--/2B.3	4	**Yes**
Eriogonum microthecum var. *schoolcraftii*	--/--/1B.2	3	**Yes**
Eriogonum ochrocephalum var. *ochrocephalum*	--/--/2B.2	1	No
Eriogonum prociduum	BLMS /--/1B.2	2	**Yes**
Erythranthe inflatula	BLMS/--/1B.2	2	No

Special Status Species Scientific Name	Status[1] Federal/State/CRPR	Number of Visits to Reference Sites	Reference Population Found (Yes/No)
Frasera albicaulis var. *modocensis*	--/--/2B.3	3	**Yes**
Gratiola heterosepala	BLMS/E/1B.2	1	No
Hymenoxys lemmonii	--/--/2B.2	2	**Yes**
Ivesia webberi	BLMS /--/1B.1	2	**Yes**
Ladeania lanceolata	--/--/2B.3	1	No
Lomatium foeniculaceum ssp. *Macdougalii*	--/--/2B.2	4	**Yes**
Lomatium ravenii var. *ravenii*	--/--/1B.3	4	Yes
Lomatium roseanum	BLMS/--/1B.2	2	Yes
Lupinus latifolius var. *barbatus*	--/--/3.2	1	No
Lupinus pusillus var. *intermontanus*	--/--/2B.3	2	**Yes**
Lupinus uncialis	BLMS/--/2B.2	4	**Yes**
Orobanche ludoviciana var. *arenosa*	--/--/2B.3	1	No
Pedicularis centranthera	BLMS/--/2B.3	1	**Yes**
Penstemon sudans	BLMS /--/1B.2	2	**Yes**
Phacelia adenophora (note: reference population misidentified as *Phacelia inundata*)	BLMS /--/1B.3	2	**Yes**
Polygala subspinosa	--/--/2B.2	4	**Yes**
Rumex venosus	--/--/2B.3	3	**Yes**
Scutellaria holmgreniorum	--/--/3.3	1	No
Stachys pilosa	--/--/2B.3	2	No
Stanleya viridiflora	--/--/2B.3	2	**Yes**
Suaeda occidentalis	--/--/2B.3	2	No
Thelypodium milleflorum	--/--/2B.2	2	No
Trifolium gymnocarpon ssp. *plummerae*	--/--/2B.3	3	**Yes**
Viola purpurea ssp. *aurea*	--/--/2B.2	2	**Yes**

Notes:
1. Federal:; BLMS = Bureau of Land Management Sensitive.
State: E = Endangered.
California Rare Plant Rank (CRPR) Codes and Extensions:
1B = Plants rare, threatened, or endangered in California and elsewhere.
2B = Plants rare, threatened, or endangered in California but more common elsewhere
3 = Review list: Plants about which more information is needed
00.1 Seriously threatened in California
00.2 Moderately threatened in California
00.3 Not very endangered in California

Stantec did not locate reference populations for 19 out of 40 special status species identified in Table 1 during the visits. Many of these sites may be extirpated because they were overcome with non-native invasive species such as cheatgrass (*Bromus tectorum*) or were in otherwise disturbed locations.

Regardless of whether reference populations were found, the floristic surveys were conducted during the time period when potentially occurring special status plant species would be identifiable. The 21 reference populations that were found allowed Stantec to confirm the appropriate survey timing for when identification of the special status species was most likely.

3.2.2.2 Botanical Surveys

Stantec botanists conducted botanical surveys in accordance with the CDFW *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (CDFW 2018). On BLM lands, botanical surveys followed the *Survey Protocols Required for NEPA/ESA Compliance for BLM Special-Status Species* (U.S. Department of the Interior 2009). The field surveys were floristic in nature, and each species observed was identified to the taxonomic level necessary to determine whether the plant was listed as a special status species or not. Plant taxonomy follows Baldwin et al. (2012), including applicable errata and supplements provided in the Jepson eflora (Jepson Flora Project 2020). Several exceptions are made for taxa included in the CNPS Inventory of Rare and Endangered Plants that are not included in the Jepson eflora. In these cases, other floras and original species descriptions as provided by the CNPS Inventory are used to identify the taxa (CNPS 2020a).

Stantec botanists conducted several survey passes of the botanical survey area, each of which consisted of walking meandering transects that covered the entire botanical survey area. We completed multiple survey passes to observe early-, mid-, and late-season (i.e., April/May, June, July/August plants) (Table 2), expending 1,952 person-hours of field survey time. The timing of the botanical field surveys coincided with the blooming period(s) for potentially occurring special status plants in the botanical survey area.

Table 2: Botanical Survey Dates

May 2020	May 2019	June 2019	July 2019	August 2019
N/A	22-31	1-9, 18-27	29	3-4
April 2020	**May 2020**	**June 2020**	**July 2020**	**August 2020**
27-28	6-31	2-23	N/A	4-6

Stantec botanists collected voucher specimens of special status species located in the botanical survey area. Voucher collections were only made when plant populations were of a sufficient size to allow collecting but not jeopardize the population survivorship. Vouchers were submitted to the California State University Chico Herbarium and the Reno Herbarium at the University of Nevada, Reno.

Stantec botanists used the Collector for ArcGIS application on tablets and phones to collect plant occurrence data in the field. The tablets were paired with GPS receivers for increased accuracy.

Sarah Tona, Stantec botanist, managed the botanical survey effort, while Wendy Boes led the field efforts. Field teams included eleven individuals during 2019 and 2020: Karen Whitestone, Cristian Singer, Sheryl Creer, Laurel Hoffman, John Holson, Tasha Kayatsky, Rich Crawford, Glenn Rink, Mike Dolan, Adam Hamburg, Yancey Bissonnette, and Brant Primrose. The qualifications and work experience of each staff member are summarized below.

- Sarah Tona has a Bachelor of Science in Plant Biology. She has 10 years of experience performing botanical surveys in California.
- Wendy Boes has a Bachelor of Science in Botany and 16 years of experience conducting botanical surveys in California and Oregon.
- Cristian Singer has a Bachelor of Science in Environmental Biology with a focus on botany. He has 24 years of experience conducting botanical surveys in California.
- Karen Whitestone has a Bachelor of Science in Biological Sciences. She has 5 years of experience performing botanical surveys and other biological monitoring in California.
- Sheryl Creer has a Bachelor of Science in Botany and a Master of Science in Biology. She has over 10 years of botanical experience in California.
- Laurel Hoffman has a Bachelor of Science in Ecology and 4 years of botanical and vegetation experience in California.
- John Holson has a Bachelor of Science in Ecology and 15 years of experience conducting botanical surveys in California and is a certified Professional Wetland Scientist.
- Tasha Kayatsky has a Bachelor of Science in Biology and is completing her Master of Science in Ecology, Evolution, and Conservation Biology. She has three field seasons of experience performing botanical surveys in California.
- Rich Crawford has a Bachelor of Science in Biology and a Master of Science in Botany. Mr. Crawford has more than 13 years of botanical experience in the western United States.
- Glen Rink has a Bachelor of Science in Biology and a Master of Science in Botany. Mr. Rink has more than 15 years of botanical experience in the western United States.
- Mike Dolan has a Bachelor of Science in Range Management and more than 25 years of botanical experience in the western United States.
- Adam Hamburg has a Bachelor of Science in Environmental Sciences and more than 12 years of botanical experience in the western United States.
- Yancey Bissonette has a Bachelor of Science in General Biology with a minor in Native American Studies. Mr. Bissonette has 14 years of botanical experience in California.
- Brant Primrose has a Bachelor of Science in Biology and more than 19 years of experience as a biologist and botanist in California.

3.2.3 Invasive Plants

For the purposes of surveying for invasive plant species (i.e., noxious weed), invasive plant species are defined as those included in the California Invasive Plant Council (Cal-IPC) inventory with ratings of High, Moderate, or Limited (Cal-IPC 2020) or are considered noxious by CDFA (CDFA 2020). Stantec reviewed all non-native plant species observed to determine their status as invasive plants.

Stantec botanists mapped all invasive plant occurrences on BLM lands and some areas adjacent to BLM lands. This included taking point or polygon data of invasive plant populations and individuals and

collecting other site-specific information, including phenology, distribution pattern, whether the population is near special status plant populations or riparian areas, and distance to the roadway.

4.0 RESULTS AND DISCUSSION

4.1 VEGETATION COMMUNITIES

Stantec mapped 61 vegetation communities in the study area to the alliance or association level (Figure 3 and Table 3). This includes seven alliances and 40 associations not currently described in the MCV. Of these communities, we did not consider those dominated by non-native/invasive species to be sensitive natural communities and considered associations in existing sensitive alliances to be sensitive. We assessed remaining communities based upon status of a corresponding vegetation type in Holland per CDFW guidance. Five alliances and six associations dominated by native species do not have corresponding communities in Holland. Diana Hickson of CDFW (personal communication, October 28, 2019) confirmed that these communities, while currently undescribed in MCV, should be considered sensitive.

Twenty-two of the vegetation communities in the study area are categorized as sensitive natural communities by CDFW (including new associations that Stantec presumed to be considered sensitive by CDFW due to their inclusion in an existing sensitive alliance), which accounts for about 1,070 acres of the study area (Table 3). Each mapped vegetation alliance is described below. In general, vegetation communities are listed by stratum (i.e., tree, shrub, herb). Alliance descriptions are based on plant community characteristics observed in the study area and do not represent an exhaustive description of these alliances. Percent relative cover pertains to the dominant, co-dominant, or sub-dominant species in each stratum and not to the overall vegetation within a stand. This use of % RC corresponds to the MCV guidelines and membership rules for classification.

Table 3: Vegetation Communities in the Study Area

Alliance	Association	Sensitive Natural Community	Map ID	Area (Acres)
A Manual of California Vegetation Alliances and Associations[1]				
Forests and Woodlands				
Western juniper woodland	*Juniperus occidentalis / Artemisia arbuscula – Purshia tridentata / Festuca idahoensis*[2]	No[2]	16.01	19.9
	Juniperus occidentalis / Artemisia arbuscula / Poa secunda[2]	No[2]	16.02	117.3
	Juniperus occidentalis / Artemisia arbuscula / Stipa thurberiana[2]	No[2]	16.03	0.4
	Juniperus occidentalis / Artemisia tridentata – Purshia tridentata[2]	No[2]	16.04	232.2
	Juniperus occidentalis – (Pinus jeffreyi – Pinus ponderosa) / Cercocarpus ledifolius	No	16.05	3.4
	Juniperus occidentalis / Poa secunda – Elymus elymoides[2]	No[2]	16.06	4.7

Alliance	Association	Sensitive Natural Community	Map ID	Area (Acres)
A Manual of California Vegetation Alliances and Associations[1]				
	Juniperus occidentalis	No	16.07	43.5
	Juniperus occidentalis - Pinus jeffreyi / (Purshia tridentata)	No	16.08	12.0
Jeffrey pine forest	*Pinus jeffreyi / Purshia tridentata*	Yes	19.01	6.5
aspen groves	*Populus tremuloides / Symphoricarpos rotundifolius*	Yes	21	0.5
black cottonwood forest	*Populus trichocarpa*	Yes	22	0.2
Shrublands				
little sagebrush scrub	*Artemisia arbuscula* ssp. *arbuscula / Bromus* spp. *–Elymus caput-medusae*[2, 7]	No[2]	5.01	83.5
	Artemisia arbuscula ssp. *arbuscula / Poa secunda*[3]	Yes[3]	5.02	192.0
silver sagebrush scrub[4]	*Artemisia cana (ssp. bolanderi,* ssp. *viscidula) / Poa secunda*[4]	Yes[4]	6	0.9
big sagebrush	*Artemisia tridentata – Ephedra viridis / Pseudoroegneria spicata*[2]	No[2]	7.01	17.2
	Artemisia tridentata – Ericameria nauseosa / Bromus tectorum[2]	No[2]	7.02	997.2
	Artemisia tridentata / Bromus tectorum[2]	No[2]	7.04	131.1
	Artemisia tridentata / Distichlis spicata[2]	No[2]	7.05	0.8
	Artemisia tridentata	No	7.06	860.1
	Artemisia tridentata ssp. *wyomingensis – Peraphyllum ramosissimum*[2]	No[2]	7.08	2.2
	Artemisia tridentata ssp. *wyomingensis / Stipa thurberiana – Poa secunda*[2]	No[2]	7.09	22.0
mountain big sagebrush	*Artemisia tridentata* ssp*. vaseyana*	No	36	29.6
rubber rabbitbrush scrub	*Ericameria nauseosa / Bromus tectorum*[2]	No[2]	14.01	121.3
	Ericameria nauseosa	No	14.02	18.5
bitter cherry thickets	*Prunus emarginata*	No	23	1.0
Klamath plum thickets[3]	*Prunus subcordata /Elymus cinereus*[3, 5]	No[3]	24	0.2
bitterbrush scrub	*Purshia tridentata – Artemisia arbuscula*[4]	Yes[4]	25.01	22.5

Alliance	Association	Sensitive Natural Community	Map ID	Area (Acres)
A Manual of California Vegetation Alliances and Associations[1]				
	Purshia tridentata – Artemisia tridentata – Tetradymia canescens	Yes	25.02	37.0
	Purshia tridentata – Artemisia tridentata / Bromus tectorum[4]	Yes[4]	25.03	4.5
	Purshia tridentata – Artemisia tridentata	Yes	25.04	431.7
	Purshia tridentata – Prunus subcordata[4]	Yes[4]	25.05	1.3
interior rose thickets	*Rosa woodsii*	Yes	26	7.6
sandbar willow thickets	*Salix exigua / Juncus balticus*[2]	No[2]	27.01	10.1
	Salix exigua	No	27.02	35.8
shining willow groves	*Salix lucida – Rosa woodsii* / Mixed Herbs[4]	Yes[4]	28	3.6
greasewood scrub	*Sarcobatus vermiculatus – Artemisia tridentata*[3]	Yes[3]	29.01	198.0
	Sarcobatus vermiculatus	No	29.02	11.1
Herbaceous Vegetation				
crested wheatgrass rangelands	*Agropyron cristatum*	No	2	33.1
meadow foxtail meadows[2]	*Alopecurus pratensis*[2]	No[2]	3	263.1
cheatgrass grassland	*Bromus tectorum – Agropyron cristatum*[6]	No[6]	8.01	11.0
	Bromus tectorum – Elymus caput-medusae[7]	No	8.02	70.1
	Bromus tectorum[6]	No[6]	8.03	302.4
Sheldon's sedge patch[3]	*Carex sheldonii – Elymus cinereus*[3,5]	Yes[3]	9	3.4
one spike oat grass meadows[3]	*Danthonia unispicata – Poa secunda*[3]	Yes[3]	10	7.5
ashy ryegrass meadows	*Elymus cinereus – Alopecurus geniculatus*[4, 5]	Yes[4]	11.01	22.6
	Elymus cinereus[5]	Yes	11.02	43.6
blue wild rye montane meadows[2]	*Elymus glaucus -– Medicago sativa*[2]	No[2]	12	45.5
blue bunch wheat grass meadows	*Pseudoroegneria spicata – Poa secunda*	Yes	13	15.3
Baltic rush marshes	*Juncus arcticus* ssp*. balticus*	No	15	46.1

Alliance	Association	Sensitive Natural Community	Map ID	Area (Acres)
A Manual of California Vegetation Alliances and Associations[1]				
reed canary grass swards	*Phalaris arundinacea*	No	18	0.03
hardstem bulrush marshes	*Schoenoplectus acutus*	Yes	30	0.1
American bulrush marsh	*Schoenoplectus americanus*	Yes	31	0.1
needle-and-thread grassland[3]	*Stipa comata*[3]	Yes[3]	32	0.7
tansyleaf evening primrose patch[3]	*Taraxia tanacetifolia – Iva axillaris*[3]	Yes[3]	33	70.3
broadleaf cattail marsh	*Typha latifolia*	No	34	0.3
Other				
agriculture[2]	No Association	No[2]	1	42.7
anthropogenic areas of little or no vegetation[6]	No Association	No[6]	4	1275.5
perennial stream channel (open water)[6]	No Association	No[6]	17	21.3
planted trees and shrubs[6]	No Association	No[6]	20	1.5
Western North American sparsely vegetated rivershore[6]	No Association	No[6]	35	6.7

Notes:
1. A Manual of California Vegetation (CNPS 2019b)
2. Not described in MCV or in Holland. Insufficient data to determine sensitivity.
3. Association not described in the MCV but is presumed sensitive because it is similar to other sensitive associations under the alliance or is dominated by uncommon native species.
4. Association not described in the MCV but is included within an existing alliance in MCV that is designated as sensitive
5. Leymus cinereus is no longer an active name, though it is still used in the MCV. Elymus cinereus is used exclusively to reflect current nomenclature.
6. Not described in MCV and dominated by invasive/non-native species (or barren, urban, or open water).
7. Taeniatherum caput-medusae is no longer an active name, though it is still used in the MCV. *Elymus caput-medusae* is used here to reflect current nomenclature.
ID = identification

4.1.1 Forests and Woodlands

4.1.1.1 Western Juniper Woodland

Western juniper (*Juniperus occidentalis*) woodland alliance occurs throughout the study area and was the most common type of tree-dominated vegetation community observed. This forest community is

dominated by Western juniper, little sagebrush (*Artemisia arbuscula* ssp*. arbuscula*), and big sagebrush *(Artemisia tridentata*), often with perennial grasses and herbaceous species growing in between trees and shrubs. Stantec mapped eight different associations under this alliance type:

- *Juniperus occidentalis / Artemisia arbuscula – Purshia tridentata / Festuca idahoensis*
- *Juniperus occidentalis / Artemisia arbuscula / Poa secunda*
- *Juniperus occidentalis / Artemisia arbuscula / Stipa thurberiana*
- *Juniperus occidentalis / Artemisia tridentata – Purshia tridentata*
- *Juniperus occidentalis – (Pinus jeffreyi – Pinus ponderosa) / Cercocarpus ledifolius*
- *Juniperus occidentalis / Poa secunda – Elymus elymoides*
- *Juniperus occidentalis*
- *Juniperus occidentalis – Pinus jeffreyi / (Purshia tridentata)*

CDFW does not consider any of the associations of Western juniper woodland observed in the study area to be sensitive natural communities.

4.1.1.2 Jeffrey Pine Forest

Jeffrey pine (*Pinus jeffreyi*) forest alliance occurs throughout the study area, though it is relatively uncommon. This forest community is dominated by Jeffrey pine, Western juniper, big sagebrush, and bitterbrush (*Purshia tridentata*). Stantec mapped one association under this alliance type: *Pinus jeffreyi / Purshia tridentata*. CDFW does not consider the Jeffrey pine forest alliance to be a sensitive natural community, although *Pinus jeffreyi / Purshia tridentata* is a sensitive association.

4.1.1.3 Aspen Groves

Aspen (*Populus tremuloides*) groves forest alliance occurs in the northern portion of the study area near the North Fork Pit River. This forest community is dominated by aspen (more than 50% RC), with mountain snowberry (*Symphoricarpos rotundifolius*) common in the shrub layer. Stantec mapped one association under this alliance: *Populus tremuloides / Symphoricarpos rotundifolius*. CDFW considers both the alliance and association to be sensitive natural communities.

4.1.1.4 Black Cottonwood Forest

Black cottonwood (*Populus trichocarpa)* forest alliance occurs in one area near New Pine Creek in the northern portion of the study area. This alliance is dominated by black cottonwood (less than 30% RC). Stantec mapped one association under this alliance: *Populus trichocarpa*. CDFW considers black cottonwood forest to be a sensitive natural community.

4.1.2 Shrublands

4.1.2.1 Little Sagebrush Scrub

Little sagebrush scrub alliance occurs in rocky/shale flats and open rocky ground within the study area. This shrub community is dominated by little sagebrush found generally with bitterbrush, Western juniper, and often with largeflower hawksbeard (*Crepis occidentalis*) and non-native grasses in the herbaceous

layer. Stantec mapped two associations: *Artemisia arbuscula / Bromus tectorum* and *Artemisia arbuscula / Poa secunda.* CDFW considers the *Artemisia arbuscula / Poa secunda* association to be a sensitive natural community.

4.1.2.2 Silver Sagebrush Scrub

Silver sagebrush (*Artemisia cana*) scrub alliance occurs in one mesic area north of Mud Flat. Silver sagebrush is dominant in the shrub layer with big sagebrush, rubber rabbitbrush (*Ericameria nauseosa*, interior rose (*Rosa woodsii*), and greasewood (*Sarcobatus vermiculatus*). The herbaceous layer is sparse and usually grassy. Stantec mapped one association under this alliance: *Artemisia cana / Poa secunda.* CDFW considers silver sagebrush scrub to be a sensitive natural community.

4.1.2.3 Big Sagebrush

Big sagebrush alliance occurs throughout the study area in a variety of topographic settings and was one of the more commonly observed vegetation communities. This shrub community is characterized by big sagebrush and is present in pure stands with grasses and forbs as well as in stands co-dominated with rubber rabbitbrush*)* and bitterbrush. Stantec mapped seven associations under this alliance type:

- *Artemisia tridentata – Ephedra spp.*
- *Artemisia tridentata – Ericameria nauseosa / Bromus tectorum*
- *Artemisia tridentata / Bromus tectorum*
- *Artemisia tridentata / Distichlis spicata*
- *Artemisia tridentata*
- *Artemisia tridentata* ssp. *wyomingensis – Peraphyllum ramosissimum*
- *Artemisia tridentata* ssp. *wyomingensis / Stipa thurberiana – Poa secunda*

CDFW does not consider any of the big sagebrush associations observed in the study area to be sensitive natural communities.

4.1.2.4 Mountain Big Sagebrush

Mountain big sagebrush (*Artemisia tridentata* ssp*. vaseyana*) alliance occurs in foothills and on mountain slopes in shallow, well drained, rocky soils. This shrub community is generally dominated by mountain big sagebrush, bitterbrush, and perennial bunchgrasses. Stantec mapped one association under this alliance: *Artemisia tridentata* ssp. *vaseyana*. CDFW does not consider mountain big sagebrush to be a sensitive natural community.

4.1.2.5 Rubber Rabbitbrush Scrub

Rubber rabbitbrush scrub alliance occurs throughout the study area, found especially in disturbed settings along roadsides in the study area. Rubber rabbitbrush dominates (more than 50% RC) in the shrub layer and generally occurs with yellow rabbitbrush (*Chrysothamnus viscidiflorus*) and Western juniper. Non-native grasses often occur in the herbaceous layer. Stantec mapped two associations under this alliance: *Ericameria nauseosa / Bromus tectorum* and *Ericameria nauseosa*. CDFW does not consider either of the associations observed to be sensitive natural communities.

4.1.2.6 Bitter Cherry Thickets

Bitter cherry (*Prunus emarginata*) thickets alliance occurred in one area at the far northern end of the study area near Goose Lake. This shrub community is dominated by bitter cherry and often found with big sagebrush, yellow rabbitbrush, and rubber rabbitbrush. Stantec mapped one association under this alliance: *Prunus emarginata*. CDFW does not consider bitter cherry thickets to be a sensitive natural community.

4.1.2.7 Klamath Plum Thickets

Klamath plum (*Prunus subcordata*) thickets alliance occurs in one location in the northern portion of the study area near Goose Lake. This shrub community is dominated by Klamath plum, with native grasses such as ashy ryegrass (*Elymus cinereus*) between shrubs. Stantec mapped one association under this alliance: *Prunus subcordata* / *Elymus cinereus*. This alliance is not described in the MCV or Holland and is dominated by native species; therefore, it is considered a CDFW sensitive natural community.

4.1.2.8 Bitterbrush Scrub

Bitterbrush scrub alliance occurs in many topographic settings throughout the study area, primarily in highly permeable and well-drained soils characteristic of sagebrush steppe environments. This shrub community is dominated by bitterbrush (less than 50% RC), big sagebrush, rubber rabbitbrush, and spineless horsebrush (*Tetradymia canescens*). Stantec mapped five associations under this alliance:

- *Purshia tridentata – Artemisia arbuscula*
- *Purshia tridentata – Artemisia tridentata – Tetradymia canescens*
- *Purshia tridentata – Artemisia tridentata / Bromus tectorum*
- *Purshia tridentata – Artemisia tridentata*
- *Purshia tridentata – Prunus subcordata*

CDFW considers bitterbrush scrub to be a sensitive natural community.

4.1.2.9 Interior Rose Thickets

Interior rose thickets alliance occurs along margins of meadows, stream terraces, and many roadside ditches in riparian scrub habitats throughout the study area. This shrub community is characterized by interior rose with silver sagebrush, big sagebrush, golden currant (*Ribes aureum*), wax currant *(Ribes cereum)* and desert snowberry (*Symphoricarpos longiflorus*) co-dominating in the shrub layer. Stantec mapped one association under this alliance: *Rosa woodsii*. CDFW considers interior rose thickets to be a sensitive natural community.

