DRAFT

TLRR: Control-Silver Peak Project

Attachment H.14
Habitat Restoration Plan

Prepared for

Southern California Edison

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Prepared by
Arcadis U.S., Inc.

Applicable Agencies

Bureau of Land Management
United States Forest Service
California Public Utilities Commission

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Acronyms and Abbreviations

ACCC	aluminum conductor composite core
ACSR	aluminum conductor steel reinforced
ADSS	all-dielectric self-supporting
amsl	above mean sea level
BLM	Bureau of Land Management
BLM S	BLM Sensitive species
BMP	best management practice
Cal-IPC	California Invasive Plant Council
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CMA	Conservation and Management Action
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CPUC	California Public Utilities Commission
CRPR	California Rare Plant Rank
CSP	Control – Silver Peak
DI	ductile iron
DRECP	Desert Renewable Energy Conservation Plan
ESA	Environmentally Sensitive Area
FESA	Federal Endangered Species Act
HMMP	Habitat Mitigation and Management Plan
HRP	Habitat Restoration Plan
IPMP	Invasive Plant Management Plan
kV	kilovolt
LADWP	Los Angeles Department of Water and Power
LUPA	Land Use Plan Amendment
LWS	Lightweight Steel
Meer	Mechanical Electrical Equipment Room
NEPA	National Environmental Policy Act
OHGW	overhead groundwire
OHV	off-highway vehicle
OPGW	optical groundwire
PCA	Pest Control Advisor
PEA	Proponent's Environmental Assessment
ROW	Right-of-Way

SCE	Southern California Edison Company
SWPPP	Storm Water Pollution Prevention Plan
TSP	tubular steel pole
USEPA	U.S. Environmental Protection Agency
USFS	U.S. States Forest Service
USFS SCC	U.S. Forest Service Species of Conservation Concern
USFWS	U.S. Fish and Wildlife Service
WEAP	Worker Environmental Awareness Program

1.0 Introduction

The purpose of this Habitat Restoration Plan (HRP) is to detail the habitat restoration activities associated with Southern California Edison's (SCE) Control-Silver Peak (CSP) Project as described by the Proponent's Environmental Assessment (PEA; SCE 2021) and Plan of Development documents. The Plan describes the restoration methods to be implemented on areas temporarily disturbed during execution of the Project and describes the performance goals for restoration.

As part of the CSP Project, SCE has identified a number of biological resources protection measures that it proposes to implement during construction to reduce or avoid impacts; these have been incorporated as project measures in the CSP Project POD document. SCE would conduct the design and construction in accordance with these project measures. The measures contained in sections 2.22.1.1, 2.22.1.2, and 2.22.2.3.1 through -4 of the CSP Project POD are addressed in this HRP.

1.1 Project Overview

Through the CSP Project, SCE will remove existing subtransmission structures, install new subtransmission structures, install telecommunications and system protection equipment, and modify equipment at existing substations.

1.1.1 Segment 1

Segment 1 of the CSP Project is located west of the City of Bishop. Segment 1 is 3.4 miles in length. In Segment 1, the overhead groundwire (OHGW) installed on existing poles along one of the two pole lines found in Segment 1 would be removed and OPGW would be installed on those poles. Segment 1 is located on lands administered by the Bureau of Land Management (BLM) and on lands owned by the Los Angeles Department of Water and Power (LADWP).

1.1.2 Segment 2

Segment 2 of the CSP Project is located northwest of the City of Bishop. Two existing single-circuit pole lines are located in Segment 2. The existing poles and conductor would be removed, and new poles and conductor would be installed along the 1.4-mile length of Segment 2. OPGW would be installed on new poles along one of the pole lines, and OHGW would be installed on new poles along the other pole line. Segment 2 is located on lands owned by LADWP.

1.1.3 Segment 3

Segment 3 runs for approximately 37 miles from northwest of the City of Bishop to the California-Nevada border. Two existing single-circuit pole lines are located in Segment 3; the CSP Project would result in removal of one of the pole lines and rebuilding the remaining pole line from a single-circuit configuration to a double-circuit configuration. The existing poles and conductor would be removed, and new double-circuited-circuit poles and conductor would be installed along the length of Segment 3. OPGW would be installed on new poles. Segment 3 is located on lands administered by the BLM, managed by the United States Forest Service (USFS), on lands owned by LADWP, and on private lands.

1.1.4 Segment 4

Segment 4 is located in the Chalfant Valley between the City of Bishop and the community of Hammil. In Segment 4, two existing poles would be removed and two replacement poles would be

installed. The existing conductor and cable attached to the poles would be transferred to the replacement poles. Insulators and other hardware on adjoining poles may be modified to accommodate the taller replacement poles. Work in Segment 4 would occur on lands administered by the BLM and on lands owned by LADWP.

1.1.5 Segment 5

Segment 5 is located in the Deep Springs Valley. In Segment 5, nine existing poles would be removed and nine replacement poles would be installed. The existing conductor and cable attached to the poles would be transferred to the replacement poles. Insulators and other hardware on adjoining poles may be modified to accommodate the taller replacement poles. Work in Segment 5 would occur on lands administered by the BLM and on private lands.

1.1.6 Control Substation

Control Substation is located at the western end of Segment 1 (at about 37.336, -118.481); it is located on private land. At Control Substation, SCE will install telecommunication equipment on existing rack structures, install cable in new or existing underground cable raceways, and install new or replacement telecommunications infrastructure within existing cabinets, control buildings, or Mechanical and Electrical Equipment Rooms (MEERs). Further, relay settings will be updated.

1.1.7 White Mountain Substation

White Mountain Substation is located in Segment 3 on lands managed by the USFS (at about 37.416, -118.190_. At White Mountain Substation, SCE will disconnect existing conductor from existing positions and connect new conductor to existing positions, and will install new OPGW and OHGW and make minor modifications to the existing terminal racks to accommodate the new OPGW and OHGW. Further, relay settings will be updated.

1.1.8 Fish Lake Valley Metering Station

Fish Lake Valley Metering Station is located at the eastern end of Segment 3 (at about 37.490, -117.867); it is located on land administered by the BLM. At Fish Lake Valley Metering Station, SCE will install telecommunication equipment on existing rack structures, install cable in new or existing underground cable raceways, and install new or replacement telecommunications infrastructure within existing cabinets, control buildings, or Mechanical and Electrical Equipment Rooms (MEERs). Further, relay settings will be updated and a capacitor bank and circuit breaker will be installed.

1.1.9 Zack Substation

Zack Substation is located at the northern end of Segment 4 (at about 37.615, -118.397); it is located on private land. At Zack Substation, relay settings will be updated.

1.2 Project Location

The proposed CSP Project is located within unincorporated Inyo County and unincorporated Mono County. The CSP Project is located on federal lands administered by the United States Bureau of Land Management (BLM) and managed by the United States Forest Service (USFS), as well as on State Lands, on lands owned by the Los Angeles Department of Water and Power (LADWP), and on private property.

2.0 Land Management Plan Summary

Implementation of this HRP will ensure the CSP Project is compliant with the relevant federal land management plans as described in the sections below and as referenced throughout this Plan.

2.1 Bureau of Land Management

2.1.1 BLM Bishop Resource Management Plan

The BLM Bishop Resource Management Plan contains the following Area-Wide Management theme:

> "Manage all activities to assure no net loss of wetlands or riparian habitats. Allow mitigation for impacts to wetlands or riparian habitats to occur outside of the resource area."

The BLM Bishop Resource Management Plan contains the following Area-Wide Decision:

> "Protect and enhance unique or important vegetation communities and wildlife habitats.
>
> - Yearlong Protection of endangered, threatened, candidate, and sensitive plant and animal habitats.
>
> - Yearlong Protection of aspen groves, meadows and riparian areas."

2.1.2 BLM DRECP LUPA Compliance

On lands subject to management per the Desert Renewable Energy Conservation Plan (DRECP) Land Use Plan Amendment (LUPA), habitat restoration activities will comply, as applicable, with the habitat restoration-related Objectives and Conservation Management Action contained in DRECP LUPA; these include:

- Objective 1.1: Conserve focus and BLM Special Status Species habitat, vegetation types, and ecological processes of the Mojave and Sonoran deserts in each ecoregional subarea in the BLM LUPA Decision Area.
- Objective 1.4: Conserve unique landscape features, important landforms, and rare or unique vegetation types identified within the BLM Decision Area, including:
    - Desert riparian and wetland resources in the planning area, including riparian habitat (including microphyll woodlands), desert playas, and seeps/springs
    - Areas of dense Joshua Tree woodland
    - Areas with unique geological activity and/or paleontological interest
    - Rare vegetation type alliances
- LUPA-BIO-7: Where DRECP vegetation types or Focus or BLM Special Status Species habitats may be affected by ground- disturbance and/or vegetation removal during pre-construction, construction, operations, and decommissioning related activities but are not converted by long-term (i.e., more than two years of disturbance, see Glossary of Terms) ground disturbance, restore these areas following the standards, approved by BLM authorized officer, following the most recent BLM policies and procedures for the vegetation community or species habitat disturbance/impacts as appropriate, summarized below:
    - Implement site-specific habitat restoration actions for the areas affected including specifying and using:

        - The appropriate seed (e.g., certified weed- free, native, and locally and genetically appropriate seed)
        - Appropriate soils (e.g., topsoil of the same original type on site or that was previously stored by soil type after being salvaged during excavation and construction activities)
        - Equipment
        - Timing (e.g., appropriate season, sufficient rainfall)
        - Location
        - Success criteria
        - Monitoring measures
        - Contingency measures, relevant for restoration, which includes seeding that follows BLM policy when on BLM administered lands
    - Salvage and relocate cactus, nolina, and yucca from the site prior to disturbance using BLM protocols. To the maximum extent practicable for short-term disturbed areas (see Glossary of Terms), the cactus and yucca will be re-planted back to the original site.
    - Restore and reclaim short-term (i.e. 2 years or less, see Glossary of Terms) disturbed areas, including pipelines, transmission projects, staging areas, and short-term construction-related roads immediately or during the most biologically appropriate season as determined in the activity/project specific environmental analysis and decision, following completion of construction activities to reduce the amount of habitat converted at any one time and promote recovery to natural habitats and vegetation as well as climate refugia and ecosystem services such carbon storage.
- LUPA-BIO-8: Where DRECP vegetation types or Focus or BLM Special Status Species habitats may be affected by ground- disturbance and/or vegetation removal during pre-construction, construction, operations, and decommissioning related activities but are not converted by long-term (i.e., more than two years of disturbance, see Glossary of Terms) ground disturbance, restore these areas following the standards, approved by BLM authorized officer, following the most recent BLM policies and procedures for the vegetation community or species habitat disturbance/impacts as appropriate, summarized below:
    - Implement site-specific habitat restoration actions for the areas affected including specifying and using:
    - The appropriate seed (e.g., certified weed- free, native, and locally and genetically appropriate seed)
    - Appropriate soils (e.g., topsoil of the same original type on site or that was previously stored by soil type after being salvaged during excavation and construction activities)
    - Equipment
    - Timing (e.g., appropriate season, sufficient rainfall)
    - Location
    - Success criteria
    - Monitoring measures
    - Contingency measures, relevant for restoration, which includes seeding that follows BLM policy when on BLM administered lands.
- Restore and reclaim short-term (i.e. 2 years or less, see Glossary of Terms) disturbed areas, including pipelines, transmission projects, staging areas, and short-term construction-related roads immediately or during the most biologically appropriate season as determined in the activity/project specific environmental analysis and decision, following

completion of construction activities to reduce the amount of habitat converted at any one time and promote recovery to natural habitats and vegetation as well as climate refugia and ecosystem services such carbon storage,

- LUPA-BIO-VEG-1: Management of cactus, yucca, and other succulents will adhere to current up-to-date BLM policy.
- LUPA-BIO-VEG-2: Promote appropriate levels of dead and downed wood on the ground, outside of campground areas, to provide wildlife habitat, seed beds for vegetation establishment, and reduce soil erosion, as determined appropriate on an activity-specific basis.
- LUPA-BIO-VEG-4: Within the Bishop Field Office area, provide yearlong protection of endangered, threatened, candidate, and sensitive plant and animal habitats. Yearlong protection means that no discretionary actions which would adversely affect target resources will be allowed.
- LUPA-BIO-VEG-5: All activities will follow applicable BLM state and national regulations and policies for salvage and transplant of cactus, yucca, other succulents, and BLM Sensitive plants.
- CONS-BIO-PLANT-1: Occurrences of plant Focus and BLM Special Status Species, including in designated transmission corridors, will be avoided, to the maximum extent practicable (see “unavoidable impacts to resources” in the Glossary of Terms).

2.2 United States Forest Service

2.2.1 Inyo National Forest Land Management Plan

Restoration activities performed under the CSP Project will comply with the goals and desired conditions of the USFS INF LMP, including:

- SPEC-FW-STD 01 Design features, mitigation, and project timing considerations are incorporated into projects that may affect occupied habitat for at-risk species.
- SPEC-FW-STD 02 Avoid or mitigate impacts on known and unknown occurrences of at-risk plants and lichens that would limit their persistence or recovery in the plan area.
- Forestwide Components for Animal and Plant Species, Potential Management Approaches:
    - Incorporate the conservation of at-risk species into all program areas at appropriate times and scales, including but not limited to recreation, fire and fuels, vegetation management, minerals, range, engineering, and special uses.
    - Use the following example resource protection measures, or others as appropriate, to avoid or mitigate impacts on suitable habitat for at-risk plants and lichens (see SPEC-FW-STD 02):
        - Following temporary disturbance in suitable habitat, seed with genetically appropriate native species.
- SPEC-SG-STD 01 Habitat restoration projects for the sage-grouse shall be designed to meet one or more of the following habitat needs:
    - a. Promote the maintenance of extensive, intact sagebrush communities;
    - b. Limit the expansion or dominance of invasive species, including cheatgrass, and the expansion of pine species, including pinyon-juniper and Jeffrey pine

    - c. Maintain or improve soil site stability, hydrologic function, and biological integrity; and
    - d. Enhance the native plant community.
- SPEC-SG-STD 02 Habitat restoration projects for the sage-grouse
- SPEC-SG-STD 03 Within sage-grouse habitat, ensure that habitat restoration activities, vegetation treatments, or other authorized uses on the national forest, maintain or move toward vegetation desired conditions for sage-grouse. Short-term (1 to 10 year) impacts are allowed to deviate from these habitat standards, if the long-term (10 to 30 years) project objective is to achieve desired conditions.
- SPEC-SG-STD 04 Mitigate long-term negative impacts to sage-grouse habitat from activities, to the extent practicable and within agency authority.
- SPEC-SG-STD 05 Require site-specific project mitigation if needed to insure no net loss of habitat within the Inyo National Forest due to project disturbance.
- SPEC-SG-STD 06: Establish a limited operating period for the sage-grouse breeding season (which current best available science indicates is March 1 to May 15) within suitable breeding habitat for any activities that would cause disturbances during this time. These dates can be adjusted based on current nesting conditions or risk assessment.
- SPEC-SG-STD 07: Establish a limited operating period for the sage-grouse nesting season (which current best available science indicates is May 1 to June 15) within suitable nesting habitat for any activities that would lead to disturbances during this time. These dates can be adjusted based on current nesting conditions or risk assessment.
- MA-RCA-STD 01: Ensure that management activities do not adversely affect water temperatures necessary for local aquatic- and riparian-dependent species assemblages, unless vegetation removal or other actions are required for safety or mandated by state and federal regulations (such as vegetation clearances around utility lines).
- MA-RCA-STD 02: Limit pesticide applications to cases where project-level analysis indicates that pesticide applications are consistent with riparian conservation area desired conditions.
- MA-RCA-STD 03: Prohibit storage of fuels and other toxic materials except at designated administrative sites and sites covered by special use authorization. Prohibit refueling within riparian conservation areas except when there are no other alternatives.
- MA-RCA-STD 04: Ensure that culverts or other stream crossings do not create barriers to upstream or downstream passage for aquatic-dependent species, except where desired to protect native species.
- MA-RCA-STD 05: All new or replaced permanent stream crossings shall accommodate at least the 100-year flood, its bedload, and debris. Estimates for 100-year flood potential will reflect the best available science regarding potential effects of climate change.
- MA-RCA-STD 07: Prevent disturbance to streambanks and shorelines of lakes and ponds (caused by resource management activities, or factors such as off-highway vehicles or dispersed recreation) from exceeding 20 percent of stream reach, or 20 percent of natural lake and pond shorelines. Disturbance includes bank sloughing, chiseling, trampling, and other means of exposing bare soil or cutting plant roots. This standard may not be met within Destination Recreation Management Areas, sites authorized under special use

permits, and designated off-highway vehicle routes, but activities will be designed and managed to reduce the percent of impact to the extent feasible.