4.1.2.10 Sandbar Willow Thickets

Sandbar willow (*Salix exigua*) thickets alliance occurs often in temporarily flooded shrublands including depositions along rivers and streams. Sandbar willow is dominant (more than 50% RC) or co-dominant in the shrub canopy with Baltic rush (*Juncus arcticus* var*. balticus*), coyote brush (*Baccharis* spp.), Himalayan blackberry (*Rubus armeniacus)*, and other willow species (e.g., *Salix lasiolepis*,

S. melanopsis). Stantec mapped two associations: *Salix exigua* / *Juncus balticus* and *Salix exigua.* CDFW does not consider either of the mapped associations to be sensitive natural communities.

4.1.2.11 Shining Willow Groves

Shining willow (*Salix lucida*) groves alliance occurs on low-gradient depositions along rivers and streams throughout the study area. Shining willow is dominant in the shrub layer. Stantec mapped one association within this alliance: *Salix lucida* ssp*. lasiandra – Rosa woodsii* / Mixed Herbs*.* This association is not included in the MCV, but it is included within an existing association that is designated by the CDFW to be a sensitive natural community.

4.1.2.12 Greasewood Scrub

Greasewood scrub alliance occurs in particularly high concentrations in areas of alkaline soils such as those found in old lakebeds, playas, and intermittently flooded desert sinks within the central portion of the study area. This shrub community is generally dominated by greasewood with yellow rabbitbrush, and contains an understory characterized by grasses such as cheatgrass and bulbous bluegrass (*Poa bulbosa).* Stantec mapped two associations under this alliance: *Sarcobatus vermiculatus – Artemisia tridentata* and *Sarcobatus vermiculatus*. CDFW does not consider greasewood scrub to be a sensitive natural community. The *Sarcobatus vermiculatus – Artemisia tridentata* association is not in the MCV; it is dominated by native species and is therefore considered a CDFW sensitive natural community.

4.1.3 Herbaceous Vegetation

4.1.3.1 Crested Wheatgrass Rangelands

Crested wheatgrass (*Agropyron cristatum*) rangelands alliance occurs in numerous areas in the southern portion of the study area. This herbaceous plant community is dominated by crested wheatgrass, generally making up 10% RC. It is often found with other native plants and sporadic occurrences of big sagebrush. Stantec mapped one association under this alliance: *Agropyron cristatum*. CDFW does not consider crested wheatgrass rangelands to be a sensitive natural community.

4.1.3.2 Meadow Foxtail Meadows

Meadow foxtail (*Alopecurus pratensis*) meadows alliance occurs throughout the northern and central portions of the study area. This plant community is generally dominated by meadow foxtail in the herbaceous layer with low cover by other grasses. Stantec mapped one association under this alliance: *Alopecurus pratensis.* Neither the MCV nor Holland have this alliance, and CDFW does not consider meadow foxtail meadows to be a sensitive natural community because it is an invasive non-native plant.

4.1.3.3 Cheatgrass Grassland

Cheatgrass grassland alliance occurs throughout the study area and is commonly observed in disturbed roadside areas, which is characteristic of most of the study area. Cheatgrass dominates the herbaceous layer (more than 50 % RC) and is often co-dominant with medusahead (*Elymus caput-medusae*) and

other non-natives. Stantec mapped three associations within this alliance: *Bromus tectorum – Agropyron cristatum; Bromus tectorum – Elymus caput-medusae;* and *Bromus tectorum.* CDFW does not consider cheatgrass grassland to be a sensitive natural community.

4.1.3.4 Sheldon's Sedge Patch

Sheldon's sedge (*Carex sheldonii*) patch alliance occurs in one area in the northern portion of the study area. This herbaceous plant community is dominated by Sheldon's sedge and observed with ashy rye grass co-dominating in the herbaceous layer. Stantec mapped one association within this alliance: *Carex sheldonii – Elymus cinereus.* While Sheldon's sedge patch is not currently included in the MCV, the community is presumed to be a CDFW sensitive natural community because Sheldon's sedge is a special status species and ashy ryegrass is considered a sensitive natural community by CDFW.

4.1.3.5 One Spiked Oatgrass Meadows

One spiked oatgrass (*Danthonia unispicata*) meadows alliance occurs in several areas in the central and northern portions of the study area. This herbaceous plant community is dominated by one spiked oatgrass with curly bluegrass (*Poa secunda*) co-dominating in the herb layer. One association was mapped under this alliance: *Danthonia unispicata – Poa secunda.* While one spiked oatgrass is not currently included in the MCV, the community is presumed to be CDFW sensitive natural community because both one spiked oatgrass and curly bluegrass are part of several sensitive associations.

4.1.3.6 Ashy Ryegrass Meadows

Ashy ryegrass alliance occurs throughout the study area. This herbaceous grassy community is dominated by ashy ryegrass and associated with bromes (*Bromus* spp.), creeping ryegrass (*Leymus triticoides*), saltgrass (*Distichlis spicata*), and squirreltail (*Elymus elymoides*). Stantec mapped two associations in the study area: *Elymus cinereus* and *Elymus cinereus – Alopecurus geniculatus*. CDFW considers ashy ryegrass meadows to be a sensitive natural community.

4.1.3.7 Blue Wild Rye Montane Meadows

Blue wild rye (*Elymus glaucus*) montane meadows alliance occurs in the northern portion of the study area, in flat areas often near agriculture. This herbaceous plant community is dominated by blue wild rye (more than 50% RC) with alfalfa (*Medicago sativa*) as a co-dominant. Stantec mapped one association in the study area: *Elymus glaucus – Medicago sativa*. CDFW considers blue wild rye montane meadows to be a sensitive natural community; however, based on the proximity to agriculture and the prevalence of the non-native species alfalfa, this association was determined not to be sensitive.

4.1.3.8 Bluebunch Wheatgrass Grassland

Bluebunch wheatgrass (*Pseudoroegneria spicata*) grassland alliance occurs in the central portion of the study area, in the flats near Horse Lake. Bluebunch wheat grass is dominant in the herbaceous layer (more than 30% RC) and often with ashy ryegrass, needle-and-thread (*Stipa comata*), medusahead, and

squirreltail. Stantec mapped one association in the study area: *Pseudoroegneria spicata – Poa secunda.* CDFW considers bluebunch wheatgrass grassland to be a sensitive natural community.

4.1.3.9 Baltic Rush Marshes

Baltic rush marshes alliance often occurs in wet seeps and drainages adjacent to large grasslands in the study area. This herbaceous plant community is dominated by Baltic rush (more than 50% RC) and may be co-dominant with yarrow (*Achillea millefolium*), spikerushes (*Eleocharis* spp.), and Nebraska sedge (*Carex nebrascensis*). Stantec mapped one association under this alliance: *Juncus arcticus* ssp*. balticus. C*DFW does not consider Baltic rush marshes to be a sensitive natural community.

4.1.3.10 Reed Canary Grass Swards

Reed canary grass (*Phalaris arundinacea*) swards alliance occurs in two areas that are seasonally inundated and adjacent to non-native grasslands. This herbaceous plant community is strongly dominated by reed canary grass and may have low cover of scattered emergent shrubs, including coyote brush and willows. Stantec mapped one association under this alliance: *Phalaris arundinacea.* CDFW does not consider reed canary grass swards to be a sensitive natural community.

4.1.3.11 Hardstem and California Bulrush Marshes

Hardstem bulrush (*Schoenoplectus acutus*) marshes alliance occurs in one area in the southern portion of the study area. This herbaceous community is dominated by hardstem bulrush (more than 50% RC) and often with other bulrushes (*Schoenoplectu*s spp.), rushes (*Juncus* spp.), cattails (*Typha* spp.), and trees present at low cover, including shining willow. Stantec mapped one association under this alliance: *Schoenoplectus acutus*. CDFW considers hardstem bulrush marshes to be a sensitive natural community.

4.1.3.12 American Bulrush Marsh

American bulrush (*Schoenoplectus americanus*) marsh alliance occurs in semi-permanently flooded marshes found in one isolated area in the southern portion of the study area near Valley Creek. American bulrush is generally dominant in the herbaceous layer (more than 50% RC) and often occurs with other bulrushes (e.g., *Schoenoplectus californicus, S. acutus*), broadleaf cattail (*Typha latifolia*), and saltgrass. Stantec mapped one association under this alliance: *Schoenoplectus americanus*. CDFW considers American bulrush marshes to be a sensitive natural community.

4.1.3.13 Needle-and-Thread Grassland

Needle-and-thread grassland alliance occurs in one area in the southern portion of the study area near Valley Creek. This plant community is generally dominated by needle-and-thread in the herbaceous layer with low cover by other grasses. Stantec mapped one association under this alliance: *Stipa comata.* While needle-and-thread grassland is not currently in the MCV, it is presumed to be a sensitive natural community because other similar bunchgrasses are considered sensitive and the species is relatively uncommon.

4.1.3.14 Tansyleaf Evening Primrose Patch

Tansyleaf evening primrose (*Taraxia tanacetifolia*) patch alliance occurs in Mud Flat, a dry alkali lakebed in the central portion of the study area. This herbaceous plant community is dominated by tansyleaf evening primrose and was observed with povertyweed (*Iva axillaris*) co-dominating in the herb layer. Stantec mapped this alliance to the association level: *Taraxia tanacetifolia – Iva axillaris.* While tansyleaf evening primrose is not currently in the MCV, it is presumed to be a sensitive natural community because it is dominated by native species and occurs in vernal pool habitats.

4.1.3.15 Broadleaf Cattail Marsh

Broadleaf cattail marsh alliance occurs in a semi-permanently flooded freshwater marsh adjacent to Secret Creek in the central portion of the study area. This herbaceous plant community is dominated by broadleaf cattail (more than 50% RC) and may be co-dominant in the herbaceous layer with spikerushes, Nebraska sedge, bulrushes, and emergent trees may be present at low cover. Stantec mapped one association under this alliance: *Typha latifolia. C*DFW does not consider broadleaf cattail marshes to be a sensitive natural community.

4.1.4 Other

4.1.4.1 Agriculture

These areas are dominated by agricultural crops for alfalfa and hay production with various grass species. For this assessment, Stantec presumes that agricultural areas are not sensitive natural communities as they are managed lands that do not contain natural plant communities.

4.1.4.2 Anthropogenic Areas of Little or No Vegetation

Stantec developed the anthropogenic areas of little or no vegetation type to delineate areas that are not vegetated due to human activity and use. These areas include roads, road shoulders, structures, and parking areas. For this assessment, Stantec presumes that an anthropogenic area of little or no vegetation is not a sensitive natural community because it is not a natural community.

4.1.4.3 Perennial Stream Channel (open water)

Stantec used the perennial stream channel (open water) type to designate areas of open water that are adjacent to or part of a perennial stream channel. This includes the Pit River, Long Valley Creek, Secret Creek, and other features that contain water throughout the year. For this assessment, Stantec presumes that this is not a sensitive natural community.

4.1.4.4 Planted Trees and Shrubs

Stantec used the planted trees and shrubs type to designate areas of ornamental trees that were planted as part of the local landscaping. These areas include windrows, hedges, and landscaping in rural residential areas. For this assessment, Stantec presumes that this is not a sensitive natural community.

4.1.4.5 Western North American Sparsely Vegetated Rivershore

Stantec used the western North American sparsely vegetated rivershore type to designate areas with little or no vegetation that are adjacent to or part of an intermittent and ephemeral drainage. This includes creek beds, irrigation canals, and other features that do not contain water all year round. For this assessment, Stantec presumes that this is not a sensitive natural community.

4.2 SPECIAL STATUS PLANT SPECIES

Special status plant species that have the potential to occur in the study area based on database searches are included in Appendix A. Stantec did not observe any federally listed or state-listed plant species in the botanical survey area during the botanical surveys. Stantec identified 38 special status plant species in the botanical survey area (Table 4, Figure 4). All mapped observations were grouped into occurrences based on proximity to each other or similar environmental conditions, such as vegetation community, landscape position, or soils type. The number of occurrences for each species is provided in Table 4, while Figure 4 displays each plant occurrence location with a unique identifying label (e.g., ARFU1, ARFU2). Special status plant species with CRPRs 1 or 2 or a BLM Sensitive Species are discussed in Section 4.4, Special Status Species Accounts.

Stantec conducted field surveys in the botanical survey area during time periods when all potentially occurring special status plant species could be identified if they were present. We encountered no adverse conditions (e.g., significant drought, herbivory) that would affect the identification of potential special status plant species. Special status plants observed at reference populations were consistent with previously reported conditions, suggesting that conditions during the survey represent normal conditions for the area. All plants identified in the botanical survey area during the botanical surveys are listed in Appendix B. Representative photographs of all special status plant species identified in the botanical survey area are shown in Appendix C. Stantec completed CNDDB forms documenting all special status plant occurrences identified in the botanical survey area for submittal to CDFW.

4.3 BUREAU OF LAND MANAGEMENT SENSITIVE SPECIES

All plants listed as CRPR 1 are also considered BLM Sensitive Species, as well as any additional species included on the current *BLM California Special Status Plant List* (U.S. Department of Interior 2015). Of the 38 special-status species identified in the botanical survey area, five BLM Sensitive Species were located on BLM lands: ephemeral monkeyflower (*Erythranthe inflatula*), raven's lomatium, adobe lomatium (*Lomatium roseanum*), volcanic beardtongue (*Penstemon sudans*), and wooly stenotus (*Stenotus lanuginosus* var*. lanuginosus*). Each species is described in Section 4.4, Special Status Species Accounts, and the occurrence locations on BLM lands are shown on Figure 5.

Table 4: Special Status Plant Species Identified in the Zayo Umatilla to Reno (California) Fiber Optic Project During the Botanical Survey

Species	Status[1] (Federal/State/CRPR)	Number of Occurrences Identified in the Botanical Survey Area
Special Status Plant Species		
punctate onion (*Allium punctum*)	—/—/2B.2	1
hillside arnica (*Arnica fulgens*)	—/—/2B.2	1
purple loco weed (*Astragalus agrestis*)	BLMS[2]/—/2B.2	5
snake milk-vetch (*Astragalus iodanthus* var. *diaphanoides*)	—/—/4.3	5
Modoc plateau milk vetch (*Astragalus pulsiferae* var. *coronensis*)	—/—/4.2	3
sickle saltbrush (*Atriplex gardneri* var. *falcata*)	—/—/2B.2	3
slough sedge (*Carex atherodes*)	—/—/2B.2	4
Sheldon's sedge (*Carex sheldonii*)	—/—/2B.2	6
cruciform evening-primrose (*Chylismia claviformis* ssp. *cruciformis*)	—/—/2B.3	5
Great Basin calicoflower (*Downingia laeta*)	—/—/2B.2	2
Pine Creek evening-primrose (*Eremothera boothii* ssp. *alyssoides*)	—/—/4.3	5
Nevada daisy (*Erigeron eatonii* var. *nevadincola*)	—/—/2B.3	1
volcanic daisy (*Erigeron elegantulus*)	—/—/4.3	5
hill buckwheat (*Eriogonum collinum*)	—/—/4.3	7
nodding buckwheat (*Eriogonum nutans* var. *nutans*)	—/—/2B.3	1
ephemeral monkeyflower (*Erythranthe inflatula*)	BLMS/—/1B.2	2
Modoc frasera *(Frasera albicaulis* var. *modocensis)*	—/—/2B.3	12

Species	Status[1] (Federal/State/CRPR)	Number of Occurrences Identified in the Botanical Survey Area
Cusick stickweed (*Hackelia cusickii*)	—/—/4.3	6
Lemmon's goldflower (*Hymenoxys lemmonii)*	—/—/2B.2	1
Lance-leaved scurf-pea (*Ladeania lanceolata*)	—/—/2B.3	1
rigid pea (*Lathyrus rigidus*)	—/—/2B.2	9
Canby's lomatium (*Lomatium canbyi*)	—/—/4.3	8
raven's lomatium (*Lomatium ravenii* var*. ravenii)*	BLMS/—/1B.3	10
adobe lomatium (*Lomatium roseanum)*	BLMS/—/1B.2	1
Intermountain lupine (*Lupinus pusillus* var*. intermontanus)*	—/—/2B.3	2
sagebrush bluebells (*Mertensia oblongifolia* var*. oblongifolia*)	—/—/2B.2	2
dwarf lousewort (*Pedicularis centranthera)*	BLMS[2]/—/2B.3	1
volcanic beardtongue (*Penstemon sudans)*	BLMS/—/1B.3	5
Fremont's polyctenium (*Polyctenium fremontii* var*. fremontii*)	—/—/4.3	12
William's combleaf (*Polyctenium williamsiae*)	BLMS[2]/—/1B.2	1
spiny milkwort (*Polygala subspinosa)*	—/—/2B.2	7
winged dock (*Rumex venosus)*	—/—/2B.3	10
prairie woundwort (*Stachys pilosa*)	—/—/2B.3	1
green flowered prince's plume (*Stanleya viridiflora)*	—/—/2B.3	1
woolly stenotus (*Stenotus lanuginosus* var*. lanuginosus*)	BLMS/—/2B.2	2
many-flowered thelypody (*Thelypodium milleflorum*)	—/—/2B.2	1

Species	Status[1] (Federal/State/CRPR)	Number of Occurrences Identified in the Botanical Survey Area
Plummer's clover (*Trifolium gymnocarpon* ssp. *plummerae)*	—/—/2B.3	5
golden violet (*Viola purpurea* ssp. *aurea)*	—/—/2B.2	2

Notes:
1. Federal:
BLMS = Bureau of Land Management Sensitive Species
California Rare Plant Rank Codes and Threat Ranks:
1B Plants rare, threatened, or endangered in California and elsewhere.
2B Plants rare, threatened, or endangered in California, but more common elsewhere.
3 Plants about which more information is needed—a review list.
4 Plants of limited distribution—a watch list.
0.1 Seriously endangered in California
0.2 Fairly endangered in California
0.3 Not very endangered in California
CRPR = California Rare Plant Rank
2. Considered a BLM Sensitive Species, but were not located on BLM lands in the botanical survey area.

4.4 SPECIAL STATUS SPECIES ACCOUNTS

4.4.1 Punctate Onion

Punctate onion is a CRPR 2B.2 species. The species is a perennial bulbiferous herb in the onion family (Alliaceae) that grows in rocky areas of pinyon and juniper woodland. In California it occurs in Modoc County, while outside of California it occurs in Idaho, Nevada and Oregon. Punctate onion generally flowers from April to May and occurs at elevations between 3,900 and 5,200 feet. Punctate onion occurrences were found at one location near Romero Creek alongside US 395 approximately 15 miles south of Alturas.

4.4.2 Hillside Arnica

Hillside arnica (*Arnica fulgens*) is a CRPR 2B.2 species. The species is an herbaceous perennial in the sunflower family (Asteraceae) that grows in meadows and open, damp depressions in sagebrush scrub or grasslands. In California it occurs on the eastern slope of the Sierra Nevada and on the Modoc Plateau, while outside of California it occurs from British Columbia to Colorado. Hillside arnica generally flowers between May and July and occurs at elevations between 5,900 and 8,900 feet. Hillside arnica occurrences were found alongside US 395 about 6 miles north of the community of Madeline.

4.4.3 Purple Loco Weed

Purple loco weed (*Astragalus agrestis*) is a BLM Sensitive Species and a CRPR 2B.2 species. Purple loco weed is an herbaceous perennial in the legume family (Fabaceae) that grows in wetland-riparian and sagebrush scrub vegetation communities. In California it occurs in Mono and Lassen Counties, while its global range includes the Canadian east coast, the Yukon territory, and Asia. Purple loco weed generally

flowers between May and August and occurs at elevations between 5,300 and 7,200 feet. Purple loco weed occurrences were found alongside US 395 just north of Termo and south of Brockman.

4.4.4 Sickle Saltbush

Sickle saltbush (*Atriplex gardneri* var*. falcata*) is a CRPR 2B.2 species. The species is an herbaceous perennial in the goosefoot family (Chenopodiaceae) that grows in open, generally alkaline soils, sagebrush scrub, and chenopod scrub habitats. In California it occurs in Lassen and Modoc Counties, while outside of California it occurs in Washington, Montana, and Wyoming. Sickle saltbush generally flowers from May to August and occurs at elevations between 4,000 and 5,600 feet. Sickle saltbush was observed north of Viewland and east of Karlo alongside US 395.

4.4.5 Slough Sedge

Slough sedge (*Carex atherodes*) is a CRPR 2B.2 species. The species is a perennial graminoid in the sedge family (Cyperaceae) that grows in marshes, seasonally wet meadows, and wetland riparian habitats. In California it occurs in Siskiyou and Modoc Counties, while its global range is in northern Canada, the northeastern United States, and Eurasia. Slough sedge generally flowers from June to August and occurs at elevations between 4,200 and 5,300 feet. Occurrences of slough sedge were found about 5 miles south of the California/Oregon border and just northeast of Bormister, both adjacent to US 395. The two populations of slough sedge total about 5,500 plants.

4.4.6 Sheldon's Sedge

Sheldon's sedge is a CRPR 2B.2 species. The species is a perennial graminoid in the sedge family that grows in wetland riparian habitats in yellow pine forest communities. In California it occurs in Lassen, Plumas, and Placer Counties, while outside of California it occurs in Oregon, Idaho, and Utah. Sheldon's sedge generally flowers from May to August and occurs at elevations between 3,900 and 4,900 feet. Sheldon's sedge occurrences were found about 13 miles north of Viewland, just north of Davis Creek, southwest of Willow Ranch, and about 1.3 miles north of Surprise Station, all alongside US 395. The Sheldon's sedge occurrences observed in the botanical survey area collectively contained about 5,000 plants.

4.4.7 Cruciform Evening-Primrose

Cruciform evening-primrose (*Chylismia claviformis* ssp*. cruciformis*) is a CRPR 2B.3 species. The species is an herbaceous annual in the evening-primrose family (Onagraceace) that occurs in sagebrush scrub. In California it occurs in Lassen and Modoc Counties, while outside of California it occurs to central Oregon, Idaho, and northwestern Nevada. Cruciform evening-primrose generally flowers from March to May and occurs at elevations between 3,900 and 5,300 feet. Cruciform evening-primrose occurrences were found alongside US 395 north of Viewland.

4.4.8 Great Basin Downingia

Great Basin downingia (*Downingia laeta*) is a CRPR 2B.2 species. The species is an herbaceous annual in the bell flower family (Campanulaceae) that occurs in ditches, ponds, streams, vernal pools, wetland riparian, and sagebrush scrub. In California it occurs in Modoc and Lassen Counties, while outside of California it occurs from south-central Canada, Montana, and from Wyoming to Utah. Great Basin downingia generally flowers from May to July and occurs at elevations between 3,900 and 7,200 feet. There was one occurrence of Great Basin downingia observed in the botanical survey area along both sides of a bridge in between Litchfield and Standish on US 395. The observation included an estimated 500 plants.

4.4.9 Nevada Daisy

Nevada daisy (*Erigeron eatonii* var. *nevadincola*) is a CRPR 2B.3 species. The species is a perennial herb in the daisy family (Asteraceae) that occurs in rocky soil in Great Basin scrub, lower montane coniferous forest, and pinyon–juniper woodland. In California it occurs in Lassen, Placer, Plumas, and Sierra Counties, while outside of California it occurs in northern Nevada. Nevada daisy generally flowers from May to July and occurs at elevations between 4,500 and 9,500 feet. Occurrences were found at two locations near the California/Nevada border. All locations were found alongside US 395.

4.4.10 Nodding Buckwheat

Nodding buckwheat (*Eriogonum nutans* var. *nutans*) is a CRPR 2B.3 species. The species is an herbaceous annual in the buckwheat family (Polygonaceae) that occurs in dry, sandy, brushy places. In California it occurs in Mono and Lassen Counties, while outside of California it occurs in Nevada, southeastern Oregon, and western Utah. Nodding buckwheat generally flowers from May to September and occurs at elevations between 3,900 and 7,500 feet. One occurrence was found near the community of Ravendale alongside US 395.

4.4.11 Ephemeral Monkeyflower

Ephemeral monkeyflower is a BLM Sensitive Species and a CRPR 1B.2 species. The species is an herbaceous annual in the lopseed family (Phrymaceae) that occurs among rocks and boulders on moist gravel and in previously flooded areas. In California it occurs in Siskiyou, Shasta, Modoc, and Lassen Counties, while outside of California it occurs to southwestern Idaho. Ephemeral monkeyflower generally flowers from May to August and occurs at elevations between 3,900 and 5,600 feet. Occurrences were found east of Horse Lake alongside US 395.