- MA-RCA-STD 09: Avoid or mitigate ground-disturbing activities (e.g. trampling from livestock, pack stock, wheeled vehicles, people, and roads) that adversely affect hydrologic processes that maintain water flow, water quality, or water temperature critical to sustaining fen ecosystems and the plant species that depend on these ecosystems.
- MA-RCA-STD 13: Designate equipment exclusion zones within riparian conservation areas when designing projects. The default is half of the riparian conservation area width (150 feet for perennial streams, 75 feet for intermittent streams):

  a. These widths may be adjusted on a project-by-project basis based on geomorphology, slope, or soil conditions, as long as best management practices and other plan direction are met. Adjustments may be made only after consultation with experts in aquatic ecology, soils, and/or hydrology.

  b. If further mechanical incursion is warranted, use methods that limit soil disturbance within the riparian conservation area, such as low ground pressure equipment, helicopters, over-the-snow logging, extra ground cover requirements, or other soil protective actions to achieve desired conditions consistent with best management practices and other plan direction.

  c. When vegetation is treated in the near stream area, meet the needs for coarse wood in stream channels where possible.
- MA-RCA-STD 16: Avoid construction of new skid trails or temporary roads for access into riparian conservation areas, unless it is the only feasible option to conduct restoration activities for protection and improvement of riparian conservation areas.
- INV-FW-GDL-02 Hay, straw, and other crop-related forage or mulch products used for animal feed or bedding, soil stabilization and land rehabilitation, or other purposes should be certified by California or Nevada or the North American Invasive Species Management Association (NAISMA) standards as being weed-free to prevent unintentional introduction of invasive species. Deviations from this guideline may be approved on a case-by-case basis when certified weed-free material is not reasonably available, in consultation with the Inyo National Forest Invasive Species Coordinator.
- INV-FW-GDL-03 To the extent feasible, plant and seed materials used for revegetation, restoration, and rehabilitation projects should be native, genetically appropriate to the site, and capable of becoming established to restore natural species composition and ecosystem function.
- MA-RCA-GDL 02: Minimize impacts from roads, trails, off-highway-vehicle trails, staging areas, developed recreation sites, dispersed campgrounds, special use permits, grazing permits, and day use sites that have been identified as contributing to degradation of water quality or habitat for aquatic and riparian-dependent species.

In addition, INF staff have mandated that each area temporarily disturbed by construction of the CSP Project be returned to its pre-construction condition.

2.3 Agency Roles and Responsibilities

This Plan has been submitted to the BLM, CPUC, and USFS for review and approval. A final version of the Plan will be provided to the BLM, CPUC, and USFS with comments incorporated prior to the start of construction.

3.0 Summary of Maximum Potential Impacts to Vegetation Communities, Native Trees, Special-status Plants, and Wetlands and Jurisdictional Features

Project impacts are classified as temporary or permanent. Temporary impacts result from the removal of existing subtransmission structures, installation of replacement structures, and the establishment of temporary construction areas such as pulling and tensioning sites. Permanent impacts result from the rehabilitation/upgrading of existing access and spur roads, which may include widening the existing access and spur roads to meet SCEs standards for construction, and from the installation of replacement subtransmission structures. “Drive and crush” methods will be implemented to the extent feasible to preserve native vegetation and native seed banks. “Drive and crush” may include overland travel over existing low-lying vegetation, but may also incorporate trimming vegetation to ground level with root systems intact to facilitate vehicular access and flagging of special-status plant species and cacti for avoidance.

Biological surveys of the CSP Project alignment were conducted in 2017 and 2018, followed by surveys conducted in 2022 of native trees within the alignment, as well as vegetation characterization and tree and special-status species surveys within potential laydown yards (Arcadis 2019a,b, 2022). The survey area covered approximately 1,980.8 acres. Further rare plant surveys are planned for 2023; this Plan will be updated as appropriate with data from those surveys.

The CSP Project will potentially affect approximately 115.3 acres of vegetation and other land uses resulting from maximum anticipated temporary and permanent impacts. A maximum of 98.4 acres of native vegetation and 10.4 acres of other land uses (developed, active agriculture, open water, disturbed, etc.) will be subject to temporary impacts, for a total of 108.8 acres of temporary impacts. Anticipated maximum permanent impacts include 6.4 acres of native vegetation and 0.1 acres of other land uses, for a total of 6.5 acres of permanent impacts. The exact acreage of impacts will be recalculated when construction activities have been completed.

Summaries of the potential disturbances to vegetation communities, special status natural communities, native trees, special status plants and wildlife, critical habitat, regulated waters of the US, waters of the state, jurisdictional streambeds, and wetlands are provided in Tables 3-1 through 3-6. Each table consists of a set of several sub-tables, with the total numbers for the Project presented first, followed by numbers that apply to each of five land management categories. The five land management categories include BLM Bishop Office, BLM Ridgecrest Office, USFS INF, LADWP, and private lands.

For BLM Bishop Office, see Tables 3-1b, 3-2b, 3-3b, 3-4b, and 3-5b.

For BLM Ridgecrest Office, see Tables 3-1c, 3-2c, 3-3c, 3-4c, and 3-5c.

For USFS INF, see Tables 3-1d, 3-2d, 3-3d, 3-4d, and 3-5d-i and 3-5d-ii.

For LADWP, see Tables, see Tables 3-1e, 3-2e, 3-3e, 3-4e, and 3-5e.

For private lands, see Tables 3-1f, 3-2-f, 3-3f, 3-4f, and 3-5f.

In all cases, the listed acres of impacts or numbers representing potential loss within potential Project work areas represent the maximum possible extent of Project work. In practice, due to a combination of impact avoidance methods, helicopter use, and careful siting of Project work activities, actual potential impacts or loss will be reduced.

3.1 Maximum Potential Impacts to Vegetation Communities

Thirty-six alliances and 55 associations were identified within the CSP Project alignment during the 2017, 2018, and 2022 surveys; the identified alliances include 5 woodland alliances, 24 shrubland alliances, and 7 herbaceous alliances.

Tables 3-1a through Tables 3-1f summarize the mapped acreage of each alliance and association on the CSP Project alignment; the anticipated maximum temporary and permanent impacts for each alliance and association in proposed Project work areas; and the CDFW California State Rarity Ranking for each alliance and association (CDFW 2022). Sensitive natural communities are treated by CDFW as alliances or associations with “threat” ranks of S3 or higher (S1, S2, S3), whereas S4 and S5 rankings are not designated as sensitive or threatened (CDFW 2022). In addition, the updated California Natural Communities List (CDFW 2022) designates sensitive associations without always assigning a threat ranking. Six additional land use types were also mapped that address agricultural and landscape plantings, open water, unvegetated wash or river bottom, developed areas, and disturbed areas. The acreage of these six land use types are treated separately from vegetation alliances and associations.

In all cases, the listed impacts within potential Project work areas represent the maximum possible extent of Project work. In practice, due to a combination of impact avoidance methods, helicopter use, and careful siting of Project work activities, actual potential impacts will be reduced.

3.1.1 Vegetation Community Impacts—All Lands

Table 3-1a provides a summary of mapped acreage of each alliance and association on all lands within the CSP Project alignment and the anticipated maximum temporary and permanent impacts for each alliance and association in proposed Project work areas.

Table 3-1a Summary of Maximum Potential Impacts to Vegetation Communities on all Lands within the CSP Project Alignment

Vegetation Alliance Common Name	Vegetation Alliance Scientific Name	Vegetation Association	Total Area Mapped on CSP Project Alignment (acres)	Anticipated Maximum Temporary Impacts in Proposed Project Work Areas (acres)	Anticipated Maximum Permanent Impacts in Proposed Project Work Areas (acres)	California State Rarity Ranking
Woodland Forest Vegetation						
Bristlecone Pine Woodland	*Pinus longaeva* Woodland Alliance	*Pinus longaeva* Association	22.9	0.6	0.4	**S2**
Aspen Groves	*Populus tremuloides* Woodland Alliance	*Populus tremuloides – Pinus longaeva* Provisional Association	3.7	0.2	0.3	**S3**
Limber Pine Woodland	*Pinus flexilis* Woodland Alliance	*Pinus flexilis – Pinus longaeva* Provisional Association	2.3	0.1	0.1	**S3**
Goodding's Willow – Red Willow Riparian Woodland and Forest	*Salix gooddingii – Salix laevigata* Woodland Alliance	*Salix laevigata* Association	0.3	0.04	0.0	**S3**
Singleleaf Pinyon Woodland	*Pinus monophylla* – (*Juniperus osteosperma*) Woodland Alliance	*Pinus monophylla* – (*Juniperus osteosperma*) / *Artemisia tridentata* subsp. *vaseyana* Association	185.6	20.0	5.2	S4
		Total Acres Woodland Vegetation	***214.8***	***20.8***	***6.0***	***NA***
Shrubland Vegetation						
Water Birch Thicket	*Betula occidentalis* Shrubland Alliance	*Betula occidentalis* / *Salix* spp. Association	1.6	0.09	0.1	**S2**
Fremont's and Nevada Smokebush Scrub	*Psorothamnus fremontii – Psorothamnus polydenius* Shrubland Alliance	*Psorothamnus polydenius – Atriplex confertifolia – Tetradymia* spp. Association	2.7	0.0	0.0	**S3**
		Psorothamnus polydenius – (*Psorothamnus arborescens*) Association	126.7	16.7	0.5	**S3**
		Sarcobatus baileyi Provisional Association	10.9	0.0	0.0	**S3**
Red-osier dogwood – Interior rose – Currant Thickets	*Cornus sericea – Rosa woodsii – Ribes* spp. Shrubland Alliance	*Rosa woodsii* Association	2.7	0.4	0.05	**S3**

Vegetation Alliance Common Name	Vegetation Alliance Scientific Name	Vegetation Association	Total Area Mapped on CSP Project Alignment (acres)	Anticipated Maximum Temporary Impacts in Proposed Project Work Areas (acres)	Anticipated Maximum Permanent Impacts in Proposed Project Work Areas (acres)	California State Rarity Ranking
Spiny Menodora Scrub	*Menodora spinescens* Shrubland Alliance	*Menodora spinescens* – *Atriplex confertifolia* Association	7.5	0.3	0.09	**S3**
		Menodora spinescens – (*Ephedra nevadensis*) Association	1.9	0.8	0.07	**S3**
Utah Serviceberry – Birch Leaf Mountain Mahogany – Small Leaf Mountain Mahogany Scrub	*Amelanchier utahensis* – *Cercocarpus montanus* – *Cercocarpus intricatus* Shrubland Alliance	*Cercocarpus intricatus* Association	3.8	0.4	0.1	S3
		Philadelphus microphyllus var. *microphyllus* Provisional Association	2.0	0.1	0.0	S3
Winterfat Scrubland	*Krascheninnikovia lanata* Shrubland Alliance	*Krascheninnikovia lanata* Association	5.6	2.8	0.05	S3
Greasewood Scrub	*Sarcobatus vermiculatus* Shrubland Alliance	*Sarcobatus vermiculatus* Association	95.5	3.7	0.6	S3S4
		Sarcobatus vermiculatus – *Atriplex confertifolia* Association	5.2	0.0	0.0	S3S4
Curl Leaf Mountain-mahogany Scrub	*Cercocarpus ledifolius* Shrubland Alliance	*Cercocarpus ledifolius* – *Artemisia tridentata* subsp. *vaseyana* Association	25.0	2.2	1.0	S4, **Yes[2]**
Antelope Bitterbrush – Big Sagebrush Scrub	*Purshia tridentata* – *Artemisia tridentata* Shrubland Alliance	*Purshia glandulosa* Association	19.4	1.6	0.3	S4, **Yes[2]**
Arroyo Willow Thickets	*Salix lasiolepis* Shrubland Alliance	*Salix lasiolepis* Association	53.0	5.7	1.0	S4, **Yes[2]**
		Salix lasiolepis / *Rosa woodsii* / mixed herbs Association	0.5	0.08	0.008	S4, **Yes[2]**
Blackbrush Scrub	*Coleogyne ramosissima* Shrubland Alliance	*Coleogyne ramosissima* Association	13.1	1.2	0.0	S4, **Yes[2]**
Allscale Scrub	*Atriplex polycarpa* Shrubland Alliance	*Atriplex polycarpa* Association	21.0	1.0	0.3	S4
		Atriplex polycarpa – *Psorothamnus arborescens* Provisional Association	1.6	0.0	0.0	S4

Vegetation Alliance Common Name	Vegetation Alliance Scientific Name	Vegetation Association	Total Area Mapped on CSP Project Alignment (acres)	Anticipated Maximum Temporary Impacts in Proposed Project Work Areas (acres)	Anticipated Maximum Permanent Impacts in Proposed Project Work Areas (acres)	California State Rarity Ranking
Cheesebush – Sweetbush Scrub	*Ambrosia salsola – Bebbia juncea* Shrubland Alliance	*Ambrosia salsola* Association	87.6	7.0	1.0	S4
		Ambrosia salsola – Atriplex canescens Association	23.5	2.2	0.6	S4
		Ambrosia salsola – Atriplex confertifolia Association	1.5	0.02	0.03	S4
Fourwing Saltbush Scrub	*Atriplex canescens* Shrubland Alliance	*Atriplex canescens* Association	78.9	7.6	1.0	S4
		Atriplex canescens Desert Wash Association	8.2	0.0	0.0	S4
		Atriplex canescens – Psorothamnus arborescens Provisional Association	0.6	0.09	0.04	S4, **Yes[2]**
		Atriplex canescens – Krascheninnikovia lanata Association	5.2	5.1	0.0	S4
		Atriplex canescens / herbaceous Association	5.1	5.0	0.0	S4, **Yes[2]**
Mormon Tea Scrub	*Ephedra viridis* Shrubland Alliance	*Ephedra viridis* Association	3.3	3.2	0.0	S4
Mountain Big Sagebrush Scrub	*Artemisia tridentata* subsp. *vaseyana* Shrubland Alliance	*Artemisia tridentata* subsp. *vaseyana* Association	429.9	59.0	11.7	S4
		Artemisia tridentata subsp. *vaseyana – Purshia tridentata / Festuca idahoensis* Association	8.4	0.3	0.0	S4
		Artemisia tridentata subsp. *vaseyana – Ephedra viridis* Association	0.9	0.7	0.0	S4
Needleleaf Rabbitbrush Scrub	*Ericameria teretifolia* Shrubland Alliance	*Ericameria teretifolia* Association	24.3	1.3	0.3	S4
Nevada Joint fir - Anderson's Boxthorn - Spiny Hopsage Scrub	*Ephedra nevadensis – Lycium andersonii – Grayia spinosa* Shrubland Alliance	*Ephedra nevadensis* Provisional Association	118.5	15.0	1.8	S4
		Ephedra nevadensis - Psorothamnus arborescens Provisional Association	3.1	0.0	0.0	S4

Vegetation Alliance Common Name	Vegetation Alliance Scientific Name	Vegetation Association	Total Area Mapped on CSP Project Alignment (acres)	Anticipated Maximum Temporary Impacts in Proposed Project Work Areas (acres)	Anticipated Maximum Permanent Impacts in Proposed Project Work Areas (acres)	California State Rarity Ranking
Quailbush Scrub	*Atriplex lentiformis* Shrubland Alliance	*Atriplex lentiformis* Association	51.0	3.6	0.5	S4
		Atriplex lentiformis - Ericameria nauseosa Provisional Association	2.5	0.0	0.0	S4
Sandbar Willow Thickets	*Salix exigua* Shrubland Alliance	*Salix exigua* Association	35.1	3.7	0.9	S4
		Salix exigua – (*Salix gooddingii*) Provisional Association	1.9	0.0	0.0	S4
Shadscale Scrub	*Atriplex confertifolia* Shrubland Alliance	*Atriplex confertifolia* Great Basin Association	58.5	2.4	0.2	S4
		Atriplex confertifolia – Ephedra nevadensis Association	3.3	0.4	0.0	S4
		Atriplex confertifolia – Krascheninnikovia lanata Association	17.8	2.0	0.3	**Yes[2]**
		Atriplex confertifolia – Psorothamnus arborescens Provisional Association	12.6	0.1	0.1	**Yes[2]**
Big Sagebrush Scrub	*Artemisia tridentata* Shrubland Alliance	*Artemisia tridentata* Association	8.3	1.4	0.4	S5
California Buckwheat Scrub	*Eriogonum fasciculatum* Shrubland Alliance	*Eriogonum fasciculatum* Association	12.3	1.7	0.5	S5
Rubber Rabbitbrush Scrub	*Ericameria nauseosa* Shrubland Alliance	*Ericameria nauseosa* Association	120.9	15.8	1.2	S5
		Total Acres Shrubland Vegetation	***1,523.0***	***175.2***	***24.8***	***NA***
Herbaceous Vegetation						
Alkali Sacaton – Scratchgrass – Alkali Cordgrass Alkaline Wet Meadow	*Sporobolus airoides – Muhlenbergia asperifolia – Spartina gracilis* Herbaceous Alliance	*Muhlenbergia asperifolia – Distichlis spicata* Provisional Association	6.1	0.8	0.1	**S2**
Yerba Mansa – Nuttall's Sunflower – Nevada Goldenrod Alkaline Wet Meadows	*Anemopsis californica – Helianthus nuttallii – Solidago spectabilis* Herbaceous Alliance	*Anemopsis californica* Association	0.07	0.002	0.0	**S2**

Vegetation Alliance Common Name	Vegetation Alliance Scientific Name	Vegetation Association	Total Area Mapped on CSP Project Alignment (acres)	Anticipated Maximum Temporary Impacts in Proposed Project Work Areas (acres)	Anticipated Maximum Permanent Impacts in Proposed Project Work Areas (acres)	California State Rarity Ranking
Ashy Ryegrass – Creeping Wildrye Turfs	*Leymus cinereus – Leymus triticoides* Herbaceous Alliance	*Leymus triticoides* Association	6.2	0.8	0.2	**S3**
Hardstem and California Bulrush Marshes	*Schoenoplectus* (*acutus, californicus*) Herbaceous Alliance	*Schoenoplectus acutus* Association	0.2	0.0	0.0	**S3**S4, **Yes[2]**
Salt Grass Flats	*Distichlis spicata* Herbaceous Alliance	*Distichlis spicata* Association	2.5	0.3	0.05	S4
		Distichlis spicata – annual grasses Association	0.5	0.002	0.0	S4
Baltic and Mexican Rush Marshes	*Juncus arcticus* (var. *balticus, mexicanus*) Herbaceous Alliance	*Juncus arcticus* var. *balticus* – (var. *mexicanus*) Association	1.5	0.2	0.1	S4
Wild Tarragon Patches	*Artemisia dracunculus* Herbaceous Alliance	*Artemisia dracunculus* Association	0.2	0.2	0.0	S4
Cattail Marshes	*Typha* (*angustifolia, domingensis, latifolia*) Herbaceous Alliance	*Typha (latifolia, angustifolia)* Association	0.3	0.0	0.0	S5
		Phragmites australis subsp. *americanus* Provisional Association	0.6	0.009	0.0	S5, **Yes[2]**
		Total Acres Herbaceous Vegetation	***18.1***	***2.3***	***0.5***	***NA***
		Total Acres Native Vegetation	***1,756.0***	***198.4***	***31.3***	***NA***
		Total Acres Non-Native Vegetation	***0.0***	***0.0***	***0.0***	***NA***
		Total Acres All Vegetation	***1,756.0***	***198.4***	***31.3***	***NA***
		Total Acres of Sensitive Vegetation	***455.6***	***46.0***	***5.5***	***Yes***
Active Agriculture			18.3	2.3	0.3	None
Ornamental/Landscaped (lawns, gardens)			0.9	0.06	0.0	None
Open Water (ponds, lakes, streams, rivers)			1.1	0.08	0.01	None
Developed (towers, roads, etc.)			200.5	42.7	3.9	None