4.4.12 Modoc Frasera

Modoc frasera (*Frasera albicaulis* var*. modocensis*) is a CRPR 2B.3 species. The species is an herbaceous perennial in the gentian family (Gentianaceae) that occurs in dry, brushy places. In California it occurs in Shasta, Modoc, and Lassen Counties, while outside of California it occurs from Washington and Montana to northwestern Nevada. Modoc frasera generally flowers from May to July and occurs at

elevations between 3,000 and 5,300 feet. Modoc frasera occurrences were found both north and south of *Davis Creek, while other occurrences were located just north of Madeline alongside US 395.*

4.4.13 Lemmon's Goldflower

Lemmon's goldflower (Hymenoxys lemmonii) is a CRPR 2B.2 species. The species is an herbaceous perennial in the sunflower family that grows on roadsides, open areas, meadows, slopes, drainage areas, and stream banks in sagebrush scrub and yellow pine forests. In California it occurs in Siskiyou, Modoc, Lassen, Plumas, and Inyo Counties, while outside of California its range is through southeastern Oregon, southern Idaho, and Utah. Lemmon's goldflower generally flowers from July to August and occurs at elevations between 2,600 and 10,500 feet. One occurrence of Lemmon's goldflower was found 1.5 miles south of Hallelujah junction (US 395 and California State Route 70 junction) and contained 55 plants.

4.4.14 Lance-Leaved Scurf-Pea

Lance-leaved scurf-pea (Ladeania lanceolata) is a CRPR 2B.3 species. The species is a perennial rhizomatous herb in the legume family that grows in sandy, sagebrush scrub. In California it occurs in Lassen and Mono Counties, while outside of California it ranges from Texas as far north as North Dakota and throughout the western United States. Lance-leaved scurf-pea generally flowers from May to July and occurs at elevations from 3,900 and 8,200 feet. Lance-leaved scurf-pea was found at one location near the community of Doyle alongside US 395.

4.4.15 Rigid Pea

Rigid pea (Lathyrus rigidus) is a CRPR 2B.2 species. The species is an herbaceous perennial in the legume family that grows in sagebrush scrub and disturbed areas. In California it occurs in Modoc County, while outside of California it ranges from Oregon and Idaho to Nevada. Rigid pea generally flowers from April to July and occurs at elevations between 2,600 and 3,900 feet. Occurrences of rigid pea were found 7 miles south of Davis Creek and 8 miles north of Davis Creek, alongside US 395. Surveys documented an estimated total of 285 plants.

4.4.16 Raven's Lomatium

Raven's lomatium (Lomatium ravenii var. ravenii) is a CRPR 1B.3 species and a BLM Sensitive Species. The species is an herbaceous perennial in the carrot family that grows in flats, generally alkaline soils, and sagebrush. Its range is only known in the Ravendale, California vicinity and Painters Flat in eastern Lassen County. Raven's lomatium generally flowers from April to June and occurs at elevations between 5,300 and 5,700 feet. Two occurrences of Raven's lomatium totaling approximately 3,200 plants were found about 7 miles north of Viewland near the Ravendale airport, and near Moran, both alongside US 395.

4.4.17 Adobe Lomatium

Adobe lomatium is a BLM Sensitive Species and a CRPR 1B.2 species. The species is an herbaceous perennial in the carrot family. In California it grows in Lassen County, while outside of California it occurs

in Oregon and Nevada. Adobe lomatium generally flowers from June to July and occurs at elevations between 4,800 and 7,400 feet. A single adobe lomatium occurrence totaling approximately 200 plants was found 4 miles south of the community of Likely, alongside US 395.

4.4.18 Intermountain Lupine

Intermountain lupine is a CRPR 2B.3 species. The species is an herbaceous annual in the legume family that grows in open and sandy areas in sagebrush scrub communities. In California it grows in Modoc, Lassen, Mono, and Inyo Counties, while outside of California it occurs in Washington, the central United States, and Arizona. Intermountain lupine generally blooms from May to June and occurs at elevations lower than 5,200 feet. Intermountain lupine occurrences were observed north of Viewland alongside US 395. A total of five individual occurrences were identified during the surveys.

4.4.19 Sagebrush Bluebells

Sagebrush bluebells (*Mertensia oblongifolia* var*. oblongifolia*) is a CRPR 2B.2 species. The species is an herbaceous perennial in the borage family (Boraginaceae) that occurs in open slopes, drier meadows, and generally point places, especially with sagebrush. In California it occurs in Lassen, Modoc, and Sierra Counties, while outside of California it occurs throughout the western United States from California to Wyoming. Sagebrush bluebells generally bloom from April to July and occur at elevations between 3,000 and 7,800 feet. A single occurrence with approximately 30 plants was located about 8 miles north of Alturas on the east side of US 395.

4.4.20 Dwarf Lousewort

Dwarf lousewort (*Pedicularis centranthera*) is a BLM Sensitive Species and a CRPR 2B.3 species. The species is an herbaceous perennial in the broomrape family (Orobanchaceae) that grows in sagebrush scrub and alluvial fans. In California it occurs in Lassen County, while outside of California it ranges from Oregon and Colorado to New Mexico. It generally blooms from April to June and occurs at elevations between 4,300 and 5,000 feet. One occurrence of dwarf lousewort was found north of Viewland alongside US 395 and contained five individuals.

4.4.21 Volcanic Beardtongue

Volcanic beardtongue is a BLM Sensitive Species and a CRPR 1B.3 species. It is a shrub in the plantain family (Plantaginaceae) that grows in open, rocky, igneous soils in sagebrush scrub and yellow-pine and montane forests. In California it occurs in Lassen, Modoc, and Placer Counties, while outside of California it occurs in Nevada. Volcanic beardtongue generally blooms from June to July and occurs at elevations between 3,900 and 7,200 feet. Occurrences of volcanic beardtongue were observed north of Karlo Road/Shinn Ranch Road and contained an estimated 550 plants.

4.4.22 William's Combleaf

William's combleaf (*Polyctenium williamsiae)* is a BLM Sensitive Species and CRPR 1B.2 species. This species is a perennial herb in the mustard family (Brassicaceae) that grows in sandy, volcanic, lake

margins within Great Basin scrub habitat as well as marshes and swamps, pinyon and juniper woodlands, playas, and vernal pools. In California it occurs in Lassen and Mono Counties, while outside of California it occurs in Nevada and Oregon. William's combleaf generally blooms from March to July and occurs at elevations between 4,420 and 8,850 feet. One occurrence was scattered along 1.5 miles alongside US 395 approximately 10 miles north of Lichfield.

4.4.23 Spiny Milkwort

Spiny milkwort (*Polygala subspinosa*) is a CRPR 2B.2 species. The species is an herbaceous perennial in the milkwort family (Polygalaceae) that grows in desert scrub and volcanic mesas. In California it occurs in Lassen, Mono, and Inyo Counties, while outside of California it ranges from Utah, southwestern Colorado, and northwestern New Mexico to northern Arizona. Spiny milkwort generally blooms from May to August and occurs at elevations between 4,400 and 7,500 feet. Four occurrences of spiny milkwort totaling approximately 300 plants were found near Viewland alongside US 395.

4.4.24 Winged Dock

Winged dock (*Rumex venosus*) is a CRPR 2B.3 species. The species is an herbaceous perennial in the buckwheat family (Polygonaceae), that grows is dry, sandy places. In California it only occurs in Lassen County, though its full range is the western United States. Winged dock generally blooms from May to June and occurs at elevations between 3,900 and 5,900 feet. Eight occurrences of winged dock totaling about 13,000 plants were observed alongside US 395 from north of Standish to Hallelujah Junction (US 395 and California State Route 70 Junction).

4.4.25 Hairy Marsh Hedge-Nettle

Hairy marsh hedge-nettle (*Stachys pilosa*) is a CRPR 2B.3 species. The species is a perennial rhizomatous herb in the mint, deadnettle, and sage family (Lamiaceae), that grows in mesic Great Basin scrub and meadows and seeps. In California it occurs in Lasse, Modoc, Plumas, Shasta, Sierra, and Siskiyou Counties, while outside of California it occurs across the United States. Hairy marsh hedge-nettle generally blooms from June to August and occurs at elevations between 3,900 and 5,600 feet. This species occurred at one location 10 miles south of the community of Davis Creek and alongside US 395.

4.4.26 Green-Flowered Prince's Plume

Green-flowered prince's plume (*Stanleya viridiflora*) is a CRPR 2B.3 species. The species is an herbaceous herb in the mustard family (Brassicaceae) that grows in cliffs, shale, clay knolls, steep bluffs, and white ash deposits. In California it occurs in Lassen and Plumas Counties, while outside of California it ranges to Idaho, Montana, Colorado, and Utah. Green-flowered prince's plume generally blooms from May to August and occurs at elevations between 4,300 and 9,000 feet. Green-flowered prince's plume was observed about 6 miles north of Viewland alongside US 395 and contained 25 plants within the botanical survey area.

4.4.27 Woolly Stenotus

Woolly stenotus is BLM Sensitive Species and a CRPR 2B.2 species. The species is an herbaceous perennial in the sunflower family that grows in shallow, rocky soils; sagebrush scrub; juniper woodlands; and dry meadows. In California it occurs in Modoc and Lassen Counties, while outside of California it ranges from Washington and Montana to Nevada. Woolly stenotus generally blooms from May to July and occurs at elevations around 4,900 feet. Three individuals were found about 0.5 mile northeast of Sage Hen alongside US 395.

4.4.28 Many-Flowered Thelypody

Many-flowered thelypody (*Thelypodium milleflorum*) is a CRPR 2B.2 species. The species is a perennial herb in the mustard family (Brassicaceae), that grows in chenopod scrub and sandy, Great Basin scrub. In California it occurs in Lassen, Mono, Modoc, Plumas, and Sierra Counties, while outside of California it ranges across Washington, Oregon, Idaho, Nevada, and Utah. Many-flowered thelypodium generally blooms from April to June and occurs at elevations between 4,000 and 8,200 feet. The species was observed at one location 5 miles east of Litchfield, alongside US 395.

4.4.29 Plummer's Clover

Plummer's clover (*Trifolium gymnocarpon* ssp*. plummerae*) is a CRPR 2B.3 species. The species is an herbaceous perennial in the legume family that grows with sagebrush and juniper. In California it occurs in Lassen and Modoc Counties, while outside of California it ranges to Oregon, Montana, and New Mexico. Plummer’s clover generally blooms from May to June and occurs at elevations between 4,900 and 5,900 feet. Plummer’s clover was observed 4 miles south of the Ravendale Airport and just north of Termo alongside US 395 and contained an estimated 8,500 or more plants.

4.4.30 Golden Violet

Golden violet (*Viola purpurea* ssp*. aurea*) is a CRPR 2B.2 species. The species is an herbaceous perennial in the violet family (Violaceae) that grows in pinyon/juniper woodland, sagebrush, and sandy slopes. In California it occurs in Alpine, Mono, Ventura, and San Bernardino Counties, while outside of California it occurs in western Nevada. Golden violet generally blooms from April to June and occurs at elevations between 3,300 and 7,500 feet. A single occurrence of golden violet with approximately 10 plants was found within the survey area 2 miles northwest of Cold Springs, Nevada, alongside US 395.

4.5 INVASIVE SPECIES

Twenty-three invasive plant species with Cal-IPC ratings of High or a CDFA rating of noxious were located in the botanical survey area: Russian knapweed (*Acroptilon repens*); cheatgrass; musk thistle (*Carduus nutans*); yellow star-thistle (*Centaurea solstitialis*); spotted knapweed (*Centaurea stoebe* ssp*. micranthos*); crossflower (*Chorispora tenella*); bull thistle (*Cirsium vulgare*); field bindweed (*Convolvulus arvensis*); medusahead; leafy spurge (*Euphorbia virgata*); halogeton (*Halogeton glomeratus*); Klamathweed (*Hypericum perforatum*); dyer’s woad (*Isatis tinctoria*); lens-podded hoary cress (*Lepidium*

chalepense); whitetop (*Lepidium draba*); perennial pepperweed *(Lepidium latifolium*); dalmatian toadflax (*Linaria dalmatica* ssp*. dalmatica*); Scotch thistle (*Onopordum acanthium*); Himalayan blackberry; Russian thistle (*Salsola tragus*); Mediterranean sage (*Salvia aethiopis*); salt cedar (*Tamarix ramosissima*); and puncture vine (*Tribulus terrestris*). We observed an additional 29 invasive plant species with Cal-IPC ratings of Moderate, Limited or Watch. All invasive species observed in the botanical survey area and their associated Cal-IPC and CDFA ratings are summarized in Appendix B.

Stantec mapped 14 invasive plant species on BLM lands in the botanical survey area, including a subset of the plants listed above, plus two plants that do not have Cal-IPC or CDFA ratings but were identified by the BLM as invasive plants of concern: curveseed butterwort (*Ranunculus testiculatus*) and North African grass (*Ventenata dubia*). While cheatgrass and medusahead were commonly observed on BLM lands in the botanical survey area, BLM botanists indicated that mapping those two species was not required due to their known prevalence in the region. Invasive weed population locations and associated population details on BLM lands are provided as a separate deliverable in an ArcGIS shapefile format.

5.0 CONCLUSION

Stantec performed vegetation mapping and botanical resource surveys for the Project segment in 2019 and 2020. Stantec mapped 61 vegetation communities in the study area to the alliance or association level in the study area during the vegetation mapping, 22 of which are considered sensitive natural communities. During the botanical resource surveys, Stantec documented 38 special status plant species in the botanical survey area on both private and public land ownerships, including five BLM Sensitive Plant Species on BLM lands. Stantec also mapped 19 invasive plant species on all land ownerships and 14 invasive plant species on BLM lands in the botanical survey area.

Zayo is currently in the planning phases of constructing the proposed Project. This botanical resources report, including associated data, was prepared to support Project planning and environmental review process in accordance with CEQA and NEPA and regulatory agency permit applications/authorizations.

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APPENDICES

Appendix A SPECIAL STATUS PLANT SPECIES WITH THE POTENTIAL TO OCCUR IN THE BOTANICAL SURVEY AREA

Appendix A: Special Status Plant Species with the Potential to Occur in the Study Area

Species	Status[1] (Federal/State/CRPR)	General Habitat Description and Blooming Period	Potential to Occur within Study Area
grass alisma *(Alisma gramineum)*	—/—/2B.2	Marshes and swamps (assorted shallow freshwater). Elevation: 1,300-5,900 feet Blooms: June-August	Potential habitat occurs in the study area; the study area contains freshwater meadows in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
Great Basin onion *(Allium atrorubens* var. *atrorubens)*	—/—/2B.3	Great Basin scrub, pinyon and juniper woodland. Rocky or sandy soil. Elevation: 3,900-7,600 feet Blooms: May-June	Potential habitat occurs in the study area; the study area contains Great Basin scrub and juniper woodland in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
punctate onion (*Allium punctum*)	—/—/2B.2	Rocky flats. Juniper woodland. Elevation: 3,900-5,250 feet Blooms: May-June	Potential habitat occurs in the study area: the study area contains juniper woodland habitat. **This species was detected during the 2019-2020 surveys.**
hillside arnica *(Arnica fulgens)*	—/—/2B.2	Great Basin scrub, lower montane coniferous forest, meadows and seeps. Mesic soils. Elevation: 4,900-8,900 feet Blooms: May-July (August)	Potential habitat occurs in the study area; the study area contains meadows, seeps and Great Basin scrub in the Modoc Bioregion. **This species was detected during the 2019-2020 surveys.**
purple loco weed *(Astragalus agrestis)*	BLMS/—/2B.2	Great Basin scrub, meadows and seeps with vernally mesic soils. Elevation: 5,100-5,400 feet Blooms: April-July (August)	Potential habitat occurs in the study area; the study area contains meadows, seeps and Great Basin scrub in the Modoc Bioregion. **This species was detected during the 2019-2020 surveys.**
silverleaf milk-vetch *(Astragalus argophyllus* var. *argophyllus)*	BLMS/—/2B.2	Alkali sink, wetland riparian; meadows, playas. Heavy alkaline or saline soil. Elevation: 4,200-4,400 feet Blooms: April-August	Potential habitat occurs in the study area; the study area contains meadows and wetland riparian habitats in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
Geyer's milk-vetch *(Astragalus geyeri* var. *geyeri)*	—/—/2B.2	Chenopod scrub and Great Basin scrub with sandy soil. Elevation: 3,800-6,500 feet Blooms: May-August	Potential habitat occurs in the study area; the study area contains Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.

Species	Status[1] (Federal/State/CRPR)	General Habitat Description and Blooming Period	Potential to Occur within Study Area
Susanville milk-vetch *(Astragalus inversus)*	—/—/4.3	Great Basin scrub, lower montane coniferous forest, pinyon and juniper woodland. Often in disturbed areas. Elevation: 2,900-6,100 feet Blooms: May-September	Potential habitat occurs in the study area; the study area contains juniper woodland and Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
snake milk-vetch *(Astragalus iodanthus* var. *diaphanoides)*	—/—/4.3	Chenopod scrub and Great Basin scrub with sandy or clay soil. Elevation: 3,900-4,600 feet Blooms: April-June	Potential habitat occurs in the study area; the study area contains Great Basin scrub in the Modoc Bioregion. **This species was detected during the 2019-2020 surveys.**
Lemmon's milk-vetch *(Astragalus lemmonii)*	BLMS/—/1B.2	Sagebrush scrub, wetland riparian. Moist, alkaline meadows. Elevation: 4,300-9,500 feet Blooms: May-July	Potential habitat occurs in the study area; the study area contains wetland riparian areas and Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
lens-pod milk-vetch *(Astragalus lentiformis)*	BLMS/—/1B.2	Great Basin scrub, lower montane coniferous forest. Volcanic and sandy soils. Elevation: 4,800-6,300 feet Blooms: May-July	Potential habitat occurs in the study area; the study area contains Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
Modoc Bioregion milk-vetch *(Astragalus pulsiferae* var. *coronensis)*	—/—/4.2	Great Basin scrub, lower montane coniferous forest, pinyon and juniper woodland. Sandy, gravelly, and volcanic soil. Elevation: 4,400-6,200 feet Blooms: May-July	Potential habitat occurs in the study area; the study area contains juniper woodland habitats and Great Basin scrub in the Modoc Bioregion. **This species was detected during the 2019-2020 surveys.**
Pulsifer's milk-vetch *(Astragalus pulsiferae* var. *pulsiferae)*	BLMS/—/1B.2	Great Basin scrub, lower montane coniferous forest, pinyon and juniper woodland. Usually granitic, sandy, or rocky soil. Elevation: 4,300-5,900 feet Blooms: May-August (September)	Potential habitat occurs in the study area; the study area contains juniper woodland and Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
Suksdorf's milk-vetch *(Astragalus pulsiferae* var. *suksdorfii)*	BLMS/—/1B.2	Loose, often rocky soil, often with pines. Elevation: 4,300-5,200 feet Blooms: May-July	Potential habitat occurs in the study area: the project contains areas with loose rocky soils in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.

Species	Status[1] (Federal/State/CRPR)	General Habitat Description and Blooming Period	Potential to Occur within Study Area
Hillman's silverscale *(Atriplex argentea* var. *hillmanii)*	—/—/2B.2	Great Basin scrub, meadows and seeps with alkaline soil. Elevation: 3,900-5,600 feet Blooms: June-September	Potential habitat occurs in the study area; the study area contains meadows and Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
sickle saltbush *(Atriplex gardneri* var. *falcata)*	—/—/2B.2	Chenopod scrub and Great Basin scrub. Often with alkaline soil. Elevation: 3,900-5,600 feet Blooms: May-August	Potential habitat occurs in the study area; the study area contains Great Basin scrub in the Modoc Bioregion. **This species was detected during the 2019-2020 surveys.**
serrated balsamroot *(Balsamorhiza serrata)*	—/—/2B.3	Great Basin scrub with rocky soil. Elevation: 4,600-5,800 feet Blooms: May-June	Potential habitat occurs in the study area; the study area contains Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
small-leaved rockcress *(Boechera microphylla)*	—/—/3	Pinyon and juniper woodland with volcanic, granitic, or rocky soil. Elevation: 5,600-10,700 feet Blooms: July	Potential habitat occurs in the study area; the study area contains juniper woodland habitats in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
scalloped moonwort *(Botrychium crenulatum)*	—/—/2B.2	Bogs, fens, lower montane coniferous forest, meadows, seeps, marshes and swamps (freshwater), upper montane coniferous forest. Elevation: 4,200-10,800 feet Blooms: June-September	Potential habitat occurs in the study area; the study area contains meadows and seeps in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
northwestern moonwort *(Botrychium pinnatum)*	—/—/2B.3	Lower montane coniferous forest, meadows and seeps, and upper montane coniferous forest with mesic soil. Elevation: 5,800-6,700 feet Blooms: July-October	Potential habitat occurs in the study area; the study area contains meadows and seeps in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
slough sedge *(Carex atherodes)*	—/—/2B.2	Meadows, seeps, marshes, swamps, and pinyon and juniper woodland with mesic soil. Elevation: 4,300-5,100 feet Blooms: June-August	Potential habitat occurs in the study area; the study area contains meadows, and juniper woodland in the Modoc Bioregion. **This species was detected during the 2019-2020 surveys.**

Species	Status[1] (Federal/State/CRPR)	General Habitat Description and Blooming Period	Potential to Occur within Study Area
mud sedge *(Carex limosa)*	—/—/2B.2	Bogs, fens, lower montane coniferous forest, meadows, seeps, marshes, swamps, and upper montane coniferous forest. Elevation: 3,900-8,900 feet Blooms: June-August	Potential habitat occurs in the study area; the study area contains meadows and seeps in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
Liddon's sedge *(Carex petasata)*	—/—/2B.3	Broad-leafed upland forest, lower montane coniferous forest, meadows and seeps, pinyon and juniper woodland. Elevation: 2,000-10,900 feet Blooms: May-July	Potential habitat occurs in the study area; the study area contains meadows, seeps and juniper woodlands in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
Sheldon's sedge *(Carex sheldonii)*	—/—/2B.2	Lower montane coniferous forest (mesic), marshes and swamps (freshwater), and riparian scrub. Elevation: 3,900-6,600 feet Blooms: May-August	Potential habitat occurs in the study area; the study area contains riparian scrub habitats in the Modoc Bioregion. **This species was detected during the 2019-2020 surveys.**
western valley sedge *(Carex vallicola)*	—/—/2B.3	Great Basin scrub or meadows and seeps with mesic soil. Elevation: 5,000-9,200 feet Blooms: July-August	Potential habitat occurs in the study area; the study area contains meadows, seeps and Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
slender jewelflower *(Caulanthus major* var. *nevadensis)*	—/—/4.3	Pinyon and juniper woodland, often rocky soil. Elevation: 5,600-9,500 feet Blooms: June-September	Potential habitat occurs in the study area; the study area contains juniper woodland habitats in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
large-seeded goosefoot *(Chenopodium simplex)*	—/—/4.3	Lower montane coniferous forest. Openings and disturbed areas. Elevation: 4,600-7,900 feet Blooms: June-October	Potential habitat occurs in the study area; the study area contains openings and disturbed areas in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
cruciform evening-primrose *(Chylismia claviformis* ssp. *cruciformis)*	—/—/2B.3	Chenopod scrub and Great Basin scrub with clay soil. Elevation: 2,000-4,600 feet Blooms: May-July	Potential habitat occurs in the study area; the study area contains Great Basin scrub in the Modoc Bioregion. **This species was detected during the 2019-2020 surveys.**
Great Basin claytonia *(Claytonia umbellate)*	—/—/2B.3	Subalpine coniferous forest (talus). Elevation: 5,600-11,500 feet Blooms: May-August	Potential habitat occurs in the study area; the study areas contains small sections of subalpine coniferous forest in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.