Vegetation Alliance Common Name	Vegetation Alliance Scientific Name	Vegetation Association	Total Area Mapped on CSP Project Alignment (acres)	Anticipated Maximum Temporary Impacts in Proposed Project Work Areas (acres)	Anticipated Maximum Permanent Impacts in Proposed Project Work Areas (acres)	California State Rarity Ranking
Disturbed (cleared area supporting ruderal vegetation, if any)			5.2	2.7	0.0	None
Unvegetated Wash or River Bottom			0.5	0.04	0.006	None
		Total Mapped Acres[2]	***1,982.4***	***246.3***	***35.5***	

Notes:
Sensitive Alliances and Associations are indicated in **Bold**
1. Alliance is not sensitive; however, the association is included as a Sensitive Association on 2022 CDFW California Sensitive Natural Communities list
2. Total mapped acres between sub-tables may not sum to grand total on Table 3-1a due to rounding errors
Alliance Rarity Rankings (CDFW 2022, https://wildlife.ca.gov/Data/VegCAMP/Natural-Communities/Background):
S1: Fewer than 6 viable occurrences statewide and/or up to 518 hectares
S2: 6-20 viable occurrences statewide and/or 518-2,590 hectares
S3: 21-100 viable occurrences statewide and/or 2,590-12,950 hectares
Additional Threat Ranks:
0.1: Very threatened 0.2: Threatened 0.3: No current threat known

3.1.2 Vegetation Community Impacts—BLM Bishop Field Office

Table 3-1b provides a summary of mapped acreage of each alliance and association on all lands within the CSP Project alignment and the anticipated maximum temporary and permanent impacts for each alliance and association in proposed Project work areas.

Table 3-1b Summary of Maximum Potential Impacts to Vegetation Communities on Lands Managed by Bishop BLM Office within the CSP Project Alignment

Vegetation Alliance Common Name	Vegetation Alliance Scientific Name	Vegetation Association	Total Area Mapped on CSP Project Alignment (acres)	Anticipated Maximum Temporary Impacts in Proposed Project Work Areas (acres)	Anticipated Maximum Permanent Impacts in Proposed Project Work Areas (acres)	California State Rarity Ranking
Woodland Forest Vegetation						
Bristlecone Pine Woodland	*Pinus longaeva* Woodland Alliance	*Pinus longaeva* Association	0.0	0.0	0.0	**S2**
Aspen Groves	*Populus tremuloides* Woodland Alliance	*Populus tremuloides – Pinus longaeva* Provisional Association	0.0	0.0	0.0	**S3**
Limber Pine Woodland	*Pinus flexilis* Woodland Alliance	*Pinus flexilis – Pinus longaeva* Provisional Association	0.0	0.0	0.0	**S3**
Goodding's Willow – Red Willow Riparian Woodland and Forest	*Salix gooddingii – Salix laevigata* Woodland Alliance	*Salix laevigata* Association	0.0	0.0	0.0	**S3**
Singleleaf Pinyon Woodland	*Pinus monophylla* – (*Juniperus osteosperma*) Woodland Alliance	*Pinus monophylla* – (*Juniperus osteosperma*) / *Artemisia tridentata* subsp. *vaseyana* Association	0.0	0.0	0.0	S4
		Total Acres Woodland Vegetation	***0.0***	***0.0***	***0.0***	***NA***
Water Birch Thicket	*Betula occidentalis* Shrubland Alliance	*Betula occidentalis* / *Salix* spp. Association	0.0	0.0	0.0	**S2**
Fremont's and Nevada Smokebush Scrub	*Psorothamnus fremontii – Psorothamnus polydenius* Shrubland Alliance	*Psorothamnus polydenius – Atriplex confertifolia – Tetradymia* spp. Association	2.7	0.0	0.0	**S3**
		Psorothamnus polydenius – (*Psorothamnus arborescens*) Association	55.6	2.2	0.1	**S3**
		Sarcobatus baileyi Provisional Association	8.4	0.0	0.0	**S3**
Red-osier dogwood – Interior rose – Currant Thickets	*Cornus sericea – Rosa woodsii – Ribes* spp. Shrubland Alliance	*Rosa woodsii* Association	0.0	0.0	0.0	**S3**
Spiny Menodora Scrub	*Menodora spinescens* Shrubland Alliance	*Menodora spinescens – Atriplex confertifolia* Association	1.2	0.0	0.0	**S3**

Vegetation Alliance Common Name	Vegetation Alliance Scientific Name	Vegetation Association	Total Area Mapped on CSP Project Alignment (acres)	Anticipated Maximum Temporary Impacts in Proposed Project Work Areas (acres)	Anticipated Maximum Permanent Impacts in Proposed Project Work Areas (acres)	California State Rarity Ranking
		Menodora spinescens – (*Ephedra nevadensis*) Association	0.0	0.0	0.0	**S3**
Utah Serviceberry – Birch Leaf Mountain Mahogany – Small Leaf Mountain Mahogany Scrub	*Amelanchier utahensis – Cercocarpus montanus – Cercocarpus intricatus* Shrubland Alliance	*Cercocarpus intricatus* Association	0.0	0.0	0.0	**S3**
		Philadelphus microphyllus var. *microphyllus* Provisional Association	0.0	0.0	0.0	**S3**
Winterfat Scrubland	*Krascheninnikovia lanata* Shrubland Alliance	*Krascheninnikovia lanata* Association	0.0	0.0	0.0	**S3**
Greasewood Scrub	*Sarcobatus vermiculatus* Shrubland Alliance	*Sarcobatus vermiculatus* Association	0.0	0.0	0.0	**S3**S4
		Sarcobatus vermiculatus – Atriplex confertifolia Association	0.0	0.0	0.0	**S3**S4
Curl Leaf Mountain-mahogany Scrub	*Cercocarpus ledifolius* Shrubland Alliance	*Cercocarpus ledifolius – Artemisia tridentata* subsp. *vaseyana* Association	0.0	0.0	0.0	S4, **Yes[2]**
Antelope Bitterbrush – Big Sagebrush Scrub	*Purshia tridentata – Artemisia tridentata* Shrubland Alliance	*Purshia glandulosa* Association	0.0	0.0	0.0	S4, **Yes[2]**
Arroyo Willow Thickets	*Salix lasiolepis* Shrubland Alliance	*Salix lasiolepis* Association	0.2	0.0	0.0	S4, **Yes[2]**
		Salix lasiolepis / *Rosa woodsii* / mixed herbs Association	0.0	0.0	0.0	S4, **Yes[2]**
Blackbrush Scrub	*Coleogyne ramosissima* Shrubland Alliance	*Coleogyne ramosissima* Association	0.0	0.0	0.0	S4, **Yes[2]**
Allscale Scrub	*Atriplex polycarpa* Shrubland Alliance	*Atriplex polycarpa* Association	20.6	1.0	0.3	S4
		Atriplex polycarpa – Psorothamnus arborescens Provisional Association	1.6	0.0	0.0	S4
Cheesebush – Sweetbush Scrub	*Ambrosia salsola – Bebbia juncea* Shrubland Alliance	*Ambrosia salsola* Association	6.4	0.0	0.0	S4
		Ambrosia salsola – Atriplex canescens Association	0.0	0.0	0.0	S4
		Ambrosia salsola – Atriplex confertifolia Association	0.0	0.0	0.0	S4
Fourwing Saltbush Scrub	*Atriplex canescens* Shrubland Alliance	*Atriplex canescens* Association	2.4	0.0	0.0	S4

Vegetation Alliance Common Name	Vegetation Alliance Scientific Name	Vegetation Association	Total Area Mapped on CSP Project Alignment (acres)	Anticipated Maximum Temporary Impacts in Proposed Project Work Areas (acres)	Anticipated Maximum Permanent Impacts in Proposed Project Work Areas (acres)	California State Rarity Ranking
		Atriplex canescens Desert Wash Association	0.0	0.0	0.0	S4
		Atriplex canescens – Psorothamnus arborescens Provisional Association	0.0	0.0	0.0	S4, **Yes[2]**
		Atriplex canescens – Krascheninnikovia lanata Association	0.0	0.0	0.0	S4
		Atriplex canescens / herbaceous Association	0.0	0.0	0.0	S4, **Yes[2]**
Mormon Tea Scrub	*Ephedra viridis* Shrubland Alliance	*Ephedra viridis* Association	0.0	0.0	0.0	S4
Mountain Big Sagebrush Scrub	*Artemisia tridentata* subsp. *vaseyana* Shrubland Alliance	*Artemisia tridentata* subsp. *vaseyana* Association	0.05	0.0	0.0	S4
		Artemisia tridentata subsp. *vaseyana – Purshia tridentata* / *Festuca idahoensis* Association	0.0	0.0	0.0	S4
		Artemisia tridentata subsp. *vaseyana – Ephedra viridis* Association	0.0	0.0	0.0	S4
Needleleaf Rabbitbrush Scrub	*Ericameria teretifolia* Shrubland Alliance	*Ericameria teretifolia* Association	2.6	0.2	0.0	S4
Nevada Joint fir - Anderson's Boxthorn - Spiny Hopsage Scrub	*Ephedra nevadensis – Lycium andersonii – Grayia spinosa* Shrubland Alliance	*Ephedra nevadensis* Provisional Association	25.8	5.8	0.0	S4
		Ephedra nevadensis - Psorothamnus arborescens Provisional Association	3.1	0.0	0.0	S4
Quailbush Scrub	*Atriplex lentiformis* Shrubland Alliance	*Atriplex lentiformis* Association	0.0	0.0	0.0	S4
		Atriplex lentiformis - Ericameria nauseosa Provisional Association	0.0	0.0	0.0	S4
Sandbar Willow Thickets	*Salix exigua* Shrubland Alliance	*Salix exigua* Association	0.5	0.0	0.0	S4
		Salix exigua – (*Salix gooddingii*) Provisional Association	0.0	0.0	0.0	S4
Shadscale Scrub	*Atriplex confertifolia* Shrubland Alliance	*Atriplex confertifolia* Great Basin Association	33.7	0.0	0.0	S4

Vegetation Alliance Common Name	Vegetation Alliance Scientific Name	Vegetation Association	Total Area Mapped on CSP Project Alignment (acres)	Anticipated Maximum Temporary Impacts in Proposed Project Work Areas (acres)	Anticipated Maximum Permanent Impacts in Proposed Project Work Areas (acres)	California State Rarity Ranking
		Atriplex confertifolia – Ephedra nevadensis Association	3.3	0.4	0.0	S4
		Atriplex confertifolia – Krascheninnikovia lanata Association	0.0	0.0	0.0	**Yes[2]**
		Atriplex confertifolia – Psorothamnus arborescens Provisional Association	3.5	0.0	0.0	**Yes[2]**
Big Sagebrush Scrub	*Artemisia tridentata* Shrubland Alliance	*Artemisia tridentata* Association	0.0	0.0	0.0	S5
California Buckwheat Scrub	*Eriogonum fasciculatum* Shrubland Alliance	*Eriogonum fasciculatum* Association	0.0	0.0	0.0	S5
Rubber Rabbitbrush Scrub	*Ericameria nauseosa* Shrubland Alliance	*Ericameria nauseosa* Association	4.9	0.0	0.0	S5
		Total Acres Shrubland Vegetation	***176.6***	***9.6***	***0.5***	***NA***
Alkali Sacaton – Scratchgrass – Alkali Cordgrass Alkaline Wet Meadow	*Sporobolus airoides – Muhlenbergia asperifolia – Spartina gracilis* Herbaceous Alliance	*Muhlenbergia asperifolia – Distichlis spicata* Provisional Association	0.0	0.0	0.0	**S2**
Yerba Mansa – Nuttall's Sunflower – Nevada Goldenrod Alkaline Wet Meadows	*Anemopsis californica – Helianthus nuttallii – Solidago spectabilis* Herbaceous Alliance	*Anemopsis californica* Association	0.0	0.0	0.0	**S2**
Ashy Ryegrass – Creeping Wildrye Turfs	*Leymus cinereus – Leymus triticoides* Herbaceous Alliance	*Leymus triticoides* Association	0.0	0.0	0.0	**S3**
Hardstem and California Bulrush Marshes	*Schoenoplectus* (*acutus, californicus*) Herbaceous Alliance	*Schoenoplectus acutus* Association	0.0	0.0	0.0	**S3**S4, **Yes[2]**
Salt Grass Flats	*Distichlis spicata* Herbaceous Alliance	*Distichlis spicata* Association	0.0	0.0	0.0	S4
		Distichlis spicata – annual grasses Association	0.0	0.0	0.0	S4
Baltic and Mexican Rush Marshes	*Juncus arcticus* (var. *balticus, mexicanus*) Herbaceous Alliance	*Juncus arcticus* var. *balticus* – (var. *mexicanus*) Association	0.0	0.0	0.0	S4
Wild Tarragon Patches	*Artemisia dracunculus* Herbaceous Alliance	*Artemisia dracunculus* Association	0.0	0.0	0.0	S4
Cattail Marshes	*Typha* (*angustifolia, domingensis, latifolia*) Herbaceous Alliance	*Typha (latifolia, angustifolia)* Association	0.0	0.0	0.0	S5

Vegetation Alliance Common Name	Vegetation Alliance Scientific Name	Vegetation Association	Total Area Mapped on CSP Project Alignment (acres)	Anticipated Maximum Temporary Impacts in Proposed Project Work Areas (acres)	Anticipated Maximum Permanent Impacts in Proposed Project Work Areas (acres)	California State Rarity Ranking
		Phragmites australis subsp. *americanus* Provisional Association	0.0	0.0	0.0	S5, **Yes**[2]
		Total Acres Herbaceous Vegetation	***0.0***	***0.0***	***0.0***	***NA***
		Total Acres Native Vegetation	***176.6***	***9.6***	***0.5***	***NA***
		Total Acres Non-Native Vegetation	***0.0***	***0.0***	***0.0***	***NA***
		Total Acres All Vegetation	***176.6***	***9.6***	***0.5***	***NA***
		Total Acres of Sensitive Vegetation	***71.5***	***2.2***	***0.1***	***Yes***
Active Agriculture			0.0	0.0	0.0	None
Ornamental/Landscaped (lawns, gardens)			0.0	0.0	0.0	None
Open Water (ponds, lakes, streams, rivers)			0.0	0.0	0.0	None
Developed (towers, roads, etc.)			22.4	1.3	0.1	None
Disturbed (cleared area supporting ruderal vegetation, if any)			0.0	0.0	0.0	None
Unvegetated Wash or River Bottom			0.0	0.0	0.0	None
		Total Mapped Acres[2]	***199.0***	***10.8***	***0.6***	

Notes:
Sensitive Alliances and Associations are indicated in **Bold**
1. Alliance is not sensitive; however, the association is included as a Sensitive Association on 2022 CDFW California Sensitive Natural Communities list
2. Total mapped acres between sub-tables may not sum to grand total on Table 3-1a due to rounding errors
Alliance Rarity Rankings (CDFW 2022, https://wildlife.ca.gov/Data/VegCAMP/Natural-Communities/Background):
S1: Fewer than 6 viable occurrences statewide and/or up to 518 hectares
S2: 6-20 viable occurrences statewide and/or 518-2,590 hectares
S3: 21-100 viable occurrences statewide and/or 2,590-12,950 hectares
Additional Threat Ranks:
0.1: Very threatened 0.2: Threatened 0.3: No current threat known

3.1.3 Vegetation Community Impacts—BLM Ridgecrest Field Office

Table 3-1c summarizes the mapped acreage of each alliance and association on lands managed by the BLM Ridgecrest Field Office within the CSP Project alignment and the associated anticipated maximum temporary and permanent impacts for each alliance and association in proposed Project work areas.