Species	Status[1] (Federal/State/CRPR)	General Habitat Description and Blooming Period	Potential to Occur within Study Area
Hillman's cleomella (*Cleomella hillmanii* var. *hillmanii)*	—/—/2B.2	Chenopod scrub and Great Basin scrub (clay). Elevation: 4,000-4,800 feet Blooms: April-June	Potential habitat occurs in the study area; the study area contains Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
Yakima bird's-beak *(Cordylanthus capitatus)*	—/—/2B.2	Great Basin scrub, lower montane coniferous forest, pinyon and juniper woodland. Elevation: 5,900-7,800 feet Blooms: July-September	Potential habitat occurs in the study area; the study area contains juniper woodlands and Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
fiddleleaf hawksbeard *(Crepis runcinate)*	—/—/2B.2	Mojavean desert scrub, pinyon and juniper woodland. Mesic and alkaline soils. Elevation: 4,100-7,200 feet Blooms: May-August	Potential habitat occurs in the study area; the study area contains juniper woodland habitats in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
gray cryptantha *(Cryptantha scoparia)*	—/—/4.3	Chenopod scrub, Great Basin scrub, pinyon and juniper woodland. Gravelly or clay soils. Elevation: 6,200-9,000 feet Blooms: June-July	Potential habitat occurs in the study area; the study area contains juniper woodlands and Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
mountain lady's-slipper *(Cypripedium montanum)*	BLMS/—/4.2	Broad-leafed upland forest, cismontane woodland, lower montane coniferous forest, north coast coniferous forest. Elevation: 600-7,200 feet Blooms: March-August	Potential habitat occurs in the study area; the study area contains small sections of lower montane coniferous forests in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
Ornate Dalea *(Dalea ornate)*	BLMS/—/2B.1	Northern juniper woodland, open, rocky hillsides. Elevation: 4,600 feet Blooms: June	Potential habitat occurs in the study area; the study area contains juniper woodlands in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
spiked larkspur *(Delphinium stachydeum)*	—/—/2B.3	Great Basin scrub, upper montane coniferous forest (edges). Rocky. Elevation: 4,300-8,500 feet Blooms: June-August	Potential habitat occurs in the study area; the study area contains Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
doublet *(Dimeresia howellii)*	—/—/2B.3	Lower montane coniferous forest, pinyon and juniper woodland. Volcanic and xeric soils. Elevation: 4,400-7,800 feet Blooms: May-September	Potential habitat occurs in the study area; the study area contains juniper woodland habitats in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.

Species	Status[1] (Federal/State/CRPR)	General Habitat Description and Blooming Period	Potential to Occur within Study Area
Cusick's monkeyflower *(Diplacus cusickioides)*	—/—/2B.3	Great Basin scrub, lower montane coniferous forest. Roadsides, gravelly, scree, and volcanic soils. Elevation: 2,000-6,000 feet Blooms: May-August	Potential habitat occurs in the study area; the study area contains Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
Egg Lake monkeyflower *(Diplacus pygmaeus)*	—/—/4.2	Great Basin scrub, lower montane coniferous forest, meadows and seeps, pinyon and juniper woodland. Vernally mesic, stream sides, volcanic and clay soils. Elevation: 1,600-6,000 feet Blooms: May-August	Potential habitat occurs in the study area; the study area contains meadows, seeps and Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
Great Basin downingia *(Downingia laeta)*	—/—/2B.2	Mesic Great Basin scrub, meadows and seeps, marshes and swamps (assorted shallow freshwater), mesic pinyon and juniper woodland, vernal pools. Elevation: 4,000-7,200 feet Blooms: May-July	Potential habitat occurs in the study area; the study area contains meadows, seeps and Great Basin scrub in the Modoc Bioregion. **This species was detected during 2019-2020 surveys.**
Pine Creek evening-primrose *(Eremothera boothii* ssp. *alyssoides)*	—/—/4.3	Great Basin scrub. Sandy, gravelly. Known in study area in lower portion. Elevation: 2,000-5,600 feet Blooms: April-August	Potential habitat occurs in the study area; the study area contains Great Basin scrub in the Modoc Bioregion. **This species was detected during 2019-2020 surveys.**
Nelson's evening-primrose *(Eremothera minor)*	—/—/2B.3	Chenopod scrub, Great Basin scrub (sandy). Elevation: 4,000-4,500 feet Blooms: April-July	Potential habitat occurs in the study area; the study area contains Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
few-flowered eriastrum *(Eriastrum sparsiflorum)*	—/—/4.3	Chaparral, cismontane woodland, great basin scrub, Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodland. Granitic, sandy and usually openings. Elevation: 3,500-5,600 feet Blooms: May-September	Potential habitat occurs in the study area; the study area contains juniper woodland habitats in the Modoc Bioregion. This species was not detected during 2019-2020 surveys.
Nevada daisy *(Erigeron eatonii* var. *nevadincola*	—/—/2B.3	Great Basin scrub, lower montane coniferous forest, pinyon and juniper woodland. Rocky. Elevation: 5,000-9,500 feet Blooms: May-July	Potential habitat occurs in the study area; the study area contains juniper woodland and Great Basin scrub in the Modoc Bioregion. **This species was detected during 2019-2020 surveys.**

Species	Status[1] (Federal/State/CRPR)	General Habitat Description and Blooming Period	Potential to Occur within Study Area
volcanic daisy *(Erigeron elegantulus)*	—/—/4.3	Alpine and boulder rock field, Great Basin scrub, pinyon and juniper woodland, subalpine coniferous forest, and upper montane coniferous forest. Volcanic soils. Elevation: 3,300-8,700 feet Blooms: March-April	Potential habitat occurs in the study area; the study area contains juniper woodland and Great Basin scrub in the Modoc Bioregion. **This species was detected during 2019-2020 surveys.**
Plumas rayless daisy *(Erigeron lassenianus* var. *deficiens)*	BLMS/—/1B.3	Lower montane coniferous forest. Gravelly, sometimes serpentine. Elevation: 4,500-6,500 feet Blooms: June-September	Potential habitat occurs in the study area; the study area contains small sections of lower montane coniferous forest in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
hill buckwheat *(Eriogonum collinum)*	—/—/4.3	Great Basin scrub, pinyon and juniper woodland. Vertisol clay. Elevation: 4,300-5,900 feet Blooms: June-September	Potential habitat occurs in the study area; the study area contains juniper woodland and Great Basin scrub in the Modoc Bioregion. **This species was detected during 2019-2020 surveys.**
parsnip-flowered buckwheat *(Eriogonum heracleoides* var. *heracleoides)*	—/—/4.3	Great Basin scrub, lower montane coniferous forest, pinyon and juniper woodland, upper montane coniferous forest. Often rocky. Elevation: 4,000-9,600 feet Blooms: June-August	Potential habitat occurs in the study area; the study area contains juniper woodland and Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
Schoolcraft's wild buckwheat *(Eriogonum microthecum* var. *schoolcraftii)*	BLMS/—/1B.2	Great Basin scrub, pinyon and juniper woodland. Sandy to rocky soils. Elevation: 4,300-5,700 feet Blooms: July-September	Potential habitat occurs in the study area; the study area contains juniper woodland and Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
Dugway wild buckwheat *(Eriogonum nutans* var. *nutans)*	—/—/2B.3	Chenopod scrub, Great Basin scrub. Sandy or gravelly soils. Elevation: 4,000-9,800 feet Blooms: May-September (October)	Potential habitat occurs in the study area; the study area contains Great Basin scrub in the Modoc Bioregion. **This species was detected during 2019-2020 surveys.**
ochre-flowered buckwheat *(Eriogonum ochrocephalum* var. *ochrocephalum)*	—/—/2B.2	Great Basin scrub, pinyon and juniper woodland. Volcanic or clay soils. Elevation: 3,900-7,900 feet Blooms: May-June	Potential habitat occurs in the study area; the study area contains juniper woodland and Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.

Species	Status[1] (Federal/State/CRPR)	General Habitat Description and Blooming Period	Potential to Occur within Study Area
prostrate buckwheat *(Eriogonum prociduum)*	BLMS/—/1B.2	Great Basin scrub, pinyon and juniper woodland, upper montane coniferous forest. Volcanic soils. Elevation: 4,300-8,900 feet Blooms: May-August	Potential habitat occurs in the study area; the study area contains juniper woodlands and Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
ephemeral monkeyflower *(Erythranthe inflatula)*	BLMS/—/1B.2	Great Basin scrub, lower montane coniferous forest, pinyon and juniper woodland. Gravelly or rocky. Vernally mesic soils. Elevation: 4,100-5,700 feet Blooms: May-August	Potential habitat occurs in the study area; the study area contains juniper woodlands and Great Basin scrub in the Modoc Bioregion. **This species was detected during the 2019-2020 surveys.**
Modoc frasera *(Frasera albicaulis* var. *modocensis)*	—/—/2B.3	Great Basin grassland, sometimes in upper montane coniferous forest. Occurs in openings. Elevation: 3,000-5,700 feet Blooms: May-July	Potential habitat occurs in the study area; the study area contains Great Basin grasslands in the Modoc Bioregion. **This species was detected during the 2019-2020 surveys.**
Warner Mountains bedstraw *(Galium serpenticum* ssp. *warnerense)*	BLMS/—/1B.2	Meadows and seeps, pinyon and juniper woodland, subalpine coniferous forest. Rocky talus. Elevation: 4,800-9,000 feet Blooms: June-July	Potential habitat occurs in the study area; the study area contains meadows, seeps and juniper woodlands in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
Aleppo avens *(Geum aleppicum)*	—/—/2B.2	Great Basin scrub, lower montane coniferous forest, meadows and seeps. Elevation: 1,500-4,900 feet Blooms: June-August	Potential habitat occurs in the study area; the study area contains meadows, seeps and Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
Boggs Lake hedge-hyssop *(Gratiola heterosepala)*	BLMS/SE/1B.2	Marshes and swamps (lake margins), vernal pools, freshwater wetlands and wetland-riparian. Clay. Elevation: 30-7,800 feet Blooms: April-August	Potential habitat occurs in the study area; the study area contains freshwater meadows and wetland riparian habitats in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
amethyst stickseed *(Hackelia amethystine)*	—/—/4.3	Lower montane coniferous forest, meadows and seeps, upper montane coniferous forest. Openings, disturbed areas. Elevation: 4,900-7,600 feet Blooms: June-July (August)	Potential habitat occurs in the study area; the study area contains meadows and seeps in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.

Species	Status[1] (Federal/State/CRPR)	General Habitat Description and Blooming Period	Potential to Occur within Study Area
Cusick's stickseed *(Hackelia cusickii)*	—/—/4.3	Alpine and boulder rock field, pinyon and juniper woodland (rocky loam), subalpine coniferous forest. Elevation: 3,900-6,600 feet Blooms: April-July	Potential habitat occurs in the study area; the study area contains juniper woodland habitats in the Modoc Bioregion. **This species was detected during 2019-2020 surveys.**
water star-grass *(Heteranthera dubia)*	—/—/2B.2	Marshes and swamps (alkaline, still or slow-moving water) in wetland riparian communities. Requires a PH of 7 or higher, usually in slight eutrophic waters. Elevation: 100-4,900 feet Blooms: July-October	Potential habitat occurs in the study area; the study area contains wetland riparian habitats in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
Lemmon's goldflower *(Hymenoxys lemmonii)*	—/—/2B.2	Great Basin scrub, lower montane coniferous forest, meadows and seeps (subalkaline). Elevation: 800-11,100 feet Blooms: June-August (September)	Potential habitat occurs in the study area; the study area contains meadows, seeps and Great Basin scrub in the Modoc Bioregion. **This species was detected during the 2019-2020 surveys.**
Baker's globe mallow *(Iliamna bakeri)*	—/—/4.2	Chaparral, Great Basin scrub, lower montane coniferous forest (openings), pinyon and juniper woodland. Elevation: 3,300-8,200 feet Blooms: June-September	Potential habitat occurs in the study area; the study area contains juniper woodlands and Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
Bailey's ivesia *(Ivesia baileyi* var. *baileyi)*	—/—/2B.3	Great Basin scrub, lower montane coniferous forest. Volcanic and rocky soils. Elevation: 4,400-8,500 feet Blooms: May-August	Potential habitat occurs in the study area; the study area contains Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
Sierra Valley Ivesia *(Ivesia aperta* var*. aperta)*	BLMS/—/1B.2	Sagebrush scrub, yellow pine forest, northern juniper woodland. Dry, rocky meadows, and generally volcanic soils. Elevation: 4,900-7,500 feet Blooms: June-August	Potential habitat occurs in the study area; the study area contains sagebrush scrub and juniper woodland in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
Ash Creek ivesia *(Ivesia paniculate)*	BLMS/—/1B.2	Great Basin scrub, pinyon and juniper woodland, upper montane coniferous forest. Volcanic, rocky, or gravelly soils. Elevation: 4,900-6,400 feet Blooms: May-August	Potential habitat occurs in the study area; the study area contains juniper woodland and Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.

Species	Status[1] (Federal/State/CRPR)	General Habitat Description and Blooming Period	Potential to Occur within Study Area
Plumas ivesia *(Ivesia sericoleuca)*	BLMS/—/1B.2	Great Basin scrub, lower montane coniferous forest, meadows, seeps, and vernal pools. Vernally mesic and usually volcanic soils. Elevation: 4,300-7,200 feet Blooms: May-October	Potential habitat occurs in the study area; the study area contains meadows, seeps and Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
Webber's ivesia *(Ivesia webberi)*	FT/—/1B.1	Great Basin scrub (volcanic ash), lower montane coniferous forest, pinyon and juniper woodland. Sandy or gravelly. Elevation: 3,300-6,800 feet Blooms: May-July	Potential habitat occurs in the study area; the study area contains juniper woodland and Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
Center Basin rush *(Juncus hemiendytus* var. *abjectus)*	—/—/4.3	Subalpine forest, wetland-riparian and damp open areas. Elevation: 4,500-11,200 feet Blooms: May-June	Potential habitat occurs in the study area; the study area contains wetland riparian habitats in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
Santa Lucia dwarf rush (*Juncus luciensis)*	BLMS/—/1B.2	Chaparral, Great Basin scrub, lower montane coniferous forest, meadows, seeps, and vernal pools. Elevation: 1,000-6,700 feet Blooms: April-July	Potential habitat occurs in the study area; the study area contains meadows, seeps and Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
lance-leaved surf-pea *(Ladeania lanceolate)*	—/—/2B.3	Great Basin scrub (sandy). Elevation: 4,000-8,200 feet Blooms: April-August	Potential habitat occurs in the study area; the study area contains Great Basin scrub in the Modoc Bioregion. **This species was detected during 2019-2020 surveys**.
rigid pea *(Lathyrus rigidus)*	—/—/2B.2	Great Basin scrub, pinyon and juniper woodland. Often disturbed areas. Elevation: 2,600-5,700 feet Blooms: April-July	Potential habitat occurs in the study area; the study area contains juniper woodlands and Great Basin scrub in the Modoc Bioregion. **This species was detected during 2019-2020 surveys.**
sagebrush loeflingia *(Loeflingia squarrosa* var. *artemisiarum)*	BLMS/—/2B.2	Desert dunes, Great Basin scrub, Sonoran Desert scrub. Sandy soils. Elevation: 2,300-5,300 feet Blooms: April-May	Potential habitat occurs in the study area; the study area contains Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
Canby's lomatium *(Lomatium canbyi)*	—/—/4.3	Great Basin scrub, pinyon and juniper woodland. Elevation: 4,300-6,800 feet Blooms: April-June	Potential habitat occurs in the study area; the study area contains juniper woodland and Great Basin scrub in the Modoc Bioregion. **This species was detected during 2019-2020 surveys.**

Species	Status[1] (Federal/State/CRPR)	General Habitat Description and Blooming Period	Potential to Occur within Study Area
Macdougal's lomatium *(Lomatium foeniculaceum* ssp. *macdougalii)*	—/—/2B.2	Chenopod scrub, Great Basin scrub, lower montane coniferous forest, pinyon and juniper woodland. Volcanic soils. Elevation: 4,000-6,800 feet Blooms: April-July	Potential habitat occurs in the study area; the study area contains juniper woodlands and Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
Henderson's biscuitroot (*Lomatium hendersonii)*	—/—/2B.3	Great Basin scrub, lower montane coniferous forest, pinyon and juniper woodland. Rocky and clay soils. Elevation: 5,000-8,000 feet Blooms: March-June	Potential habitat occurs in the study area; the study area contains juniper woodlands and Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
Paiute lomatium (*Lomatium ravenii* var. *paiutense)*	—/—/2B.3	Great Basin scrub. Rocky, gravelly, and volcanic with underlying clay soils. Elevation: 2,900-5,5002 feet Blooms: April-June	Potential habitat occurs in the study area; the study area contains Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
Raven's lomatium (*Lomatium ravenii* var. *ravenii)*	BLMS/—/1B.3	Great Basin scrub. Adobe, clay loam, and alkaline soils. Elevation: 5,300-5,900 feet Blooms: April-June	Potential habitat occurs in the study area; the study area contains Great Basin scrub in the Modoc Bioregion. **This species was detected during the 2019-2020 surveys.**
adobe lomatium (*Lomatium roseanum)*	BLMS/—/1B.2	Great Basin scrub, lower montane coniferous forest. Openings, gravelly or rocky soils. Elevation: 4,800-7,400 feet Blooms: May-July	Potential habitat occurs in the study area; the study area contains Great Basin scrub in the Modoc Bioregion. **This species was detected during the 2019-2020 surveys.**
hair tuft lupine (*Lupinus latifolius* var. *barbatus)*	—/—/3.2	Upper montane coniferous forest, wetland-riparian (mesic). Elevation: 4,900-8,200 feet Blooms: June-July	Potential habitat occurs in the study area; the study area contains wetland riparian habitats in the Modoc bioregion. This species was not detected during the 2019-2020 surveys.
Nevada lupine (*Lupinus nevadensis)*	—/—/4.3	Great Basin scrub, pinyon and juniper woodland. Elevation: 3,300-9,800 feet Blooms: April-June	Potential habitat occurs in the study area; the study area contains juniper woodlands and Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
Intermountain lupine (*Lupinus pusillus* var. *intermontanus)*	—/—/2B.3	Great Basin scrub (sandy). Elevation: 4,000-6,800 feet Blooms: May-June	Potential habitat occurs in the study area; the study area contains Great Basin scrub in the Modoc Bioregion. **This species was detected during the 2019-2020 surveys.**

Species	Status[1] (Federal/State/CRPR)	General Habitat Description and Blooming Period	Potential to Occur within Study Area
Lilliput lupine (*Lupinus uncialis)*	BLMS/—/2B.2	Great Basin scrub, pinyon and juniper woodland. Volcanic and gravelly soils. Elevation: 4,300-5,200 feet Blooms: May-July	Potential habitat occurs in the study area; the study area contains juniper woodlands and Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
long bluebells (*Mertensia longiflora)*	—/—/2B.2	Great Basin scrub, lower montane and coniferous forest. Elevation: 5,000-7,200 feet Blooms: April-June	Potential habitat occurs in the study area; the study area contains Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
beautiful sagebrush bluebells (*Mertensia oblongifolia* var. *amoena)*	—/—/2B.2	Great Basin scrub, meadows and seeps. Elevation: 5,300-7,600 feet Blooms: April-July	Potential habitat occurs in the study area; the study area contains meadows, seeps and Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
sagebrush bluebells (*Mertensia oblongifolia* var. *oblongifolia)*	—/—/2B.2	Great Basin scrub, lower montane coniferous forest, subalpine coniferous forest, meadows and seeps. Usually mesic soils. Elevation: 3,300-9,800 feet Blooms: April-July	Potential habitat occurs in the study area; the study area contains meadows, seeps and Great Basin scrub in the Modoc Bioregion. **This species was detected during the 2019-2020 surveys.**
dwarf monolepis (*Micromonolepis pusilla)*	—/—/2B.3	Great Basin scrub. Alkaline, openings. Elevation: 4,900-7,900 feet Blooms: May-August	Potential habitat occurs in the study area; the study area contains Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
Great Basin nemophila (*Nemophila breviflora)*	—/—/2B.3	Great Basin scrub, upper montane coniferous forest, meadows and seeps. Mesic soils. Elevation: 4,000-7,900 feet Blooms: May-July	Potential habitat occurs in the study area; the study area contains meadows, seeps and Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
slender Orcutt grass (*Orcuttia tenuis)*	FT/SE/1B.1	Vernal pools. Often gravelly soils. Elevation: 100-1,800 feet Blooms: May-September (October)	Potential habitat occurs in the study area; the study area contains gravelly soils in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
tall alpine aster (*Oreostemma elatum)*	BLMS/—/1B.2	Peatlands, marshy areas, wet meadows, and montane forest. Elevation: 3,300-4,900 feet Blooms: July-August	Potential habitat occurs in the study area; the study area contains meadows in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.

Species	Status[1] (Federal/State/CRPR)	General Habitat Description and Blooming Period	Potential to Occur within Study Area
Suksdorf's broom-rape (*Orobanche ludoviciana* var. *arenosa)*	—/—/2B.3	Great Basin scrub. Elevation: 6,500-6,800 feet Blooms: June-September (October)	Potential habitat occurs in the study area; the study area contains Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
blunt-fruited sweet-cicely (*Osmorhiza depauperate)*	—/—/2B.3	Lower montane coniferous forest. Elevation: 6,000-6,100 feet Blooms: May-July	Potential habitat occurs in the study area; the study area contains small sections of lower montane coniferous forest in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
dwarf lousewort (*Pedicularis centranthera)*	BLMS/—/2B.3	Great Basin scrub (alluvial). Elevation: 4,300-4,900 feet Blooms: April-June	Potential habitat occurs in the study area; the study area contains Great Basin scrub in the Modoc Bioregion. **This species was detected during the 2019-2020 surveys.**
ashy-gray beardtongue (*Penstemon cinereus)*	—/—/4.3	Great Basin scrub, pinyon and juniper woodland. Volcanic and gravelly soils. Elevation: 3,500-6,400 feet Blooms: May-July (August)	Potential habitat occurs in the study area; the study area contains juniper woodlands and Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
Janish's beardtongue (*Penstemon janishiae)*	BLMS/—/2B.2	Great Basin scrub, lower montane coniferous forest, pinyon and juniper woodland. Gravelly and volcanic soils. Elevation: 3,500-7,700 feet Blooms: May-July	Potential habitat occurs in the study area; the study area contains juniper woodlands and Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
volcanic beardtongue (*Penstemon sudans)*	BLMS/—/1B.2	Great Basin scrub, lower montane coniferous forest (openings), pinyon and juniper woodland. Volcanic, rocky, and sometimes roadside soils. Elevation: 4,000-8,000 feet Blooms: June-July (August-September)	Potential habitat occurs in the study area; the study area contains juniper woodlands and Great Basin scrub in the Modoc Bioregion. **This species was detected during the 2019-2020 surveys.**
naked-stemmed phacelia (*Phacelia gymnoclada)*	—/—/2B.3	Chenopod scrub, Great Basin scrub, pinyon and juniper woodland. Gravelly or clay soils. Elevation: 4,000-8,200 feet Blooms: April-June (August)	Potential habitat occurs in the study area; the study area contains juniper woodlands and Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.