Table 3-1c Summary of Maximum Potential Impacts to Vegetation Communities on Lands Managed by Ridgecrest BLM Office within the CSP Project Alignment

Vegetation Alliance Common Name	Vegetation Alliance Scientific Name	Vegetation Association	Total Area Mapped on CSP Project Alignment (acres)	Anticipated Maximum Temporary Impacts in Proposed Project Work Areas (acres)	Anticipated Maximum Permanent Impacts in Proposed Project Work Areas (acres)	California State Rarity Ranking
Woodland Forest Vegetation						
Bristlecone Pine Woodland	*Pinus longaeva* Woodland Alliance	*Pinus longaeva* Association	0.0	0.0	0.0	**S2**
Aspen Groves	*Populus tremuloides* Woodland Alliance	*Populus tremuloides – Pinus longaeva* Provisional Association	0.0	0.0	0.0	**S3**
Limber Pine Woodland	*Pinus flexilis* Woodland Alliance	*Pinus flexilis – Pinus longaeva* Provisional Association	0.0	0.0	0.0	**S3**
Goodding's Willow – Red Willow Riparian Woodland and Forest	*Salix gooddingii – Salix laevigata* Woodland Alliance	*Salix laevigata* Association	0.0	0.0	0.0	**S3**
Singleleaf Pinyon Woodland	*Pinus monophylla* – (*Juniperus osteosperma*) Woodland Alliance	*Pinus monophylla* – (*Juniperus osteosperma*) / *Artemisia tridentata* subsp. *vaseyana* Association	0.0	0.0	0.0	S4
		Total Acres Woodland Vegetation	***0.0***	***0.0***	***0.0***	***NA***
Water Birch Thicket	*Betula occidentalis* Shrubland Alliance	*Betula occidentalis* / *Salix* spp. Association	0.0	0.0	0.0	**S2**
Fremont's and Nevada Smokebush Scrub	*Psorothamnus fremontii – Psorothamnus polydenius* Shrubland Alliance	*Psorothamnus polydenius – Atriplex confertifolia – Tetradymia* spp. Association	0.0	0.0	0.0	**S3**
		Psorothamnus polydenius – (*Psorothamnus arborescens*) Association	11.2	5.9	0.0	**S3**
		Sarcobatus baileyi Provisional Association	0.0	0.0	0.0	**S3**
Red-osier dogwood – Interior rose – Currant Thickets	*Cornus sericea – Rosa woodsii – Ribes* spp. Shrubland Alliance	*Rosa woodsii* Association	0.0	0.0	0.0	**S3**
Spiny Menodora Scrub	*Menodora spinescens* Shrubland Alliance	*Menodora spinescens – Atriplex confertifolia* Association	5.2	0.3	0.09	**S3**
		Menodora spinescens – (*Ephedra nevadensis*) Association	1.9	0.8	0.07	**S3**

Vegetation Alliance Common Name	Vegetation Alliance Scientific Name	Vegetation Association	Total Area Mapped on CSP Project Alignment (acres)	Anticipated Maximum Temporary Impacts in Proposed Project Work Areas (acres)	Anticipated Maximum Permanent Impacts in Proposed Project Work Areas (acres)	California State Rarity Ranking
Utah Serviceberry – Birch Leaf Mountain Mahogany – Small Leaf Mountain Mahogany Scrub	*Amelanchier utahensis – Cercocarpus montanus – Cercocarpus intricatus* Shrubland Alliance	*Cercocarpus intricatus* Association	0.0	0.0	0.0	**S3**
		Philadelphus microphyllus var. *microphyllus* Provisional Association	0.0	0.0	0.0	**S3**
Winterfat Scrubland	*Krascheninnikovia lanata* Shrubland Alliance	*Krascheninnikovia lanata* Association	1.4	0.1	0.05	**S3**
Greasewood Scrub	*Sarcobatus vermiculatus* Shrubland Alliance	*Sarcobatus vermiculatus* Association	8.1	0.8	0.1	**S3**S4
		Sarcobatus vermiculatus – Atriplex confertifolia Association	0.0	0.0	0.0	**S3**S4
Curl Leaf Mountain-mahogany Scrub	*Cercocarpus ledifolius* Shrubland Alliance	*Cercocarpus ledifolius – Artemisia tridentata* subsp. *vaseyana* Association	0.0	0.0	0.0	S4, **Yes[2]**
Antelope Bitterbrush – Big Sagebrush Scrub	*Purshia tridentata – Artemisia tridentata* Shrubland Alliance	*Purshia glandulosa* Association	19.4	1.6	0.3	S4, **Yes[2]**
Arroyo Willow Thickets	*Salix lasiolepis* Shrubland Alliance	*Salix lasiolepis* Association	0.1	0.0	0.0	S4, **Yes[2]**
		Salix lasiolepis / *Rosa woodsii* / mixed herbs Association	0.0	0.0	0.0	S4, **Yes[2]**
Blackbrush Scrub	*Coleogyne ramosissima* Shrubland Alliance	*Coleogyne ramosissima* Association	0.0	0.0	0.0	S4, **Yes[2]**
Allscale Scrub	*Atriplex polycarpa* Shrubland Alliance	*Atriplex polycarpa* Association	0.0	0.0	0.0	S4
		Atriplex polycarpa – Psorothamnus arborescens Provisional Association	0.0	0.0	0.0	S4
Cheesebush – Sweetbush Scrub	*Ambrosia salsola – Bebbia juncea* Shrubland Alliance	*Ambrosia salsola* Association	38.9	4.6	0.5	S4
		Ambrosia salsola – Atriplex canescens Association	23.5	2.2	0.6	S4
		Ambrosia salsola – Atriplex confertifolia Association	0.0	0.0	0.0	S4

Vegetation Alliance Common Name	Vegetation Alliance Scientific Name	Vegetation Association	Total Area Mapped on CSP Project Alignment (acres)	Anticipated Maximum Temporary Impacts in Proposed Project Work Areas (acres)	Anticipated Maximum Permanent Impacts in Proposed Project Work Areas (acres)	California State Rarity Ranking
Fourwing Saltbush Scrub	*Atriplex canescens* Shrubland Alliance	*Atriplex canescens* Association	35.6	5.6	0.5	S4
		Atriplex canescens Desert Wash Association	8.2	0.0	0.0	S4
		Atriplex canescens – Psorothamnus arborescens Provisional Association	0.0	0.0	0.0	S4, **Yes[2]**
		Atriplex canescens – Krascheninnikovia lanata Association	5.2	5.1	0.0	S4
		Atriplex canescens / herbaceous Association	0.0	0.0	0.0	S4, **Yes[2]**
Mormon Tea Scrub	*Ephedra viridis* Shrubland Alliance	*Ephedra viridis* Association	0.0	0.0	0.0	S4
Mountain Big Sagebrush Scrub	*Artemisia tridentata* subsp. *vaseyana* Shrubland Alliance	*Artemisia tridentata* subsp. *vaseyana* Association	96.7	11.8	2.1	S4
		Artemisia tridentata subsp. *vaseyana – Purshia tridentata / Festuca idahoensis* Association	8.4	0.3	0.0	S4
		Artemisia tridentata subsp. *vaseyana – Ephedra viridis* Association	0.0	0.0	0.0	S4
Needleleaf Rabbitbrush Scrub	*Ericameria teretifolia* Shrubland Alliance	*Ericameria teretifolia* Association	6.9	0.2	0.2	S4
Nevada Joint fir - Anderson's Boxthorn - Spiny Hopsage Scrub	*Ephedra nevadensis – Lycium andersonii – Grayia spinosa* Shrubland Alliance	*Ephedra nevadensis* Provisional Association	27.7	1.6	0.8	S4
		Ephedra nevadensis - Psorothamnus arborescens Provisional Association	0.0	0.0	0.0	S4
Quailbush Scrub	*Atriplex lentiformis* Shrubland Alliance	*Atriplex lentiformis* Association	0.0	0.0	0.0	S4
		Atriplex lentiformis - Ericameria nauseosa Provisional Association	0.0	0.0	0.0	S4
Sandbar Willow Thickets	*Salix exigua* Shrubland Alliance	*Salix exigua* Association	0.0	0.0	0.0	S4
		Salix exigua – (*Salix gooddingii*) Provisional Association	0.0	0.0	0.0	S4

Vegetation Alliance Common Name	Vegetation Alliance Scientific Name	Vegetation Association	Total Area Mapped on CSP Project Alignment (acres)	Anticipated Maximum Temporary Impacts in Proposed Project Work Areas (acres)	Anticipated Maximum Permanent Impacts in Proposed Project Work Areas (acres)	California State Rarity Ranking
Shadscale Scrub	*Atriplex confertifolia* Shrubland Alliance	*Atriplex confertifolia* Great Basin Association	0.0	0.0	0.0	S4
		Atriplex confertifolia – Ephedra nevadensis Association	0.0	0.0	0.0	S4
		Atriplex confertifolia – Krascheninnikovia lanata Association	0.0	0.0	0.0	**Yes[2]**
		Atriplex confertifolia – Psorothamnus arborescens Provisional Association	0.0	0.0	0.0	**Yes[2]**
Big Sagebrush Scrub	*Artemisia tridentata* Shrubland Alliance	*Artemisia tridentata* Association	0.0	0.0	0.0	S5
California Buckwheat Scrub	*Eriogonum fasciculatum* Shrubland Alliance	*Eriogonum fasciculatum* Association	0.0	0.0	0.0	S5
Rubber Rabbitbrush Scrub	*Ericameria nauseosa* Shrubland Alliance	*Ericameria nauseosa* Association	0.0	0.0	0.0	S5
		Total Acres Shrubland Vegetation	***298.5***	***41.0***	***5.4***	***NA***
Alkali Sacaton – Scratchgrass – Alkali Cordgrass Alkaline Wet Meadow	*Sporobolus airoides – Muhlenbergia asperifolia – Spartina gracilis* Herbaceous Alliance	*Muhlenbergia asperifolia – Distichlis spicata* Provisional Association	0.0	0.0	0.0	**S2**
Yerba Mansa – Nuttall's Sunflower – Nevada Goldenrod Alkaline Wet Meadows	*Anemopsis californica – Helianthus nuttallii – Solidago spectabilis* Herbaceous Alliance	*Anemopsis californica* Association	0.0	0.0	0.0	**S2**
Ashy Ryegrass – Creeping Wildrye Turfs	*Leymus cinereus – Leymus triticoides* Herbaceous Alliance	*Leymus triticoides* Association	0.0	0.0	0.0	**S3**
Hardstem and California Bulrush Marshes	*Schoenoplectus* (*acutus, californicus*) Herbaceous Alliance	*Schoenoplectus acutus* Association	0.0	0.0	0.0	**S3**S4, **Yes[2]**
Salt Grass Flats	*Distichlis spicata* Herbaceous Alliance	*Distichlis spicata* Association	0.0	0.0	0.0	S4
		Distichlis spicata – annual grasses Association	0.0	0.0	0.0	S4
Baltic and Mexican Rush Marshes	*Juncus arcticus* (var. *balticus, mexicanus*) Herbaceous Alliance	*Juncus arcticus* var. *balticus* – (var. *mexicanus*) Association	0.0	0.0	0.0	S4
Wild Tarragon Patches	*Artemisia dracunculus* Herbaceous Alliance	*Artemisia dracunculus* Association	0.0	0.0	0.0	S4