Species	Status[1] (Federal/State/CRPR)	General Habitat Description and Blooming Period	Potential to Occur within Study Area
playa phacelia *(Phacelia inundata)*	BLMS/—/1B.3	Great Basin scrub, lower montane coniferous forest, and playas. Alkaline soils. Elevation: 4,400-6,600 feet Blooms: May-August (September)	Potential habitat occurs in the study area; the study area contains Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
blue alpine phacelia (*Phacelia sericea* var. *ciliosa)*	—/—/2B.3	Great Basin scrub and upper montane coniferous forest. Rocky soils. Elevation: 6,900-8,900 feet Blooms: June-August	Potential habitat occurs in the study area; the study area contains Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
squarestem phlox (*Phlox muscoides)*	—/—/2B.3	Alpine boulder, rock field, Great Basin scrub, subalpine coniferous forest. Gravelly or rocky soils. Elevation: 4,200-8,900 feet Blooms: (May) June-August	Potential habitat occurs in the study area; the study area contains Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
profuse-flowered pogogyne (*Pogogyne floribunda)*	—/—/4.2	Meadows, seeps, and vernal pools. Heavy clay soils. Elevation: 3,100-5,700 feet Blooms: May-September (October)	Potential habitat occurs in the study area; the study area contains meadows and seeps in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
Fremont's polyctenium (*Polyctenium fremontii* var. *fremontii)*	—/—/4.3	Sagebrush Scrub, wetland-riparian. Saline soils, vernal pool edges, lake margins, meadows, swales, mud flats, dry streambeds and gravel bars. Elevation: 3,300-8,200 feet Blooms: May-July	Potential habitat occurs in the study area; the study area contains meadows, seeps, sagebrush scrub and wetland riparian habitats in the Modoc Bioregion. **This species was detected during the 2019-2020 surveys.**
Williams's combleaf *(Polyctenium williamsiae)*	BLMS/—/1B.2	Great Basin scrub, marshes, swamps, pinyon and juniper woodland, playas, and vernal pools. Sandy, volcanic, and lake margins. Elevation: 4,400-8,900 feet Blooms: March-July	Potential habitat occurs in the study area; the study area contains juniper woodlands and Great Basin scrub in the Modoc Bioregion. **This species was detected during the 2019-2020 surveys.**
spiny milkwort *(Polygala subspinosa)*	—/—/2B.2	Great Basin scrub, pinyon and juniper woodland. Gravelly and rocky soils. Elevation: 4,400-5,600 feet Blooms: May-August	Potential habitat occurs in the study area; the study area contains juniper woodlands and Great Basin scrub in the Modoc Bioregion. **This species was detected during the 2019-2020 surveys.**

Species	Status[1] (Federal/State/CRPR)	General Habitat Description and Blooming Period	Potential to Occur within Study Area
Modoc County knotweed *(Polygonum polygaloides* ssp. *esotericum)*	BLMS/—/1B.3	Great Basin scrub, lower montane coniferous forest, meadows, seeps, and vernal pools. Mesic soils. Elevation: 1,700-2,900 feet Blooms: May-September	Potential habitat occurs in the study area; the study area contains meadows, seeps and Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
Nuttall's ribbon-leaved pondweed *(Potamogeton epihydrus)*	—/—/2B.2	Marshes and swamps (assorted shallow freshwater). Elevation: 1,200-7,100 feet Blooms: (June) July-September	Potential habitat occurs in the study area; the study area contains freshwater meadows in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
eel-grass pondweed *(Potamogeton zosteriformis)*	—/—/2B.2	Marshes and swamps (assorted freshwater). Elevation: 0-6,100 feet Blooms: June-July	Potential habitat occurs in the study area; the study area contains freshwater meadows in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
Newberry's cinquefoil *(Potentilla newberryi)*	—/—/2B.3	Marshes and swamps (drying margins), vernal pools, and wetland riparian habitats. Elevation: 4,300-7,200 feet Blooms: May-August	Potential habitat occurs in the study area; the study area contains freshwater meadows in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
sticky pyrrocoma *(Pyrrocoma lucida)*	BLMS/—/1B.2	Great Basin scrub, lower montane coniferous forest, meadows and seeps. Alkaline clay soils. Elevation: 2,300-6,400 feet Blooms: July-October	Potential habitat occurs in the study area; the study area contains meadows, seeps and Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
Macoun's buttercup *(Ranunculus macounii)*	—/—/2B.2	Great Basin scrub, meadows and seeps, pinyon and juniper woodland. Mesic soils. Elevation: 4,600-5,900 feet Blooms: June-July	Potential habitat occurs in the study area; the study area contains juniper woodlands, meadows, seeps and Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
alder buckthorn *(Rhamnus alnifolia)*	—/—/2B.2	Lower montane coniferous forest, meadows, seeps, riparian scrub, and upper montane coniferous forest. Elevation: 4,500-7,000 feet Blooms: May-July	Potential habitat occurs in the study area; the study area contains meadows, seeps and Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
Columbia yellow cress *(Rorippa columbiae)*	BLMS/—/1B.2	Lower montane coniferous forest, meadows, seeps, playas, vernal pools, and mesic soils. Elevation: 3,900-5,900 feet Blooms: May-September	Potential habitat occurs in the study area; the study area contains meadows and seeps in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.

Species	Status[1] (Federal/State/CRPR)	General Habitat Description and Blooming Period	Potential to Occur within Study Area
winged dock *(Rumex venosus)*	—/—/2B.3	Great Basin scrub (sandy). Elevation: 3,900-5,900 feet Blooms: May-June	Potential habitat occurs in the study area; the study area contains Great Basin scrub in the Modoc Bioregion. **This species was detected during the 2019-2020 surveys.**
Bailey's greasewood *(Sarcobatus baileyi)*	—/—/2B.3	Chenopod scrub. Alkaline, dry lakes, washes and roadside soils. Elevation: 4,900-5,200 feet Blooms: April-July	Potential habitat occurs in the study area; the study area contains roadsides in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
marsh skullcap *(Scutellaria galericulata)*	—/—/2B.2	Lower montane coniferous forest, meadows, seeps (mesic), marshes and swamps. Elevation: 0-6,900 feet Blooms: June-September	Potential habitat occurs in the study area; the study area contains meadows and seeps in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
Holmgren's skullcap *(Scutellaria holmgreniorum)*	—/—/3.3	Great Basin scrub, pinyon and juniper woodland. Volcanic and clay soils. Elevation: 4,300-5,700 feet Blooms: May-July	Potential habitat occurs in the study area; the study area contains juniper woodlands and Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
sweet marsh ragwort *(Senecio hydrophiloides)*	—/—/4.2	Lower montane coniferous forest, meadows and seeps. Mesic soils. Elevation: 0-9,200 feet Blooms: May-August	Potential habitat occurs in the study area; the study area contains meadows and seeps in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
Oregon campion *(Silene oregana)*	—/—/2B.2	Great Basin scrub, subalpine coniferous forest. Elevation: 4,900-8,200 feet Blooms: July-September	Potential habitat occurs in the study area; the study area contains Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
currant-leaved desert mallow *(Sphaeralcea grossulariifolia)*	—/—/2B.3	Chenopod scrub and Great Basin scrub. Volcanic soils. Elevation: 3,900-6,900 feet Blooms: May-October	Potential habitat occurs in the study area; the study area contains Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
hairy marsh hedge-nettle *(Stachys pilosa)*	—/—/2B.3	Great Basin scrub (mesic), meadows and seeps. Elevation: 3,900-5,800 feet Blooms: June-August	Potential habitat occurs in the study area; the study area contains meadows, seeps and Great Basin scrub in the Modoc Bioregion. **This species was detected during the 2019-2020 surveys**.

Species	Status[1] (Federal/State/CRPR)	General Habitat Description and Blooming Period	Potential to Occur within Study Area
green-flowered prince's plume *(Stanleya viridiflora)*	—/—/2B.3	Great Basin scrub (white ash deposits). Elevation: 4,300-5,200 feet Blooms: May-August	Potential habitat occurs in the study area; the study area contains Great Basin scrub in the Modoc Bioregion. **This species was detected during the 2019-2020 surveys.**
woolly stenotus *(Stenotus lanuginosus* var. *lanuginosus)*	BLMS/—/2B.2	Great Basin scrub, meadows and seeps, pinyon and juniper woodland. Gravelly loam. Elevation: 4,900-6,300 feet Blooms: May-July	Potential habitat occurs in the study area; the study area contains juniper woodlands, meadows, seeps and Great Basin scrub in the Modoc Bioregion. **This species was detected during the 2019-2020 surveys.**
Little ricegrass *(Stipa exigua)*	BLMS/—/2B.3	Rocky slopes in sagebrush scrub. Elevation: 5,900-7,900 feet Blooms: June	Potential habitat occurs in the study area; the study area contains sagebrush scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
slender-leaved pondweed *(Stuckenia filiformis* ssp. *alpine)*	—/—/2B.2	Marshes and swamps (assorted shallow freshwater). Elevation: 1,000-7,000 feet Blooms: May-July	Potential habitat occurs in the study area; the study area contains marsh habitat in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
western seablite *(Suaeda occidentalis)*	—/—/2B.3	Great Basin scrub (alkaline, mesic). Elevation: 4,000-4,900 feet Blooms: July-September	Potential habitat occurs in the study area; the study area contains Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
kitten-tails *(Synthyris missurica* ssp. *missurica)*	—/—/2B.3	Lower montane coniferous forest, subalpine coniferous forest, and upper montane coniferous forest. Elevation: 6,600-8,400 feet Blooms: (May) June-July (August)	Potential habitat occurs in the study area; the study area contains small sections of lower montane coniferous forest in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
Howell's thelypodium *(Thelypodium howellii* ssp. *howellii)*	BLMS/—/1B.2	Great Basin scrub, meadows and seeps (alkaline). Elevation: 3,900-6,000 feet Blooms: May-July	Potential habitat occurs in the study area; the study area contains meadows, seeps and Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
many-flowered thelypodium *(Thelypodium milleflorum)*	—/—/2B.2	Chenopod scrub, Great Basin scrub (sandy). Elevation: 4,000-8,200 feet Blooms: April-June	Potential habitat occurs in the study area; the study area contains Great Basin scrub in the Modoc Bioregion. **This species was detected during the 2019-2020 surveys.**

Species	Status[1] (Federal/State/CRPR)	General Habitat Description and Blooming Period	Potential to Occur within Study Area
Anderson's clover *(Trifolium andersonii* ssp. *andersonii)*	—/—/4.3	Great Basin scrub, lower montane coniferous forest, meadows and seeps, pinyon and juniper woodland. Vernally mesic, stream sides, volcanic and clay soils. Elevation: 3,000-8,000 feet Blooms: June-July	Potential habitat occurs in the study area; the study area contains juniper woodlands, meadows, seeps and Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
Plummer's clover *(Trifolium gymnocarpon* ssp. *plummerae)*	—/—/2B.3	Great Basin scrub, pinyon and juniper woodland. Elevation: 4,900-6,300 feet Blooms: May-June	Potential habitat occurs in the study area; the study area contains juniper woodlands and Great Basin scrub in the Modoc Bioregion. **This species was detected during the 2019-2020 surveys.**
Lemmon's clover *(Trifolium lemmonii)*	—/—/4.2	Great Basin scrub and lower montane coniferous forest. Elevation: 4,900-6,000 feet Blooms: May-July	Potential habitat occurs in the study area; the study area contains Great Basin scrub in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
western valerian *(Valeriana occidentalis)*	—/—/2B.3	Lower montane coniferous forest (mesic). Elevation: 4,900-5,900 feet Blooms: June-August	Potential habitat occurs in the study area; the study area contains small sections of lower montane coniferous forest in the Modoc Bioregion. This species was not detected during the 2019-2020 surveys.
golden violet *(Viola purpurea* ssp. *aurea)*	—/—/2B.2	Great Basin scrub, pinyon and juniper woodland. Sandy soils. Elevation: 3,300-8,200 feet Blooms: April-Jun	Potential habitat occurs in the study area; the study area contains juniper woodlands and Great Basin scrub in the Modoc Bioregion. **This species was detected during the 2019-2020 surveys.**

Notes:
1. Federal: FT = Federally Threatened; BLMS = Bureau of Land Management Sensitive.
State**:** SE = State Endangered.
California Rare Plant Rank (CRPR) Codes and Extensions:
1B = Plants rare, threatened, or endangered in California and elsewhere.
2B = Plants rare, threatened, or endangered in California but more common elsewhere
3 = Review list: Plants about which more information is needed
4 = Plants of limited distribution—a watch list.
XX.1 Seriously threatened in California
XX.2 Moderately threatened in California
xx.3. Not very endangered in California

Appendix B PLANT SPECIES OBSERVED IN THE BOTANICAL SURVEY AREA

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APPENDIX B
PLANTS OBSERVED DURING THE 2019/2020 ZAYO BOTANICAL SURVEYS

Scientific Name	Common Name	Origin	Family	Federal/ CRPR[1]	Cal-IPC/CDFA[2]
Acer negundo	boxelder	native	Sapindaceae	—/—	-
Achillea millefolium	yarrow	native	Asteraceae	—/—	-
Acmispon americanus var. *americanus*	Spanish lotus	native	Fabaceae	—/—	-
Acroptilon repens	Russian knapweed	non-native (invasive)	Asteraceae	—/—	Moderate/ Noxious
Adonis aestivalis	summer pheasant's eye	non-native	Ranunculaceae	—/—	-
Agastache parvifolia	small leaved horsemint	native	Lamiaceae	—/—	-
Agastache urticifolia	horse mint	native	Lamiaceae	—/—	-
Agoseris ×elata	tall agoseris	native	Asteraceae	—/—	-
Agoseris glauca var. *glauca*	short beaked agoseris	native	Asteraceae	—/—	-
Agoseris grandiflora	giant mountain dandelion	native	Asteraceae	—/—	-
Agoseris heterophylla	mountain dandelion	native	Asteraceae	—/—	-
Agoseris heterophylla var. *heterophylla*	annual agoseris	native	Asteraceae	—/—	-
Agoseris retrorsa	spear leaved agoseris	native	Asteraceae	—/—	-
Agoseris parviflora	false dandelion	native	Asteraceae	—/—	-
Agropyron cristatum ssp. *pectinatum*	crested wheatgrass	non-native	Poaceae	—/—	-
Agrostis stolonifera	redtop	non-native	Poaceae	—/—	Limited
Aliciella leptomeria	sand aliciella	native	Polemoniaceae	—/—	-
Aliciella micromeria	dainty gilia	native	Polemoniaceae	—/—	-
Alisma triviale	northern water plantain	native	Alismataceae	—/—	-
Allium acuminatum	taper tipped onion	native	Alliaceae	—/—	-
Allium amplectens	narrow leaved onion	native	Alliaceae	—/—	-
Allium anceps	twin leaved onion	native	Alliaceae	—/—	-
Allium bisceptrum	twincrest onion	native	Alliaceae	—/—	-
Allium lemmonii	Lemmon’s onion	native	Alliaceae	—/—	-

Scientific Name	Common Name	Origin	Family	Federal/ CRPR[1]	Cal-IPC/CDFA[2]
Allium parvum	dwarf onion	native	Alliaceae	—/—	-
Allium platycaule	broad stemmed onion	native	Alliaceae	—/—	-
Allium punctum	Punctate onion	native	Alliaceae	—/2B.2	-
Alnus rhombifolia	white alder	native	Betulaceae	—/—	-
Alopecurus pratensis	meadow foxtail	non-native	Poaceae	—/—	Watch
Alopecurus sp.	-	-	Poaceae	—/—	-
Alyssum alyssoides	sweet alyssum	non-native	Brassicaceae	—/—	-
Alyssum desertorum	desert alyssum	non-native	Brassicaceae	—/—	-
Alyssum simplex	alyssum	non-native	Brassicaceae	—/—	-
Amaranthus albus	tumbleweed	non-native	Amaranthaceae	—/—	-
Amaranthus californicus	California amaranth	native	Amaranthaceae	—/—	-
Amaranthus powellii	Powell’s amaranth	native	Amaranthaceae	—/—	-
Ambrosia acanthicarpa	annual burrweed	native	Asteraceae	—/—	-
Amelanchier alnifolia	service berry	native	Rosaceae	—/—	-
Amelanchier utahensis	pale leaved serviceberry	native	Rosaceae	—/—	-
Amsinckia menziesii	fiddleneck	native	Boraginaceae	—/—	-
Amsinckia tessellata	devil's lettuce	native	Boraginaceae	—/—	-
Anaphalis margaritacea	pearly everlasting	native	Asteraceae	—/—	-
Ancistrocarphus filagineus	woolly fishhooks	native	Asteraceae	—/—	-
Antennaria dimorpha	gray cushion pussytoes	native	Asteraceae	—/—	-
Antennaria geyeri	Geyer's pussytoes	native	Asteraceae	—/—	-
Antennaria luzuloides	silvery brown pussytoes	native	Asteraceae	—/—	-
Anthriscus caucalis	bur chevril	non-native	Apiaceae	—/—	-
Apera interrupta	dense silky bent	non-native	Poaceae	—/—	-
Aphyllon purpureum	purple broomrape	native	Orobanchaceae	—/—	-
Apocynum androsaemifolium	spreading dogbane	native	Apocynaceae	—/—	-
Arctium lappa	greater burdock	non-native	Asteraceae	—/—	-

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Argemone munita	prickly poppy	native	Papaveraceae	—/—	-
Arnica cordifolia	heart leaved arnica	native	Asteraceae	—/—	-
Arnica fulgens	hillside arnica	native	Asteraceae	—/2B.2	-
Arnica sororia	twin arnica	native	Asteraceae	—/—	-
Arrhenatherum elatius	tall oatgrass	non-native	Poaceae	—/—	-
Artemisia arbuscula	black sagebrush	native	Asteraceae	—/—	-
Artemisia arbuscula ssp. *longiloba*	little sagebrush	native	Asteraceae	—/—	-
Artemisia cana ssp. *bolanderi*	Bolander's silver sagebrush	native	Asteraceae	—/—	-
Artemisia douglasiana	California mugwort	native	Asteraceae	—/—	-
Artemisia dracunculus	tarragon	native	Asteraceae	—/—	-
Artemisia ludoviciana	silver wormwood	native	Asteraceae	—/—	-
Artemisia nova	black sagebrush	native	Asteraceae	—/—	-
Artemisia sp.	-	-	Asteraceae	—/—	-
Artemisia spinescens	budsage	native	Asteraceae	—/—	-
Artemisia tridentata	common sagebrush	native	Asteraceae	—/—	-
Artemisia tridentata ssp. *tridentata*	big sagebrush	native	Asteraceae	—/—	-
Artemisia tridentata ssp. *vaseyana*	mountain sagebrush	native	Asteraceae	—/—	-
Artemisia tridentata ssp. *wyomingensis*	Wyoming sagebrush	native	Asteraceae	—/—	-
Asclepias cordifolia	purple milkweed	native	Apocynaceae	—/—	-
Asclepias fascicularis	milkweed	native	Apocynaceae	—/—	-
Asclepias speciosa	showy milkweed	native	Apocynaceae	—/—	-
Astragalus agrestis	purple loco weed	native	Fabaceae	—/2B.2	-
Astragalus andersonii	Anderson’s rattle weed	native	Fabaceae	—/—	-
Astragalus californicus	Klamath milk vetch	native	Fabaceae	—/—	-
Astragalus curvicarpus var. *curvicarpus*	curved pod milk vetch	native	Fabaceae	—/—	-

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Astragalus filipes	narrow pod locoweed	native	Fabaceae	—/—	-
Astragalus gibbsii	Gibbs locoweed	native	Fabaceae	—/—	-
Astragalus iodanthus	Humboldt river milkvetch	native	Fabaceae	—/—	-
Astragalus iodanthus var. *diaphanoides*	snake milkvetch	native	Fabaceae	—/4.3	-
Astragalus lentiginosus	freckled milk vetch	native	Fabaceae	—/—	-
Astragalus lentiginosus var. *lentiginosus*	freckled milk vetch	native	Fabaceae	—/—	-
Astragalus lentiginosus var. *salinus*	sagebrush milk vetch	native	Fabaceae	—/—	-
Astragalus malacus	shaggy milk vetch	native	Fabaceae	—/—	-
Astragalus pulsiferae var. coronensis	Modoc plateau milk vetch	native	Fabaceae	—/4.2	-
Astragalus purshii var. *tinctus*	Pursh's milk vetch	native	Fabaceae	—/—	-
Astragalus sp.	-	-	Fabaceae	—/—	-
Astragalus whitneyi	Whitney’s milk vetch	native	Fabaceae	—/—	-
Astragalus whitneyi var. *confusus*	Whitney’s milk vetch	native	Fabaceae	—/—	-
Atriplex canescens	hoary saltbush	native	Chenopodiaceae	—/—	-
Atriplex canescens var. *canescens*	fourwing saltbush	native	Chenopodiaceae	—/—	-
Atriplex confertifolia	spiny saltbush	native	Chenopodiaceae	—/—	-
Atriplex gardneri var. *falcata*	sickle saltbush	native	Chenopodiaceae	—/2B.2	-
Balsamorhiza hirsuta	hairy balsam root	native	Asteraceae	—/—	-
Balsamorhiza hookeri	hooker's balsam root	native	Asteraceae	—/—	-
Balsamorhiza sagittata	arrow leaved balsamroot	native	Asteraceae	—/—	-
Barbarea orthoceras	winter cress	native	Brassicaceae	—/—	-
Barbarea verna	wintercress	non-native	Brassicaceae	—/—	-
Barbarea vulgaris	yellow rocket	non-native	Brassicaceae	—/—	-
Bassia hyssopifolia	five horn bassia	non-native (invasive)	Chenopodiaceae	—/—	Limited

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Beckmannia syzigachne	American sloughgrass	native	Poaceae	—/—	-
Berberis sp.	-	-	Berberidaceae	—/—	Watch
Blepharipappus scaber	blepharipappus	native	Asteraceae	—/—	-
Boechera howellii	Howell's rockcress	native	Brassicaceae	—/—	-
Boechera pauciflora	hairy stem rockcress	native	Brassicaceae	—/—	-
Boechera puberula	silver rockcress	native	Brassicaceae	—/—	-
Boechera pulchra	beautiful rockcress	native	Brassicaceae	—/—	-
Boechera retrofracta	reflexed rockcress	native	Brassicaceae	—/—	-
Boechera sparsiflora	sicklepod rockcress	native	Brassicaceae	—/—	-
Brickellia sp.	-	-	Asteraceae	—/—	-
Briza maxima	rattlesnake grass	non-native (invasive)	Poaceae	—/—	Limited
Bromus briziformis	rattlesnake brome	non-native	Poaceae	—/—	-
Bromus carinatus	California bromegrass	native	Poaceae	—/—	-
Bromus hordeaceus	soft chess	non-native (invasive)	Poaceae	—/—	Limited
Bromus inermis	smooth brome	non-native	Poaceae	—/—	-
Bromus japonicus	hairy chess	non-native (invasive)	Poaceae	—/—	Limited
Bromus tectorum	downy chess	non-native (invasive)	Poaceae	—/—	High
Calamagrostis canadensis var. canadensis	bluejoint	native	Poaceae	—/—	-
Calochortus bruneaunis	pinyon mariposa	native	Liliaceae	—/—	-
Calochortus leichtlinii	Leichtlin's mariposa lily	native	Liliaceae	—/—	-
Calochortus macrocarpus	sagebrush mariposa lily	native	Liliaceae	—/—	-
Calystegia occidentalis	bush morning glory	native	Convolvulaceae	—/—	-
Calystegia occidentalis ssp. *occidentalis*	Modoc morning glory	native	Convolvulaceae	—/—	-
Camassia quamash ssp. *breviflora*	small camas	native	Agavaceae	—/—	-

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Camelina microcarpa	false flax	non-native	Brassicaceae	—/—	-
Camissonia contorta	contorted sun cup	native	Onagraceae	—/—	-
Camissonia parvula	tiny sun cup	native	Onagraceae	—/—	-
Camissonia pubens	hairy sun cup	native	Onagraceae	—/—	-
Capsella bursa-pastoris	shepherd's purse	non-native	Brassicaceae	—/—	-
Carex abrupta	abrupt beaked sedge	native	Cyperaceae	—/—	-
Carex amplifolia	ample leaved sedge	native	Cyperaceae	—/—	-
Carex angustata	narrow leaved sedge	native	Cyperaceae	—/—	-
Carex aquatilis	water sedge	native	Cyperaceae	—/—	-
Carex atherodes	slough sedge	native	Cyperaceae	—/2B.2	-
Carex athrostachya	slender leaved sedge	native	Cyperaceae	—/—	-
Carex douglasii	Douglas sedge	native	Cyperaceae	—/—	-
Carex nebrascensis	Nebraska sedge	native	Cyperaceae	—/—	-
Carex pellita	woolly sedge	native	Cyperaceae	—/—	-
Carex praegracilis	field sedge	native	Cyperaceae	—/—	-
Carex rossii	Ross' sedge	native	Cyperaceae	—/—	-
Carex sheldonii	Sheldon's sedge	native	Cyperaceae	—/2B.2	-
Carex simulata	short beaked sedge	native	Cyperaceae	—/—	-
Carex subfusca	brown sedge	native	Cyperaceae	—/—	-
Carex utriculata	beaked sedge	native	Cyperaceae	—/—	-
Castilleja applegatei ssp. *pinetorum*	pine wavy leaf paintbrush	native	Orobanchaceae	—/—	-
Castilleja chromosa	desert paintbrush	native	Orobanchaceae	—/—	-
Castilleja lacera	foothill owl's clover	native	Orobanchaceae	—/—	-
Castilleja nana	dwarf alpine paintbrush	native	Orobanchaceae	—/—	-
Castilleja pilosa	pilose paintbrush	native	Orobanchaceae	—/—	-
Castilleja tenuis	hairy owl's clover	native	Orobanchaceae	—/—	-
Catalpa speciosa	Northern catalpa	non-native	Bignoniaceae	—/—	-

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Ceanothus prostratus	mahala mats	native	Rhamnaceae	—/—	-
Centaurea cyanus	bachelor's button	non-native	Asteraceae	—/—	-
Centaurea solstitialis	yellow starthistle	non-native (invasive)	Asteraceae	—/—	High/ Noxious
Centaurea stoebe ssp. *micranthos*	spotted knapweed	non-native (invasive)	Asteraceae	—/—	High/ Noxious
Centaurium sp.	-	-	Gentianaceae	—/—	-
Centromadia pungens	common tarweed	native	Asteraceae	—/—	-
Centromadia pungens ssp. *pungens*	common tarweed	native	Asteraceae	—/—	-
Cerastium fontanum ssp. *vulgare*	common chickweed	non-native	Caryophyllaceae	—/—	-
Cercocarpus ledifolius	desert mountain mahogany	native	Rosaceae	—/—	-
Chaenactis douglasii var. *douglasii*	dusty maidens	native	Asteraceae	—/—	-
Chenopodium album	lambs quarters	non-native	Chenopodiaceae	—/—	-
Chenopodium chenopodioides	goosefoot	non-native	Chenopodiaceae	—/—	-
Chenopodium desiccatum	dry goosefoot	native	Chenopodiaceae	—/—	-
Chorispora tenella	crossflower	non-native (invasive)	Brassicaceae	—/—	Noxious
Chorizanthe brevicornu	brittle spine flower	native	Polygonaceae	—/—	-
Chorizanthe watsonii	Watson's spineflower	native	Polygonaceae	—/—	-
Chrysothamnus viscidiflorus	green rabbitbrush	native	Asteraceae	—/—	-
Chrysothamnus viscidiflorus ssp. *axillaris*	Sticky leaved rabbitbrush	native	Asteraceae	—/—	-
Chylismia claviformis ssp. *cruciformis*	cruciform evening-primrose	native	Onagraceae	—/2B.3	-
Cichorium intybus	chicory	non-native	Asteraceae	—/—	-
Cirsium arvense	Canada thistle	non-native (invasive)	Asteraceae	—/—	Moderate/ Noxious
Cirsium cymosum	peregrine thistle	native	Asteraceae	—/—	-

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Cirsium cymosum var. *cymosum*	peregrine thistle	native	Asteraceae	—/—	-
Cirsium inamoenum var. *inamoenum*	Greene's thistle	native	Asteraceae	—/—	-
Cirsium neomexicanum	desert thistle	native	Asteraceae	—/—	-
Cirsium occidentale var. *candidissimum*	snowy thistle	native	Asteraceae	—/—	-
Cirsium scariosum	elk thistle	native	Asteraceae	—/—	-
Cirsium vulgare	bullthistle	non-native (invasive)	Asteraceae	—/—	Moderate/ Noxious
Clarkia gracilis	graceful clarkia	native	Onagraceae	—/—	-
Clarkia gracilis ssp. *gracilis*	graceful clarkia	native	Onagraceae	—/—	-
Clarkia lassenensis	Lassen clarkia	native	Onagraceae	—/—	-
Clarkia purpurea	purple clarkia	native	Onagraceae	—/—	-
Clarkia purpurea ssp. *quadrivulnera*	purple clarkia	native	Onagraceae	—/—	-
Clarkia sp.	-	-	Onagraceae	—/—	-
Claytonia perfoliata	miner's lettuce	native	Montiaceae	—/—	-
Claytonia rubra	red stemmed spring beauty	native	Montiaceae	—/—	-
Collinsia parviflora	few flowered blue eyed mary	native	Plantaginaceae	—/—	-
Collomia grandiflora	large flowered collomia	native	Polemoniaceae	—/—	-
Collomia linearis	narrow leaved collomia	native	Polemoniaceae	—/—	-
Comandra umbellata ssp. *californica*	bastard toad flax	native	Comandraceae	—/—	-
Conium maculatum	poison hemlock	non-native (invasive)	Apiaceae	—/—	Moderate
Conringia orientalis	hare's ear mustard	non-native	Brassicaceae	—/—	-
Convolvulus arvensis	field bindweed	non-native (invasive)	Convolvulaceae	—/—	Noxious
Cordylanthus ramosus	bushy bird's beak	native	Orobanchaceae	—/—	-
Cornus sericea	American dogwood	native	Cornaceae	—/—	-

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Crepis acuminata	tall hawksbeard	native	Asteraceae	—/—	-
Crepis bakeri	Baker's hawksbeard	native	Asteraceae	—/—	-
Crepis intermedia	intermediate hawksbeard	native	Asteraceae	—/—	-
Crepis modocensis	Modoc hawksbeard	native	Asteraceae	—/—	-
Crepis modocensis ssp. *modocensis*	Modoc hawksbeard	native	Asteraceae	—/—	-
Crepis modocensis ssp. *subacaulis*	Modoc hawksbeard	native	Asteraceae	—/—	-
Crepis monticola	mountain hawk's beard	native	Asteraceae	—/—	-
Crepis occidentalis	western hawk's beard	native	Asteraceae	—/—	-
Crepis occidentalis ssp. *occidentalis*	largeflower hawksbeard	native	Asteraceae	—/—	-
Crepis occidentalis ssp. *pumila*	largeflower hawksbeard	native	Asteraceae	—/—	-
Cressa truxillensis	alkali weed	native	Convolvulaceae	—/—	-
Cryptantha ambigua	Wilkes' cryptantha	native	Boraginaceae	—/—	-
Cryptantha circumscissa	western forget me not	native	Boraginaceae	—/—	-
Cryptantha circumscissa var. circumscissa	cushion cryptantha	native	Boraginaceae	—/—	-
Cryptantha echinella	prickly cryptantha	native	Boraginaceae	—/—	-
Cryptantha intermedia	common cryptanth	native	Boraginaceae	—/—	-
Cryptantha torreyana var. *torreyana*	Torrey's cryptantha	native	Boraginaceae	—/—	-
Cuscuta sp.	-	-	Convolvulaceae	—/—	-
Cynoglossum officinale	hound's tongue	non-native (invasive)	Boraginaceae	—/—	Moderate
Cyperus sp.	-	-	Cyperaceae	—/—	-
Cystopteris fragilis	brittle fern	native	Woodsiaceae	—/—	-
Dactylis glomerata	orchardgrass	non-native (invasive)	Poaceae	—/—	Limited
Danthonia californica	California oatgrass	native	Poaceae	—/—	-
Danthonia unispicata	one spiked oatgrass	native	Poaceae	—/—	-

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Delphinium andersonii	Anderson larkspur	native	Ranunculaceae	—/—	-
Delphinium nuttallianum	Nuttall's larkspur	native	Ranunculaceae	—/—	-
Deschampsia cespitosa	tufted hair grass	native	Poaceae	—/—	-
Deschampsia danthonioides	annual hairgrass	native	Poaceae	—/—	-
Descurainia sophia	herb sophia	non-native (invasive)	Brassicaceae	—/—	Limited
Dianthus armeria ssp. armeria	grass pink	non-native	Caryophyllaceae	—/—	-
Dieteria canescens	hoary aster	native	Asteraceae	—/—	-
Dieteria canescens var. *canescens*	hoary aster	native	Asteraceae	—/—	-
Diplacus angustatus	narrow leaved pansy monkeyflower	native	Phrymaceae	—/—	-
Dipsacus fullonum	wild teasel	non-native (invasive)	Dipsacaceae	—/—	Moderate
Dipsacus sp.	-	-	Dipsacaceae	—/—	-
Distichlis spicata	salt grass	native	Poaceae	—/—	-
Downingia cuspidata	toothed downingia		Campanulaceae	—/—	-
Downingia insignis	harlequin downingia	native	Campanulaceae	—/—	-
Downingia laeta	great basin downingia	native	Campanulaceae	—/2B.2	-
Draba verna	whitlow grass	native	Brassicaceae	—/—	-
Dysphania botrys	Jerusalem oak goosefoot	non-native	Chenopodiaceae	—/—	-
Elaeagnus angustifolia	Russian olive	non-native (invasive)	Elaeagnaceae	—/—	Moderate
Eleocharis macrostachya	spike rush	native	Cyperaceae	—/—	-
Eleocharis palustris	common spikerush	native	Cyperaceae	—/—	-
Elymus caput-medusae	medusa head	non-native	Poaceae	—/—	High/Noxious
Elymus cinereus	great basin wild rye	native	Poaceae	—/—	-
Elymus elymoides	squirrel tail grass	native	Poaceae	—/—	-
Elymus glaucus	blue wildrye	native	Poaceae	—/—	-

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Elymus glaucus ssp. *glaucus*	blue wild rye	native	Poaceae	—/—	-
Elymus hispidus	intermediate wheatgrass	non-native	Poaceae	—/—	-
Elymus ponticus	tall wheat grass	non-native	Poaceae	—/—	-
Elymus spicatus	blue bunch wheat grass	native	Poaceae	—/—	-
Elymus triticoides	beardless wild rye	native	Poaceae	—/—	-
Ephedra nevadensis	Nevada ephedra	native	Ephedraceae	—/—	-
Ephedra viridis	green ephedra	native	Ephedraceae	—/—	-
Epilobium brachycarpum	willow herb	native	Onagraceae	—/—	-
Epilobium ciliatum	slender willow herb	native	Onagraceae	—/—	-
Epilobium densiflorum	willow herb	native	Onagraceae	—/—	-
Epilobium minutum	minute willowherb	native	Onagraceae	—/—	-
Equisetum arvense	common horsetail	native	Equisetaceae	—/—	-
Equisetum hyemale ssp. *affine*	giant scouring rush	native	Equisetaceae	—/—	-
Equisetum laevigatum	smooth scouring rush	native	Equisetaceae	—/—	-
Eremogone aculeata	prickly sandwort	native	Caryophyllaceae	—/—	-
Eremogone congesta	capitate sandwort	native	Caryophyllaceae	—/—	-
Eremogone congesta var. *crassula*	rough sandwort	native	Caryophyllaceae	—/—	-
Eremothera boothii ssp. *alyssoides*	pine creek evening-primrose	native	Onagraceae	—/4.3	-
Eriastrum signatum	-	native	Polemoniaceae	—/—	-
Eriastrum wilcoxii	Wilcox's eriastrum		Polemoniaceae	—/—	-
Ericameria bloomeri	bloomer's goldenbrush	native	Asteraceae	—/—	-
Ericameria nauseosa	rubber rabbitbrush	native	Asteraceae	—/—	-
Ericameria nauseosa var. *hololeuca*	common rabbitbrush	native	Asteraceae	—/—	-
Ericameria nauseosa var. *oreophila*	rubber rabbitbrush	native	Asteraceae	—/—	-

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Ericameria nauseosa var. *speciosa*	rubber rabbitbrush	native	Asteraceae	—/—	-
Erigeron aphanactis	rayless shaggy fleabane	native	Asteraceae	—/—	-
Erigeron bloomeri	scabland fleabane	native	Asteraceae	—/—	-
Erigeron bloomeri var. *bloomeri*	scabland fleabane	native	Asteraceae	—/—	-
Erigeron chrysopsidis var. *austiniae*	Rebecca austin's fleabane	native	Asteraceae	—/—	-
Erigeron divergens	diffuse daisy	native	Asteraceae	—/—	-
Erigeron eatonii	eaton's daisy	native	Asteraceae	—/—	-
Erigeron eatonii var. *nevadincola*	Nevada daisy	native	Asteraceae	—/2B.3	-
Erigeron eatonii var. *plantagineus*	eaton's daisy	native	Asteraceae	—/—	-
Erigeron eatonii var. *sonnei*	sonne's daisy	native	Asteraceae	—/—	-
Erigeron elegantulus	volcanic daisy	native	Asteraceae	—/4.3	-
Erigeron filifolius	threadleaf fleabane	native	Asteraceae	—/—	-
Erigeron inornatus var. *inornatus*	fleabane	native	Asteraceae	—/—	-
Erigeron linearis	narrow leaved fleabane	native	Asteraceae	—/—	-
Erigeron pumilus var. *intermedius*	shaggy fleabane	native	Asteraceae	—/—	-
Eriogonum caespitosum	clumping buckwheat	native	Polygonaceae	—/—	-
Eriogonum collinum	hill buckwheat	native	Polygonaceae	—/4.3	-
Eriogonum elatum var. *elatum*	tall buckwheat	native	Polygonaceae	—/—	-
Eriogonum elatum var. *villosum*	long hairy tall buckwheat	native	Polygonaceae	—/—	-
Eriogonum microthecum var. *ambiguum*	obscure buckwheat	native	Polygonaceae	—/—	-
Eriogonum microthecum var. *laxiflorum*	bush eriogonum	native	Polygonaceae	—/—	-
Eriogonum nudum	naked buckwheat	native	Polygonaceae	—/—	-

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Eriogonum nudum var. *nudum*	nude buckwheat	native	Polygonaceae	—/—	-
Eriogonum nudum var. *oblongifolium*	oblong leaved buckwheat	native	Polygonaceae	—/—	-
Eriogonum nudum var. *pubiflorum*	hairy flowered buckwheat	native	Polygonaceae	—/—	-
Eriogonum nutans var. *nutans*	nodding buckwheat	native	Polygonaceae	—/2B.3	-
Eriogonum sp.	-	-	Polygonaceae	—/—	-
Eriogonum sphaerocephalum	round headed buckwheat	native	Polygonaceae	—/—	-
Eriogonum sphaerocephalum var. *halimioides*	round headed buckwheat	native	Polygonaceae	—/—	-
Eriogonum sphaerocephalum var. *sphaerocephalum*	round headed buckwheat	native	Polygonaceae	—/—	-
Eriogonum strictum	blue mountain buckwheat	native	Polygonaceae	—/—	-
Eriogonum strictum var. *anserinum*	blue mountain buckwheat	native	Polygonaceae	—/—	-
Eriogonum umbellatum var. *dumosum*	many flowered sulfur flower	native	Polygonaceae	—/—	-
Eriogonum umbellatum var. *modocense*	sulphur flower buckwheat	native	Polygonaceae	—/—	-
Eriogonum umbellatum var. *nevadense*	sierra sulfur flower	native	Polygonaceae	—/—	-
Eriogonum vimineum	wicker stemmed eriogonum	native	Polygonaceae	—/—	-
Eriophyllum lanatum	wooly sunflower	native	Asteraceae	—/—	-
Eriophyllum lanatum var. *achilleoides*	yarrow leaved woolly sunflower	native	Asteraceae	—/—	-
Eriophyllum lanatum var. *integrifolium*	Oregon sunshine	native	Asteraceae	—/—	-
Erodium cicutarium	coastal heron's bill	non-native (invasive)	Geraniaceae	—/—	Limited
Erythranthe inflatula	ephemeral monkeyflower	native	Phrymaceae	BLMS/1B.2	-

Scientific Name	Common Name	Origin	Family	Federal/ CRPR[1]	Cal-IPC/CDFA[2]
Erythranthe latidens	Broad toothed monkeyflower	native	Phrymaceae	—/—	-
Eschscholzia californica	California poppy	native	Papaveraceae	—/—	-
Euphorbia serpyllifolia	Thyme-leafed spurge	native	Euphorbiaceae	—/—	-
Euphorbia virgata	leafy spurge	non-native	Euphorbiaceae	—/—	High/Noxious
Festuca arundinacea	reed fescue	non-native (invasive)	Poaceae	—/—	Moderate
Festuca idahoensis	blue fescue	native	Poaceae	—/—	-
Festuca microstachys	small fescue	native	Poaceae	—/—	-
Festuca myuros	rattail sixweeks grass	non-native (invasive)	Poaceae	—/—	Moderate
Festuca pratensis	meadow fescue	non-native	Poaceae	—/—	-
Frasera albicaulis var. *modocensis*	Modoc frasera	native	Gentianaceae	—/2B.3	-
Fritillaria atropurpurea	spotted mountain bells	native	Liliaceae	—/—	-
Fritillaria pudica	yellow fritillary	native	Liliaceae	—/—	-
Galium aparine	cleavers	native	Rubiaceae	—/—	-
Galium multiflorum	many flowered bedstraw	native	Rubiaceae	—/—	-
Gayophytum decipiens	deceiving gayophytum	native	Onagraceae	—/—	-
Gayophytum diffusum	spreading groundsmoke	native	Onagraceae	—/—	-
Gayophytum humile	dwarf groundsmoke	native	Onagraceae	—/—	-
Gayophytum ramosissimum	pinyon gayophytum	native	Onagraceae	—/—	-
Geranium viscosissimum	sticky geranium	native	Geraniaceae	—/—	-
Geum triflorum var. *ciliatum*	prairie-smoke	native	Rosaceae	—/—	-
Gilia inconspicua	shy gilia	native	Polemoniaceae	—/—	-
Gilia salticola	granite gilia	native	Polemoniaceae	—/—	-
Gilia sp.	-	-	Polemoniaceae	—/—	-
Glyceria borealis	northern mannagrass	native	Poaceae	—/—	-
Gnaphalium palustre	lowland cudweed	native	Asteraceae	—/—	-
Gratiola ebracteata	common hedge hyssop	native	Plantaginaceae	—/—	-

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Grayia spinosa	hop sage	native	Chenopodiaceae	—/—	-
Grindelia nana	Idaho gumweed	native	Asteraceae	—/—	-
Grindelia sp.	-	-	Asteraceae	—/—	-
Grindelia squarrosa var. *serrulata*	curlycup gumweed	non-native	Asteraceae	—/—	-
Hackelia cusickii	cusick stickweed	native	Boraginaceae	—/4.3	-
Halogeton glomeratus	halogeton	non-native (invasive)	Chenopodiaceae	—/—	Moderate/ Noxious
Helianthus annuus	hairy leaved sunflower	native	Asteraceae	—/—	-
Helianthus cusickii	cusick's sunflower	native	Asteraceae	—/—	-
Hemizonella minima	opposite leaved tarweed	native	Asteraceae	—/—	-
Heracleum maximum	common cowparsnip	native	Apiaceae	—/—	-
Hesperochiron californicus	California hesperochiron	native	Boraginaceae	—/—	-
Hesperochiron pumilus	dwarf hesperochiron	native	Boraginaceae	—/—	-
Hesperolinon micranthum	small flower western flax	native	Linaceae	—/—	-
Heterocodon rariflorum	heterocodon	native	Campanulaceae	—/—	-
Heterotheca villosa	hairy goldenaster	native	Asteraceae	—/—	-
Heterotheca villosa var. *minor*	hairy false goldenaster	native	Asteraceae	—/—	-
Holcus lanatus	common velvetgrass	non-native (invasive)	Poaceae	—/—	Moderate
Holosteum sp.	-	-	Rosaceae	—/—	-
Holosteum umbellatum ssp. *umbellatum*	jagged chickweed	non-native	Caryophyllaceae	—/—	-
Hordeum brachyantherum	meadow barley	native	Poaceae	—/—	-
Hordeum jubatum ssp. *jubatum*	foxtail barley, squirreltail barley	native	Poaceae	—/—	-
Hordeum murinum	foxtail barley	non-native (invasive)	Poaceae	—/—	Moderate
Hordeum murinum ssp. *glaucum*	foxtail	non-native	Poaceae	—/—	-

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Hordeum murinum ssp. *murinum*	wall barley	non-native	Poaceae	—/—	-
Hydrophyllum sp.	-	-	Boraginaceae	—/—	-
Hymenoxys lemmonii	Lemmon's goldflower	native	Asteraceae	—/2B.2	-
Hypericum perforatum ssp. *perforatum*	Klamathweed	non-native (invasive)	Hypericaceae	—/—	Limited/Noxious
Iris missouriensis	western blue flag	native	Iridaceae	—/—	-
Isatis tinctoria	dyers woad	non-native (invasive)	Brassicaceae	—/—	Moderate/Noxious
Isoetes sp.	-	-	Isoetaceae	—/—	-
Iva axillaris	povertyweed	native	Asteraceae	—/—	-
Juncus balticus ssp. *ater*	Baltic rush	native	Juncaceae	—/—	-
Juncus bufonius var. *bufonius*	toad rush	native	Juncaceae	—/—	-
Juncus nevadensis	sierra rush	native	Juncaceae	—/—	-
Juncus tenuis	slender rush	native	Juncaceae	—/—	-
Juncus tiehmii	tiehm's rush	native	Juncaceae	—/—	-
Juniperus occidentalis	western juniper	native	Cupressaceae	—/—	-
Juniperus osteosperma	Utah juniper	native	Cupressaceae	—/—	-
Kochia scoparia ssp. *scoparia*	red sage	non-native	Chenopodiaceae	—/—	-
Koeleria macrantha	june grass	native	Poaceae	—/—	-
Krascheninnikovia lanata	winter fat	native	Chenopodiaceae	—/—	-
Lactuca serriola	prickly lettuce	non-native (invasive)	Asteraceae	—/—	-
Lactuca sp.	-	-	Asteraceae	—/—	-
Ladeania lanceolata	lance-leaved scurf-pea	native	Fabaceae	—/2B.3	-
Lathyrus latifolius	Sweet pea	non-native	Fabaceae	—/—	-
Lathyrus rigidus	rigid pea	native	Fabaceae	—/2B.2	-
Lagophylla ramosissima	common hareleaf	native	Asteraceae	—/—	-

Scientific Name	Common Name	Origin	Family	Federal/ CRPR[1]	Cal-IPC/CDFA[2]
Lamium amplexicaule	henbit	non-native	Lamiaceae	—/—	-
Lamium purpureum	purple dead nettle	non-native	Lamiaceae	—/—	-
Lappula redowskii	stickweed	native	Boraginaceae	—/—	-
Lappula redowskii var. *cupulata*	cupped redowski's stickseed	native	Boraginaceae	—/—	-
Lathyrus jepsonii var. *californicus*	California tule pea	native	Fabaceae	—/—	-
Lathyrus lanszwertii var. *lanszwertii*	Nevada pea	native	Fabaceae	—/—	-
Lathyrus rigidus	rigid pea	native	Fabaceae	—/2B.2	-
Layia glandulosa	white layia	native	Asteraceae	—/—	-
Lepidium campestre	field pepper grass	non-native	Brassicaceae	—/—	-
Lepidium chalepense	lens-podded hoary cress	non-native (invasive)	Brassicaceae	—/—	Moderate/ Noxious
Lepidium draba	whitetop	non-native (invasive)	Brassicaceae	—/—	Moderate/ Noxious
Lepidium latifolium	perennial pepperweed	non-native (invasive)	Brassicaceae	—/—	High/Noxious
Lepidium perfoliatum	Klamath pepper grass	non-native	Brassicaceae	—/—	-
Leptosiphon bolanderi	Bolander's linanthus		Polemoniaceae	—/—	-
Leptosiphon ciliatus	whiskerbrush	native	Polemoniaceae	—/—	-
Leptosiphon harknessii	harkness' flaxflower	native	Polemoniaceae	—/—	-
Leucocrinum montanum	sand lily	native	Agavaceae	—/—	-
Lewisia rediviva	bitter root	native	Montiaceae	—/—	-
Limosella acaulis	stemless mudwort	native	Scrophulariaceae	—/—	-
Linanthus pungens	granite prickly phlox	native	Polemoniaceae	—/—	-
Linaria dalmatica ssp. *dalmatica*	Dalmatian toadflax		Plantaginaceae	—/—	Moderate/ Noxious
Linum lewisii var. *lewisii*	lewis' flax	native	Linaceae	—/—	-
Lithophragma glabrum	bulbed woodland star	native	Saxifragaceae	—/—	-
Lithophragma parviflorum	pink woodland star	native	Saxifragaceae	—/—	-

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Lithophragma parviflorum var. *parviflorum*	pink woodland star	native	Saxifragaceae	—/—	-
Lithophragma tenellum	Woodland star	native	Saxifragaceae	—/—	-
Lithospermum ruderale	western gromwell	native	Boraginaceae	—/—	-
Lomatium canbyi	Canby's lomatium	native	Apiaceae	—/4.3	-
Lomatium dissectum	fern leaved lomatium	native	Apiaceae	—/—	-
Lomatium macrocarpum	large fruited lomatium	native	Apiaceae	—/—	-
Lomatium nevadense	Nevada lomatium	native	Apiaceae	—/—	-
Lomatium nudicaule	pestle lomatium	native	Apiaceae	—/—	-
Lomatium ravenii ssp. *ravenii*	raven's lomatium	native	Apiaceae	BLMS/1B.3	-
Lomatium roseanum	adobe lomatium	native	Apiaceae	BLMS/1B.2	-
Lomatium triternatum	Lewis's lomatium	native	Apiaceae	—/—	-
Lomatium vaginatum	sheathed lomatium	native	Apiaceae	—/—	-
Lotus corniculatus	bird's foot trefoil	non-native (invasive)	Fabaceae	—/—	-
Lupinus arbustus	long spurred lupine	native	Fabaceae	—/—	-
Lupinus argenteus	silvery lupine	native	Fabaceae	—/—	-
Lupinus argenteus var. *argenteus*	silvery lupine	native	Fabaceae	—/—	-
Lupinus argenteus var. *heteranthus*	silvery lupine	native	Fabaceae	—/—	-
Lupinus brevicaulis	short stemmed blue lupine	native	Fabaceae	—/—	-
Lupinus latifolius var. *columbianus*	hair tuft lupine	native	Fabaceae	—/—	-
Lupinus lepidus	tidy lupine	native	Fabaceae	—/—	-
Lupinus lepidus var. *confertus*	clustered tidy lupine	native	Fabaceae	—/—	-
Lupinus microcarpus var. *microcarpus*	chick lupine	native	Fabaceae	—/—	-
Lupinus pusillus var. *intermontanus*	Intermountain lupine	native	Fabaceae	—/2B.3	-

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Lupinus saxosus	rock lupine	native	Fabaceae	—/—	-
Madia citriodora	lemon scented tarweed	native	Asteraceae	—/—	-
Madia elegans	common madia	native	Asteraceae	—/—	-
Madia glomerata	mountain tarweed	native	Asteraceae	—/—	-
Maianthemum racemosum	feathery false lily of the valley	native	Ruscaceae	—/—	-
Maianthemum stellatum	starry false lily of the valley	native	Ruscaceae	—/—	-
Malva neglecta	dwarf mallow	non-native	Malvaceae	—/—	-
Marrubium vulgare	white horehound	non-native (invasive)	Lamiaceae	—/—	Limited
Matricaria discoidea	pineapple weed	native	Asteraceae	—/—	-
Medicago lupulina	black medick	non-native	Fabaceae	—/—	-
Medicago sativa	alfalfa	non-native	Fabaceae	—/—	-
Melica bulbosa	oniongrass	native	Poaceae	—/—	-
Melilotus albus	white sweetclover	non-native (invasive)	Fabaceae	—/—	-
Melilotus officinalis	yellow sweetclover	non-native (invasive)	Fabaceae	—/—	-
Melissa officinalis	lemon balm	non-native	Lamiaceae	—/—	-
Mentzelia albicaulis	white stemmed blazing star	native	Loasaceae	—/—	-
Mentzelia sp.	-	-	Loasaceae	—/—	-
Menziesia sp.	-	-	Ericaceae	—/—	-
Mertensia ciliata var. *stomatechoides*	streamside bluebells	native	Boraginaceae	—/—	-
Mertensia oblongifolia var. oblongifolia	sagebrush bluebells	native	Boraginaceae	—/2B.2	-
Micranthes aprica	sierra saxifrage	native	Saxifragaceae	—/—	-
Micranthes bryophora	bud saxifrage	native	Saxifragaceae	—/—	-
Microseris laciniata ssp. *laciniata*	cut leaved scorzonella	native	Asteraceae	—/—	-
Microseris nutans	nodding microceris	native	Asteraceae	—/—	-

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Microsteris gracilis	slender phlox	native	Polemoniaceae	—/—	-
Mimulus breweri	brewer's monkeyflower	native	Phrymaceae	—/—	-
Mimulus guttatus	yellow monkey flower	native	Phrymaceae	—/—	-
Mimulus nanus	dwarf monkey flower	native	Phrymaceae	—/—	-
Mimulus nanus var. *mephiticus*	skunky monkeyflower	native	Phrymaceae	—/—	-
Mimulus nanus var. *nanus*	dwarf monkey flower	native	Phrymaceae	—/—	-
Mimulus pilosus	snouted monkey flower	native	Phrymaceae	—/—	-
Mimulus pulsiferae	candelabrum monkey flower	native	Phrymaceae	—/—	-
Mimulus suksdorfii	Suksdorf's monkeyflower	native	Phrymaceae	—/—	-
Monardella odoratissima	mountain monardella	native	Lamiaceae	—/—	-
Monardella odoratissima ssp. *glauca*	Follett’s monardella	native	Lamiaceae	—/—	-
Monolepis nuttalliana	Nuttall’s poverty weed	native	Chenopodiaceae	—/—	-
Montia chamissoi	spring beauty	native	Montiaceae	—/—	-
Montia fontana	water montia	native	Montiaceae	—/—	-
Montia linearis	narrow leaved water chickweed	native	Montiaceae	—/—	-
Muhlenbergia asperifolia	scratchgrass	native	Poaceae	—/—	-
Muhlenbergia richardsonis	Richardson’s muhly	native	Poaceae	—/—	-
Muilla transmontana	great basin muilla	native	Themidaceae	—/—	-
Myosotis scorpioides	forget me not	non-native	Boraginaceae	—/—	-
Myosurus apetalus	mouse tail	native	Ranunculaceae	—/—	-
Myosurus apetalus var. *borealis*	bristly mousetail	native	Ranunculaceae	—/—	-
Myosurus minimus	little mouse tail	native	Ranunculaceae	—/—	-
Myriophyllum sp.	-		Haloragaceae	—/—	-
Nama aretioides	purple nama	native	Boraginaceae	—/—	-
Nama aretioides var. *multiflora*	-	native	Boraginaceae	—/—	-

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Nasturtium sp.	-	-	Brassicaceae	—/—	-
Nasturtium officinale	watercress	native	Brassicaceae	—/—	-
Navarretia breweri	brewer's navarretia	native	Polemoniaceae	—/—	-
Navarretia divaricata	mountain navarretia	native	Polemoniaceae	—/—	-
Navarretia divaricata ssp. *vividior*	mountain navarretia	native	Polemoniaceae	—/—	-
Navarretia intertexta	interwoven navarretia	native	Polemoniaceae	—/—	-
Navarretia leucocephala ssp. *leucocephala*	white headed navarretia	native	Polemoniaceae	—/—	-
Navarretia propinqua	-	native	Polemoniaceae	—/—	-
Navarretia sinistra	alva day's pincushionplant	native	Polemoniaceae	—/—	-
Nemophila pedunculata	meadow nemophila	native	Boraginaceae	—/—	-
Neoholmgrenia andina	plateau evening primrose	native	Onagraceae	—/—	-
Nepeta cataria	catnip	non-native	Lamiaceae	—/—	-
Nicotiana attenuata	coyote tobacco	native	Solanaceae	—/—	-
Nitrophila occidentalis	western nitrophila	native	Amaranthaceae	—/—	-
Nothocalais troximoides	false agoseris	native	Asteraceae	—/—	-
Nuphar sp.	-	-	Nymphaeaceae	—/—	-
Oenothera deltoides	desert lantern	native	Onagraceae	—/—	-
Oenothera deltoides ssp. *piperi*	Piper's desert lantern	native	Onagraceae	—/—	-
Onopordum acanthium	Scotch thistle	non-native (invasive)	Asteraceae	—/—	High/Noxious
Orobanche corymbosa	flat topped broom rape	native	Orobanchaceae	—/—	-
Orobanche fasciculata	pinyon broomrape	native	Orobanchaceae	—/—	-
Orobanche purpureum	-	-	Orobanchaceae	—/—	-
Osmorhiza berteroi	sweetcicely	native	Apiaceae	—/—	-
Packera cana	woolly groundsel	native	Asteraceae	—/—	-
Packera eurycephala	widehead groundsel	native	Asteraceae	—/—	-
Packera multilobata	lobeleaf groundsel	native	Asteraceae	—/—	

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Paeonia brownii	peony	native	Paeoniaceae	—/—	-
Panicum acuminatum	western witch grass	native	Poaceae	—/—	-
Pectocarya penicillata	winged pectocarya	native	Boraginaceae	—/—	-
Pedicularis centranthera	dwarf lousewort	Orobanchaceae	native	BLMS/2B.3	-
Penstemon deustus	rock penstemon	native	Plantaginaceae	—/—	-
Penstemon deustus var. *pedicellatus*	hot rock beardtongue	native	Plantaginaceae	—/—	-
Penstemon gracilentus	slender beardtongue	native	Plantaginaceae	—/—	-
Penstemon neotericus	derived penstemon	native	Plantaginaceae	—/—	-
Penstemon roezlii	regel's mountain penstemon	native	Plantaginaceae	—/—	-
Penstemon rydbergii var. *oreocharis*	meadow beardtongue	native	Plantaginaceae	—/—	-
Penstemon speciosus	showy penstemon	native	Plantaginaceae	—/—	-
Penstemon sudans	volcanic beardtongue	native	Plantaginaceae	BLMS/1B.3	-
Peraphyllum ramosissimum	wild crab apple	native	Rosaceae	—/—	-
Perideridia bolanderi	bolander's yampah	native	Apiaceae	—/—	-
Perideridia bolanderi ssp. *bolanderi*	bolander's yampah	native	Apiaceae	—/—	-
Phacelia adenophora	glandular yellow phacelia	native	Boraginaceae	—/—	-
Phacelia bicolor	twocolor phacelia	native	Boraginaceae	—/—	-
Phacelia heterophylla var. *virgata*	varied leaf phacelia	native	Boraginaceae	—/—	-
Phacelia humilis	low phacelia	native	Boraginaceae	—/—	-
Phacelia humilis var. *humilis*	low phacelia	native	Boraginaceae	—/—	-
Phacelia insularis	santa rosa island phacelia	native	Boraginaceae	—/—	-
Phacelia linearis	thread leaf phacelia	native	Boraginaceae	—/—	-
Phacelia mutabilis	changeable phacelia	native	Boraginaceae	—/—	-
Phacelia ramosissima	branching phacelia	native	Boraginaceae	—/—	-
Phacelia thermalis	heat phacelia	native	Boraginaceae	—/—	-

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Phalaris arundinacea	reed canarygrass	native	Poaceae	—/—	-
Phleum pratense	common timothy	non-native	Poaceae	—/—	-
Phlox hoodii ssp. *canescens*	hood's phlox	native	Polemoniaceae	—/—	-
Phlox stansburyi	cold desert phlox	native	Polemoniaceae	—/—	-
Phoenicaulis cheiranthoides	dagger pod	native	Brassicaceae	—/—	-
Phoradendron juniperinum	mistletoe	native	Viscaceae	—/—	-
Phragmites australis	common reed	native	Poaceae	—/—	-
Pinus jeffreyi	Jeffrey pine	native	Pinaceae	—/—	-
Pinus ponderosa	yellow pine	native	Pinaceae	—/—	-
Plagiobothrys bracteatus	bracted allocarya	native	Boraginaceae	—/—	-
Plagiobothrys kingii	great basin popcorn flower	native	Boraginaceae	—/—	-
Plagiobothrys leptocladus	alkali plagiobothrys	native	Boraginaceae	—/—	-
Plagiobothrys tenellus	slender popcorn flower	native	Boraginaceae	—/—	-
Plantago lanceolata	ribwort	non-native (invasive)	Plantaginaceae	—/—	Limited
Plantago major	common plantain	non-native	Plantaginaceae	—/—	-
Platanthera dilatata var. *leucostachys*	sierra bog orchid	native	Orchidaceae	—/—	-
Platanthera sp.	-	-	Orchidaceae	—/—	-
Plectritis ciliosa	long spurred plectritis	native	Valerianaceae	—/—	-
Plectritis congesta ssp. *brachystemon*	shortspur seablush	native	Valerianaceae	—/—	-
Plectritis macrocera	plectritis	native	Valerianaceae	—/—	-
Pleiacanthus spinosus	thorn skeletonweed	native	Asteraceae	—/—	-
Poa bulbosa	bulbous blue grass	non-native	Poaceae	—/—	-
Poa cusickii ssp. *cusickii*	Cusick's blue grass	native	Poaceae	—/—	-
Poa pratensis ssp. *pratensis*	Kentucky blue grass	non-native (invasive)	Poaceae	—/—	Limited
Poa secunda	pine bluegrass	native	Poaceae	—/—	-

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Poa secunda ssp. *juncifolia*	rush blue grass	native	Poaceae	—/—	-
Poa secunda ssp. *secunda*	Sandberg's bluegrass	native	Poaceae	—/—	-
Polemonium micranthum	annual sky pilot	native	Polemoniaceae	—/—	-
Polyctenium fremontii var. *fremontii*	Fremont's polyctenium	native	Brassicaceae	—/4.3	-
Polyctenium williamsiae	Williams' combleaf	native	Brassicaceae	BLMS/1B.2	-
Polygala subspinosa	spiny Milkwort	native	Polygonaceae	—/2B.2	-
Polygonum aviculare ssp. *depressum*	prostrate knotweed	non-native	Polygonaceae	—/—	-
Polygonum aviculare ssp. *rurivagum*	prostrate knotweed	non-native	Polygonaceae	—/—	-
Polygonum polygaloides	milkwort knotweed	native	Polygonaceae	—/—	-
Polygonum polygaloides ssp. *kelloggii*	Kellogg's knotweed	native	Polygonaceae	—/—	-
Polygonum sawatchense ssp. *sawatchense*	-	native	Polygonaceae	—/—	-
Polypogon monspeliensis	rabbitsfoot grass	non-native (invasive)	Poaceae	—/—	Limited
Populus fremontii ssp. *fremontii*	Cottonwood	native	Salicaceae	—/—	-
Populus nigra	Lombardy poplar	non-native	Salicaceae	—/—	-
Populus sp.	-	-	Salicaceae	—/—	-
Populus tremuloides	quaking aspen	native	Salicaceae	—/—	-
Populus trichocarpa	black cottonwood	native	Salicaceae	—/—	-
Potentilla biennis	biennial cinquefoil	native	Rosaceae	—/—	-
Potentilla gracilis	northwest cinquefoil	native	Rosaceae	—/—	-
Potentilla gracilis var. *fastigiata*	slender cinquefoil	native	Rosaceae	—/—	-
Potentilla gracilis var. *flabelliformis*	cupform leaf cinquefoil	native	Rosaceae	—/—	-
Poterium sanguisorba	garden burnet	non-native	Rosaceae	—/—	-
Primula conjugens	Bonneville shooting star	native	Primulaceae	—/—	-

Scientific Name	Common Name	Origin	Family	Federal/ CRPR[1]	Cal-IPC/CDFA[2]
Prunus andersonii	desert peach	native	Rosaceae	—/—	-
Prunus emarginata	bitter cherry	native	Rosaceae	—/—	-
Prunus fasciculata	desert almond	native	Rosaceae	—/—	-
Prunus subcordata	sierra plum	native	Rosaceae	—/—	-
Prunus virginiana var. *demissa*	western choke cherry	native	Rosaceae	—/—	-
Pseudognaphalium thermale	small headed cudweed	native	Asteraceae	—/—	-
Pseudoroegneria spicata sp. *inermis*	-	-	-	—/—	-
Psilocarphus oregonus	woolly marbles	native	Asteraceae	—/—	-
Puccinellia nuttalliana	Nuttall's alkali grass	native	Poaceae	—/—	-
Purshia tridentata	antelope bush	native	Rosaceae	—/—	-
Pyrrocoma carthamoides var. *cusickii*	Cusick's columbia pyrrocoma	native	Asteraceae	—/—	-
Pyrrocoma lanceolata	intermountain pyrrocoma	native	Asteraceae	—/—	-
Pyrrocoma racemosa var. *paniculata*	panicled pyrrocoma	native	Asteraceae	—/—	-
Quercus kelloggii	California black oak	native	Fagaceae	—/—	-
Ranunculus californicus	common buttercup	native	Ranunculaceae	—/—	-
Ranunculus cymbalaria	alkali buttercup	native	Ranunculaceae	—/—	-
Ranunculus glaberrimus var. *glaberrimus*	smooth buttercup	native	Ranunculaceae	—/—	-
Ranunculus occidentalis	western buttercup	native	Ranunculaceae	—/—	-
Ranunculus occidentalis var. *dissectus*	western buttercup	native	Ranunculaceae	—/—	-
Ranunculus sceleratus	cursed crowfoot	native	Ranunculaceae	—/—	-
Ranunculus testiculatus[3]	tubercled crowfoot	non-native	Ranunculaceae	—/—	-
Ribes aureum	golden currant	native	Grossulariaceae	—/—	-
Ribes velutinum	desert gooseberry	native	Grossulariaceae	—/—	-
Ribes viscosissimum	sticky current	native	Grossulariaceae	—/—	-

Scientific Name	Common Name	Origin	Family	Federal/ CRPR[1]	Cal-IPC/CDFA[2]
Rigiopappus leptocladus	wire weed	native	Asteraceae	—/—	-
Robinia pseudoacacia	black locust	non-native (invasive)	Fabaceae	—/—	Limited
Rorippa curvisliqua var *orientalis*	-	-	-	—/—	-
Rorippa sinuata	spreading yellow cress	native	Brassicaceae	—/—	-
Rosa woodsii	woods' rose	native	Rosaceae	—/—	-
Rosa woodsii ssp. *ultramontana*	interior rose	native	Rosaceae	—/—	-
Rubus armeniacus	Himalayan blackberry	non-native (invasive)	Rosaceae	—/—	High
Rumex acetosella	sheep sorrel	non-native (invasive)	Polygonaceae	—/—	Moderate
Rumex crispus	curly dock	non-native (invasive)	Polygonaceae	—/—	Limited
Rumex lacustris	lake dock	native	Polygonaceae	—/—	-
Rumex obtusifolius	broadleaf dock	non-native	Polygonaceae	—/—	-
Rumex triangulivalvis	willow dock	native	Polygonaceae	—/—	-
Rumex venosus	winged dock	Polygonaceae	native	—/2B.3	-
Salix exigua	narrowleaf willow	native	Salicaceae	—/—	-
Salix geyeriana	Geyer's willow	native	Salicaceae	—/—	-
Salix lasiandra	pacific willow	native	Salicaceae	—/—	-
Salix lasiandra var. *caudata*	shining willow	native	Salicaceae	—/—	-
Salix lasiolepis	arroyo willow	native	Salicaceae	—/—	-
Salix lemmonii	Lemmon's willow	native	Salicaceae	—/—	-
Salsola tragus	Russian thistle	non-native (invasive)	Chenopodiaceae	—/—	Limited/ Noxious
Salvia aethiopis	Mediterranean sage	non-native (invasive)	Lamiaceae	—/—	Limited/Noxious
Salvia dorrii var. *dorrii*	Dorr's sage	native	Lamiaceae	—/—	-
Sambucus sp.	-	-	Adoxaceae	—/—	-
Sarcobatus vermiculatus	greasewood	native	Sarcobataceae	—/—	-

Scientific Name	Common Name	Origin	Family	Federal/ CRPR[1]	Cal-IPC/CDFA[2]
Schoenoplectus acutus var. *occidentalis*	tule	native	Cyperaceae	—/—	-
Schoenoplectus americanus	chairmaker's bulrush	native	Cyperaceae	—/—	-
Schoenoplectus pungens var. *longispicatus*	common threesquare	native	Cyperaceae	—/—	-
Schoenoplectus sp.	-	-	Cyperaceae	—/—	-
Scirpus microcarpus	mountain bog bulrush	native	Cyperaceae	—/—	-
Scrophularia californica	california bee plant	native	Scrophulariaceae	—/—	-
Scrophularia desertorum	desert figwort	native	Scrophulariaceae	—/—	-
Scutellaria nana	little skullcap	native	Lamiaceae	—/—	-
Secale cereale	rye	non-native	Poaceae	—/—	-
Senecio hydrophiloides	sweet marsh ragwort	native	Asteraceae	—/—	-
Senecio integerrimus	mountain butterweed	native	Asteraceae	—/—	-
Senecio integerrimus var. *exaltatus*	columbia mountain butterweed	native	Asteraceae	—/—	-
Senecio serra var. *serra*	tall ragwort	native	Asteraceae	—/—	-
Sidalcea glaucescens	glaucous checker mallow	native	Malvaceae	—/—	-
Sidalcea oregana	oregon checker mallow	native	Malvaceae	—/—	-
Silene lemmonii	lemmon's catchfly	native	Caryophyllaceae	—/—	-
Sisymbrium altissimum	tumble mustard	non-native	Brassicaceae	—/—	-
Sisymbrium orientale	indian hedge mustard	non-native	Brassicaceae	—/—	-
Sisyrinchium idahoense	Idaho blue eyed grass	native	Iridaceae	—/—	-
Solanum dulcamara	bittersweet	non-native	Solanaceae	—/—	-
Solidago elongata	west coast canada goldenrod	native	Asteraceae	—/—	-
Sparganium emersum	emersed bur-reed	native	Typhaceae	—/—	-
Sparganium eurycarpum	broadfruit bur reed	native	Typhaceae	—/—	-
Spirodela polyrhiza	giant duckmeat	native	Araceae	—/—	-
Sporobolus cryptandrus	sand dropseed	native	Poaceae		
Sporobolus sp.	-	-	Poaceae	—/—	-

Scientific Name	Common Name	Origin	Family	Federal/ CRPR[1]	Cal-IPC/CDFA[2]
Stachys pilosa	prairie woundwort	native	Lamiaceae	—/2B.3	
Stanleya viridiflora	green flowered prince's plume	Brassicaceae	native	—/2B.3	-
Stellaria longipes ssp. *longipes*	chickweed, starwort	native	Caryophyllaceae	—/—	-
Stenotus acaulis	stemless mock goldenweed	native	Asteraceae	—/—	-
Stenotus lanuginosus var. *lanuginosus*	woolly stenotus	native	Asteraceae	BLMS/2B.2	-
Stephanomeria pauciflora	wire lettuce	native	Asteraceae	—/—	-
Stipa comata	needle-and-thread	native	Poaceae	—/—	-
Stipa hymenoides	indian rice grass	native	Poaceae	—/—	-
Stipa lemmonii	lemmon's needle grass	native	Poaceae	—/—	-
Stipa occidentalis	western needlegrass	native	Poaceae	—/—	-
Stipa occidentalis var. *pubescens*	common western needle grass	native	Poaceae	—/—	-
Stipa sp.	-	-	Poaceae	—/—	-
Stipa thurberiana	Thurber’s needle grass	native	Poaceae	—/—	-
Streptanthus cordatus	heartleaf jewelflower	native	Brassicaceae	—/—	-
Streptanthus cordatus var. *cordatus*	heartleaf jewelflower	native	Brassicaceae	—/—	-
Suaeda calceoliformis	horned sea blite	native	Chenopodiaceae	—/—	-
Symphoricarpos longiflorus	desert snowberry	native	Caprifoliaceae	—/—	-
Symphoricarpos rotundifolius	mountain snowberry	native	Caprifoliaceae	—/—	-
Symphyotrichum bracteolatum	Eaton's aster	native	Asteraceae	—/—	-
Symphyotrichum spathulatum	western mountain aster	native	Asteraceae	—/—	-
Tamarix ramosissima	Salt cedar	non-native (invasive)	Tamaricaceae	—/—	High/Noxious
Taraxacum officinale	red seeded dandelion	non-native (invasive)	Asteraceae	—/—	-

Scientific Name	Common Name	Origin	Family	Federal/ CRPR[1]	Cal-IPC/CDFA[2]
Taraxia subacaulis	long leaved suncup	native	Onagraceae	—/—	-
Taraxia tanacetifolia	tansy leaf evening primrose	native	Onagraceae	—/—	-
Tetradymia canescens	gray horsebrush	native	Asteraceae	—/—	-
Tetradymia glabrata	little leaf horsebrush	native	Asteraceae	—/—	-
Tetradymia spinosa	spiny horsebrush	native	Asteraceae	—/—	-
Thelypodium flexuosum	nodding thelypodium	native	Brassicaceae	—/—	-
Thelypodium milleflorum	manyflower thelypody	native	Brassicaceae	—/2B.2	
Thlaspi arvense	fan weed	non-native	Brassicaceae	—/—	-
Thysanocarpus curvipes	common fringe pod	Brassicaceae	-	—/—	-
Tiquilia nuttallii	nuttall's coldenia	native	Boraginaceae	—/—	-
Toxicoscordion paniculatum	foothill deathcamas	native	Melanthiaceae	—/—	-
Tragopogon dubius	goat's beard	non-native (invasive)	Asteraceae	—/—	-
Tragopogon porrifolius	salsify	non-native	Asteraceae	—/—	-
Tribulus terrestris	puncture vine	non-native (invasive)	Zygophyllaceae	—/—	Limited/ Noxious
Trifolium cyathiferum	cup clover	native	Fabaceae	—/—	-
Trifolium campestre	hop clover	non-native	Fabaceae	—/—	-
Trifolium gymnocarpon ssp. *plummerae*	plummer's clover	Fabaceae	native	—/2B.3	-
Trifolium hirtum	rose clover	Non-native (invasive)	Fabaceae	—/—	Limited
Trifolium hybridum	alsike clover	non-native	Fabaceae	—/—	-
Trifolium macrocephalum	big headed clover	native	Fabaceae	—/—	-
Trifolium microcephalum	small head clover	native	Fabaceae	—/—	-
Trifolium variegatum	variegated clover	native	Fabaceae	—/—	-
Trifolium willdenovii	tomcat clover	native	Fabaceae	—/—	-
Triglochin concinna var. *debilis*	slender arrow grass	native	Juncaginaceae	—/—	-
Triglochin maritima	seaside arrow grass	native	Juncaginaceae	—/—	-

Scientific Name	Common Name	Origin	Family	Federal/ CRPR[1]	Cal-IPC/CDFA[2]
Triglochin sp.	-	-	Juncaginaceae	—/—	-
Trisetum canescens	nodding trisetum	native	Poaceae	—/—	-
Triteleia hyacinthina	wild hyacinth	native	Themidaceae	—/—	-
Triticum aestivum	common wheat	non-native	Poaceae	—/—	-
Typha latifolia	boradleaf cattail	native	Typhaceae	—/—	-
Ulmus pumila	siberian elm	non-native (invasive)	Ulmaceae	—/—	-
Urtica dioica	stinging nettle	native	Urticaceae	—/—	-
Urtica dioica ssp. *holosericea*	stinging nettle	native	Urticaceae	—/—	-
Ventenata dubia[3]	ventenata grass	non-native	Poaceae	—/—	Watch
Veratrum sp.	-	-	Melanthiaceae	—/—	-
Verbascum blattaria	moth mullein	non-native	Scrophulariaceae	—/—	-
Verbascum thapsus	woolly mullein	non-native (invasive)	Scrophulariaceae	—/—	Limited
Verbena bracteata	bracted verbena	native	Verbenaceae	—/—	-
Veronica americana	american brooklime	native	Plantaginaceae	—/—	-
Veronica anagallis-aquatica	water speedwell	non-native	Plantaginaceae	—/—	-
Veronica arvensis	speedwell	non-native	Plantaginaceae	—/—	-
Veronica peregrina ssp. *xalapensis*	speedwell	native	Plantaginaceae	—/—	-
Veronica scutellata	marsh speedwell	native	Plantaginaceae	—/—	-
Veronica sp.	-	-	Plantaginaceae	—/—	-
Vicia americana ssp. *americana*	american vetch	native	Fabaceae	—/—	-
Viola beckwithii	great basin violet	native	Violaceae	—/—	-
Viola praemorsa ssp. *linguifolia*	Astoria violet	native	Violaceae	—/—	-
Viola purpurea ssp. *aurea*	golden violet	Violaceae	native	—/2B.2	-
Vitis californica	california wild grape	native	Vitaceae	—/—	-
Wyethia mollis	woolly mule's ears	native	Asteraceae	—/—	-

Scientific Name	Common Name	Origin	Family	Federal/ CRPR[1]	Cal-IPC/CDFA[2]
Xanthium strumarium	cocklebur	native	Asteraceae	—/—	-
Zannichellia palustris	horned pondweed	native	Zannichelliaceae	—/—	-

Notes:
1. **California Rare Plant Rank (CRPR)**
1B: Plants rare, threatened, or endangered in California and elsewhere.
2B: Plants rare, threatened, or endangered in California but more common elsewhere.
3: Plants about which more information is needed- a review list.
4: Plants of limited distribution- a watch list.

Threat Ranks:
0.1-Seriously threatened in California (more than 80 percent of occurrences threatened / high degree and immediacy of threat)
0.2-Moderately threatened in California (20-80 percent occurrences threatened / moderate degree and immediacy of threat)
0.3-Not very threatened in California (less than 20 percent of occurrences threatened / low degree and immediacy of threat or no current threats known)

2. **Invasive/Noxious Status**

California Invasive Plant Council (Cal-IPC)
High: These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.
Moderate: These species have substantial and apparent-but generally not severe-ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.
Limited: These species are invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.
Watch: These species are not currently invasive in California. An assessment has found them to be a high risk for becoming invasive in the future

California Department of Food and Agriculture (CDFA)
Noxious=Listed as a noxious weed under Section 4500

3**.** Bureau of Land Management-identified invasive weed.

Appendix C REPRESENTATIVE PHOTOGRAPHS OF SPECIAL STATUS SPECIES

Representative Photographs of Special-Status Plant Species

Client	Zayo Group LLC	**Project**	Prineville to Reno Fiber Optic Project
Survey Dates	2019 May 22-31, 2019 June 1-9 and 18-27, 2019 July 29, 2019 August 3-4, 2019		2020 April 27-28, 2020 May 6-31, 2020 June 2-23, 2020 August 4-6, 2020

Photograph #:
1

Comments:
Punctate onion (*Allium punctum*; CRPR 2B.2) plant.

Photograph #:
2

Comments:
Punctate onion inflorescence close-up.

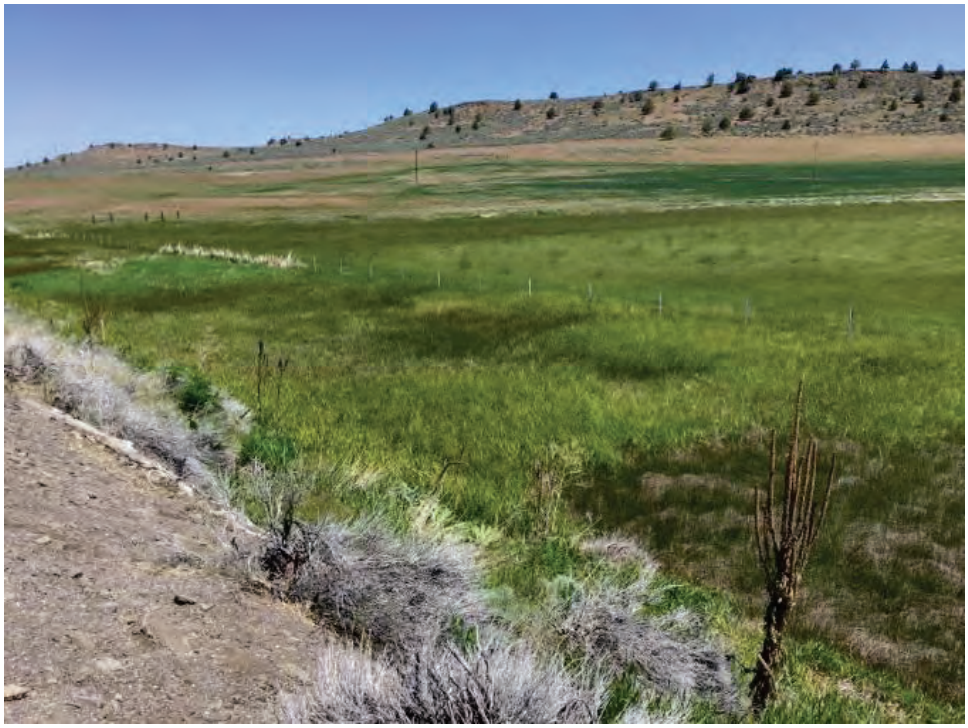
Photograph #: 3 **Comments:** Hillside arnica (*Arnica fulgens*; CRPR 2B.2) plant showing diagnostic brown tufted hairs at the base of the leaf.	
Photograph #: 4 **Comments:** Hillside arnica population in rocky, mesic sagebrush habitat.	

Photograph #: 5 **Comments:** Purple loco weed (*Astragalus agrestis*; CRPR 2B.2) plant.	
Photograph #: 6 **Comments:** Purple loco weed growing in sagebrush (*Artemisia tridentata* ssp. *tridentata*) shrubland community.	

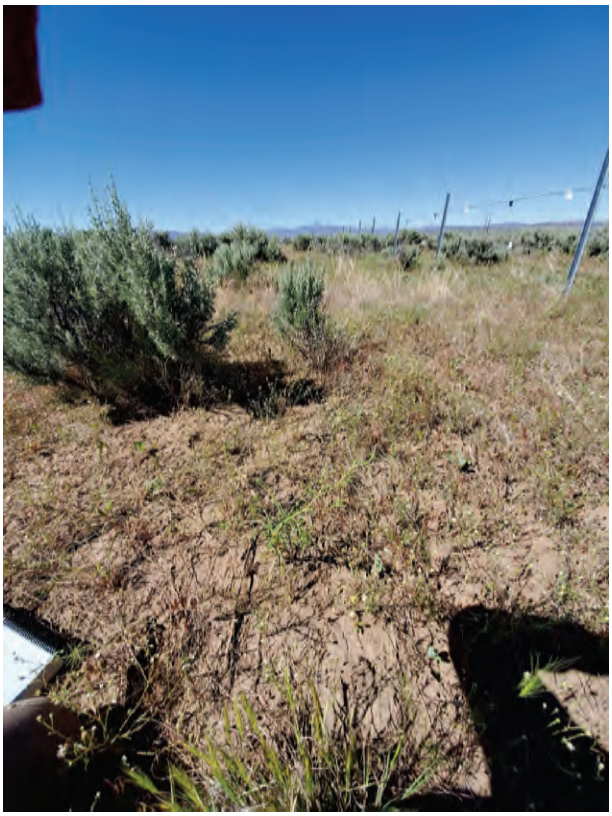
Photograph #: 7 **Comments:** Close up of snake milk vetch (*Astragalus iodanthus* var. *diaphanoides*; CRPR 4.3) inflorescence and leaves.	
Photograph #: 8 **Comments:** Snake milk vetch growing in sagebrush shrubland community.	

Photograph #: 9 **Comments:** Modoc Plateau milk vetch (*Astragalus pulsiferae* var. *coronensis*: CRPR 4.2) individual, growing among rocks.	
Photograph #: 10 **Comments:** Modoc Plateau milk vetch in rocky sagebrush and juniper (*Juniperus occidentalis*) woodland communities.	

Photograph #: 11 **Comments:** Sickle saltbush (*Atriplex gardneri* var. *falcata*; CRPR 2B.2) inflorescence.	
Photograph #: 12 **Comments:** Sickle saltbush growing in open sagebrush habitat.	

Photograph #: 13 **Comments:** Close up of slough sedge (*Carex atherodes*; CRPR 2B.2) inflorescence.	
Photograph #: 14 **Comments:** Slough sedge growing in wetland meadow habitat.	

Photograph #: 15 **Comments:** Close up of Sheldon's sedge (*Carex sheldonii*; CRPR 2B.2) inflorescence.	
Photograph #: 16 **Comments:** Sheldon's sedge growing in wetland meadow habitat.	

Photograph #: 17 **Comments:** Cruciform evening-primrose (*Chylismia claviformis* ssp. *cruciformis*; CRPR 2B.3) inflorescence.	
Photograph #: 18 **Comments:** Cruciform evening-primrose growing in sagebrush habitat alongside fence.	

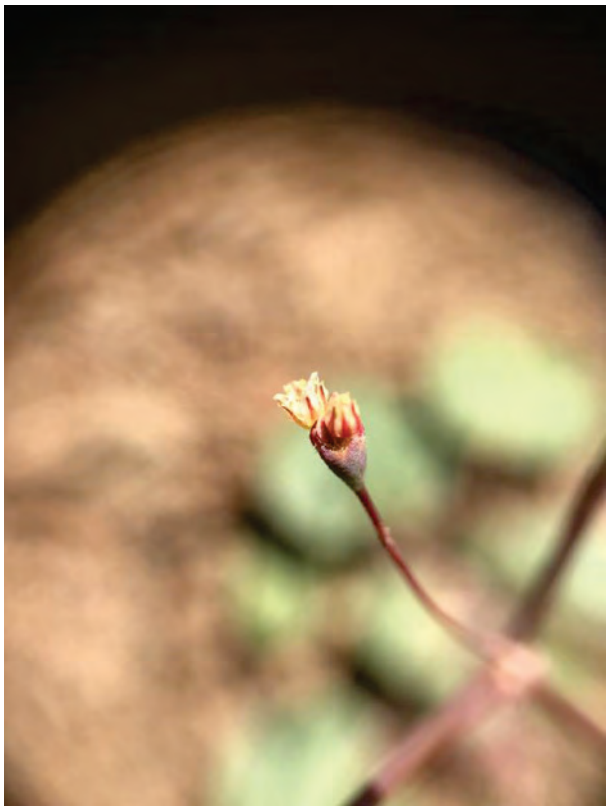
Photograph #: 19 **Comments:** Great Basin downingia (*Downingia laeta*; CRPR 2B.2) plants.	
Photograph #: 20 **Comments:** Great Basin downingia in meadow, seep habitat adjacent to U.S. Route 395 bridge.	

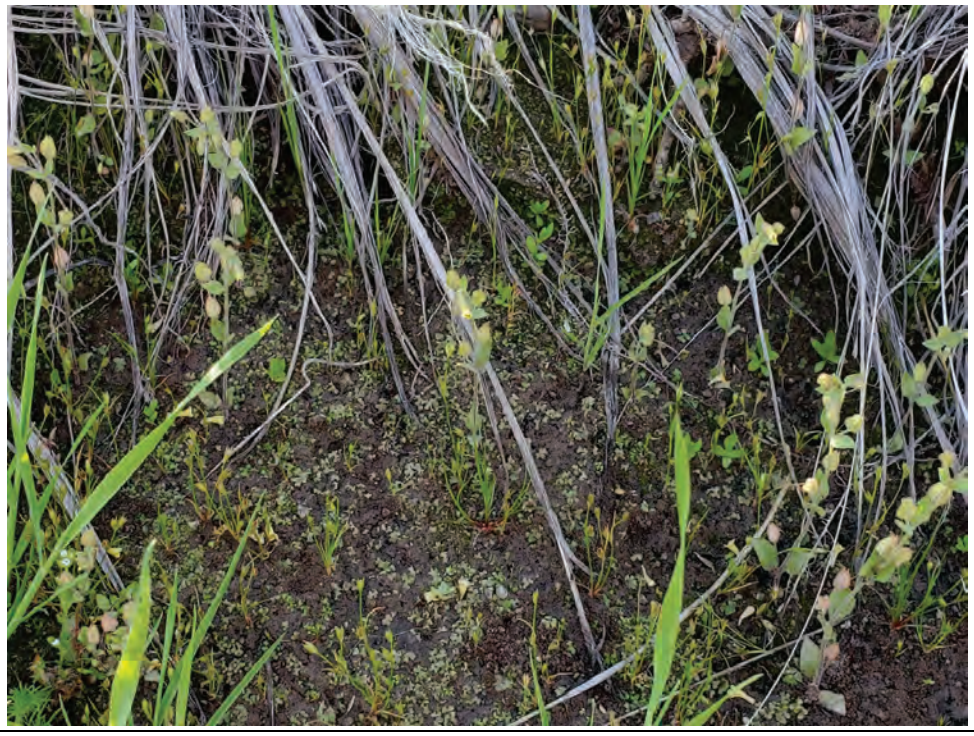
Photograph #: 21 **Comments:** Pine Creek evening-primrose (*Eremothera boothii* ssp. *alyssoides*; CRPR: 4.3) individual in rocky soil.	
Photograph #: 22 **Comments:** Pine Creek evening-primrose growing in open, rocky sagebrush habitat.	

Photograph #: 23 **Comments:** Nevada daisy (*Erigeron eatonii* var. *nevadincola*; CRPR 2B.3).	
Photograph #: 24 **Comments:** Nevada daisy in Great Basin scrub habitat.	

Photograph #: 25 **Comments:** Volcanic daisy (*Erigeron elegantulus*; CRPR 4.3) plant.	
Photograph #: 26 **Comments:** Volcanic daisy growing in Great Basin scrub habitat.	

Photograph #: 27 **Comments:** Close up of Hill buckwheat (*Eriogonum collinum*; CRPR 4.3) inflorescence.	
Photograph #: 28 **Comments:** Hill buckwheat growing in Great Basin scrub habitat.	

Photograph #: 29 **Comments:** Nodding buckwheat (*Eriogonum nutans var. nutans*; CRPR 2B.3)	
Photograph #: 30 **Comments:** Close up of nodding buckwheat inflorescence.	

Photograph #: 31 **Comments:** Ephemeral monkeyflower (*Erythranthe inflatula*; CRPR 1B.2) individuals.	
Photograph #: 32 **Comments:** Ephemeral monkeyflower growing in sagebrush habitat.	

Photograph #: 33 **Comments:** Modoc frasera (*Frasera albicaulis* var. *modocensis*; CRPR 2B.3) inflorescences.	
Photograph #: 34 **Comments:** Modoc frasera growing in sagebrush and grassland habitat.	

Photograph #: 35 **Comments:** Cusick's stickseed (*Hackelia cusickii*; CRPR 4.3) inflorescences.	
Photograph #: 36 **Comments:** Cusick's stickseed in juniper woodland community.	

Photograph #: 37 **Comments:** Close-up of Lemmon's goldflower (*Hymenoxys lemmonii*; CRPR 2B.2) inflorescence.	
Photograph #: 38 **Comments:** Lance-leaved scurf-pea (*Ladeania lanceolata*; CRPR 2B.3).	

Photograph #: 39	
Comment: Lance-leaved scurf-pea inflorescence.	

Photograph #: 40 **Comments:** Rigid pea (*Lathyrus rigidus*; CRPR 2B.2) plant.	
Photograph #: 41 **Comments:** Rigid pea growing in sagebrush habitat.	

Photograph #: 42 **Comments:** Canby's lomatium (*Lomatium canbyi*; CRPR 4.3) plant showing diagnostic tuber shape.	
Photograph #: 43 **Comments:** Canby's lomatium in sagebrush habitat.	

Photograph #: 44	
Comments: Raven's lomatium (*Lomatium ravenii* var. *ravenii*; CRPR 1B.3) inflorescence.	

Photograph #: 45 **Comments:** Raven's lomatium growing in sagebrush habitat.	
Photograph #: 46 **Comments:** Adobe lomatium (*Lomatium roseanum*; CRPR 1B.2) plant.	

Photograph #: 47	
Comments: Adobe lomatium in sagebrush habitat alongside a fence.	

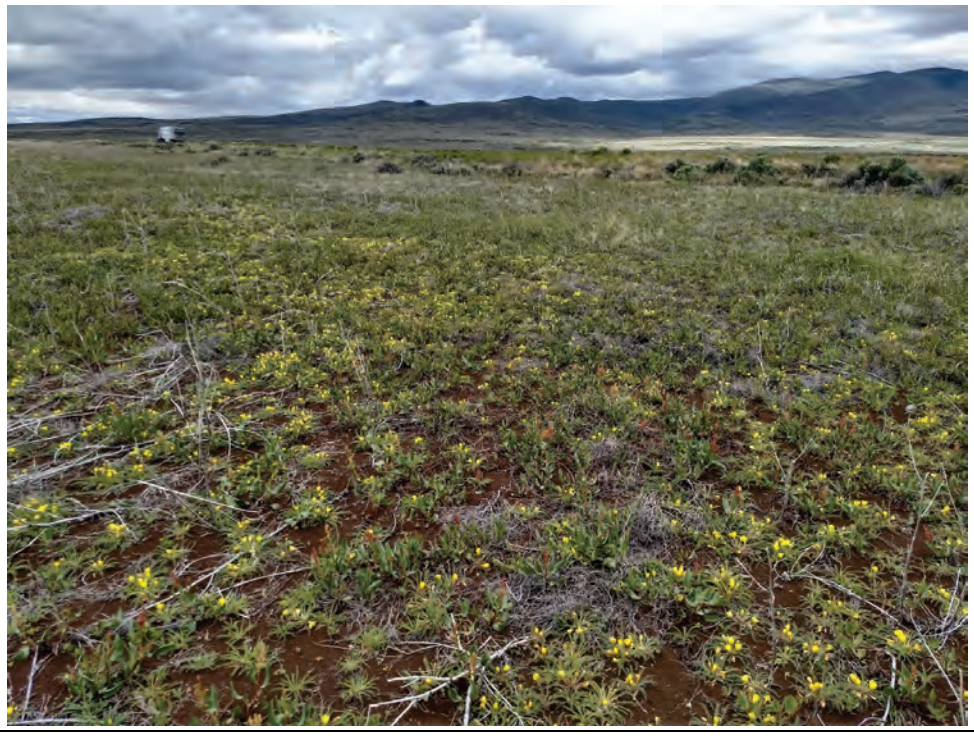
Photograph #: 48	
Comments: Close up of Intermountain lupine (*Lupinus pusillus* var. *intermontanus*; CRPR 2B.3) individual.	

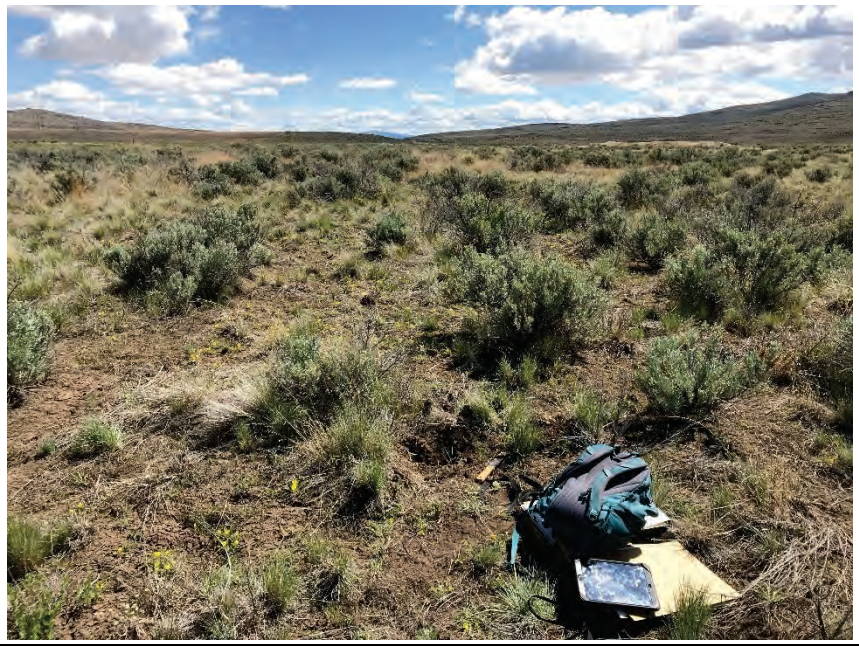
Photograph #: 49	
Comments: Intermountain lupine growing in sagebrush habitat.	

Photograph #: 50 **Comments:** Sagebrush bluebells (*Mertensia oblongifolia* var. *oblongifolia;* CRPR 2B.2).	
Photograph #: 51 **Comments:** Dwarf lousewort (*Pedicularis centranthera*; CRPR 2B.3) plant close-up.	

Photograph #: 52 **Comments:** Dwarf lousewort growing in sagebrush habitat.	
Photograph #: 53 **Comments:** Volcanic beardtongue (*Penstemon sudans*; CRPR 1B.2) plant close-up.	

Photograph #: 54 **Comments:** Volcanic beardtongue growing in open, rocky sagebrush habitat.	
Photograph #: 55 **Comments:** Fremont's polyctenium (*Polyctenium fremontii* var. *fremontii*; CRPR 4.3) plant.	

Photograph #: 56 **Comments:** Fremont's polyctenium growing in a mud flat area.	
Photograph #: 57 **Comments:** William's combleaf (*Polyctenium williamsiae*; CRPR 1B.2) plant.	

Photograph #: 58 **Comments:** William's combleaf in sagebrush habitat.	
Photograph #: 59 **Comments:** Spiny milkwort (*Polygala subspinosa*; CRPR 2B.2) plant.	

Photograph #: 60 **Comments:** Spiny milkwort growing in sagebrush community among cheat-grass.	
Photograph #: 61 **Comments:** Winged dock (*Rumex venosus*; CRPR 2B.3) plants with its diagnostic large perianth lobes.	

Photograph #: 62 **Comments:** Winged dock growing in open, sandy sagebrush habitat.	
Photograph #: 63 **Comments:** Green-flowered prince's plume (*Stanleya viridiflora*; CRPR 2B.3) growing in white ash soils in Great Basin scrub habitat.	

Photograph #: 64 **Comments:** Prairie woundwort (*Stachys pilosa*; CRPR 2B.3) plant.	
Photograph #: 65 **Comments:** Prairie woundwort in wet meadow habitat.	

Photograph #: 66 **Comments:** Woolly stenotus (*Stenotus lanuginosus* var. *lanuginosus*; CRPR 2B.2) plant.	
Photograph #: 67 **Comments:** Woolly stenotus growing in sagebrush habitat adjacent to U.S. Route 395.	

Photograph #: 68 **Comments:** Yarrow leaf thelypodium (*Thelypodium milleflorum*; CRPR 2B.2) inflorescence.	
Photograph #: 69 **Comments:** Yarrow leaf thelypodium in sagebrush habitat.	

Photograph #: 70 **Comments:** Plummer's clover (*Trifolium gymnocarpon* ssp. *plummerae*; CRPR 2B.3) plant close-up.	
Photograph #: 71 **Comments:** Plummer's clover growing in sagebrush habitat.	

Photograph #: 72	
Comments: Golden violet (*Viola purpurea* ssp. *aurea*) individual.	