Vegetation Alliance Common Name	Vegetation Alliance Scientific Name	Vegetation Association	Total Area Mapped on CSP Project Alignment (acres)	Anticipated Maximum Temporary Impacts in Proposed Project Work Areas (acres)	Anticipated Maximum Permanent Impacts in Proposed Project Work Areas (acres)	California State Rarity Ranking
Cattail Marshes	*Typha* (*angustifolia, domingensis, latifolia*) Herbaceous Alliance	*Typha (latifolia, angustifolia)* Association	0.0	0.0	0.0	S5
		Phragmites australis subsp. *americanus* Provisional Association	0.0	0.0	0.0	S5, **Yes[2]**
		Total Acres Herbaceous Vegetation	***0.0***	***0.0***	***0.0***	***NA***
		Total Acres Native Vegetation	***298.5***	***41.0***	***5.4***	***NA***
		Total Acres Non-Native Vegetation	***0.0***	***0.0***	***0.0***	***NA***
		Total Acres All Vegetation	***298.5***	***41.0***	***5.4***	***NA***
		Total Acres of Sensitive Vegetation	***47.4***	***9.7***	***0.7***	***Yes***
Active Agriculture			0.0	0.0	0.0	None
Ornamental/Landscaped (lawns, gardens)			0.0	0.0	0.0	None
Open Water (ponds, lakes, streams, rivers)			0.0	0.0	0.0	None
Developed (towers, roads, etc.)			32.7	7.8	0.9	None
Disturbed (cleared area supporting ruderal vegetation, if any)			0.0	0.0	0.0	None
Unvegetated Wash or River Bottom			0.0	0.0	0.0	None
		Total Mapped Acres[2]	***331.2***	***48.7***	***6.3***	
Active Agriculture			0.0	0.0	0.0	None

Notes:
Sensitive Alliances and Associations are indicated in **Bold**
1. Alliance is not sensitive; however, the association is included as a Sensitive Association on 2022 CDFW California Sensitive Natural Communities list
2. Total mapped acres between sub-tables may not sum to grand total on Table 3-1a due to rounding errors
Alliance Rarity Rankings (CDFW 2022, https://wildlife.ca.gov/Data/VegCAMP/Natural-Communities/Background):
S1: Fewer than 6 viable occurrences statewide and/or up to 518 hectares
S2: 6-20 viable occurrences statewide and/or 518-2,590 hectares
S3: 21-100 viable occurrences statewide and/or 2,590-12,950 hectares
Additional Threat Ranks:
0.1: Very threatened 0.2: Threatened 0.3: No current threat known

3.1.4 Vegetation Community Impacts—USFS Inyo National Forest

Table 3-1d-i and 3-1d-ii summarize the mapped acreage of each alliance and association, and each USFS landtype association, on lands managed by the USFS INF within the CSP Project alignment and the associated anticipated maximum temporary and permanent impacts for each alliance and association, and each USFS landtype association, in proposed Project work areas.

Table 3-1d-i Summary of Maximum Potential Impacts to Vegetation Communities on Lands Managed by US Forest Service within Inyo National Forest within the CSP Project Alignment

Vegetation Alliance Common Name	Vegetation Alliance Scientific Name	Vegetation Association	Total Area Mapped on CSP Project Alignment (acres)	Anticipated Maximum Temporary Impacts in Proposed Project Work Areas (acres)	Anticipated Maximum Permanent Impacts in Proposed Project Work Areas (acres)	California State Rarity Ranking
Woodland Forest Vegetation						
Bristlecone Pine Woodland	*Pinus longaeva* Woodland Alliance	*Pinus longaeva* Association	22.9	0.6	0.4	**S2**
Aspen Groves	*Populus tremuloides* Woodland Alliance	*Populus tremuloides – Pinus longaeva* Provisional Association	3.7	0.2	0.3	**S3**
Limber Pine Woodland	*Pinus flexilis* Woodland Alliance	*Pinus flexilis – Pinus longaeva* Provisional Association	2.3	0.10	0.1	**S3**
Goodding's Willow – Red Willow Riparian Woodland and Forest	*Salix gooddingii – Salix laevigata* Woodland Alliance	*Salix laevigata* Association	0.0	0.0	0.0	**S3**
Singleleaf Pinyon Woodland	*Pinus monophylla* – (*Juniperus osteosperma*) Woodland Alliance	*Pinus monophylla* – (*Juniperus osteosperma*) / *Artemisia tridentata* subsp. *vaseyana* Association	185.6	20.0	5.2	S4
		Total Acres Woodland Vegetation	***214.5***	***20.8***	***6.0***	***NA***
Water Birch Thicket	*Betula occidentalis* Shrubland Alliance	*Betula occidentalis* / *Salix* spp. Association	1.6	0.09	0.1	**S2**
Fremont's and Nevada Smokebrush Scrub	*Psorothamnus fremontii – Psorothamnus polydenius* Shrubland Alliance	*Psorothamnus polydenius – Atriplex confertifolia – Tetradymia* spp. Association	0.0	0.0	0.0	**S3**
		Psorothamnus polydenius – (*Psorothamnus arborescens*) Association	0.0	0.0	0.0	**S3**
		Sarcobatus baileyi Provisional Association	0.0	0.0	0.0	**S3**
Red-osier dogwood – Interior rose – Currant Thickets	*Cornus sericea – Rosa woodsii – Ribes* spp. Shrubland Alliance	*Rosa woodsii* Association	1.0	0.3	0.05	**S3**

Vegetation Alliance Common Name	Vegetation Alliance Scientific Name	Vegetation Association	Total Area Mapped on CSP Project Alignment (acres)	Anticipated Maximum Temporary Impacts in Proposed Project Work Areas (acres)	Anticipated Maximum Permanent Impacts in Proposed Project Work Areas (acres)	California State Rarity Ranking
Spiny Menodora Scrub	*Menodora spinescens* Shrubland Alliance	*Menodora spinescens – Atriplex confertifolia* Association	0.0	0.0	0.0	**S3**
		Menodora spinescens – (*Ephedra nevadensis*) Association	0.0	0.0	0.0	**S3**
Utah Serviceberry – Birch Leaf Mountain Mahogany – Small Leaf Mountain Mahogany Scrub	*Amelanchier utahensis – Cercocarpus montanus – Cercocarpus intricatus* Shrubland Alliance	*Cercocarpus intricatus* Association	3.8	0.4	0.1	**S3**
		Philadelphus microphyllus var. *microphyllus* Provisional Association	2.0	0.1	0.0	**S3**
Winterfat Scrubland	*Krascheninnikovia lanata* Shrubland Alliance	*Krascheninnikovia lanata* Association	1.2	0.2	0.0	**S3**
Greasewood Scrub	*Sarcobatus vermiculatus* Shrubland Alliance	*Sarcobatus vermiculatus* Association	0.0	0.0	0.0	**S3**S4
		Sarcobatus vermiculatus – Atriplex confertifolia Association	0.0	0.0	0.0	**S3**S4
Curl Leaf Mountain-mahogany Scrub	*Cercocarpus ledifolius* Shrubland Alliance	*Cercocarpus ledifolius – Artemisia tridentata* subsp. *vaseyana* Association	25.0	2.2	1.0	S4, **Yes[2]**
Antelope Bitterbrush – Big Sagebrush Scrub	*Purshia tridentata – Artemisia tridentata* Shrubland Alliance	*Purshia glandulosa* Association	0.0	0.0	0.0	S4, **Yes[2]**
Arroyo Willow Thickets	*Salix lasiolepis* Shrubland Alliance	*Salix lasiolepis* Association	52.6	5.7	1.0	S4, **Yes[2]**
		Salix lasiolepis / *Rosa woodsii* / mixed herbs Association	0.5	0.08	0.0	S4, **Yes[2]**
Blackbrush Scrub	*Coleogyne ramosissima* Shrubland Alliance	*Coleogyne ramosissima* Association	0.0	0.0	0.0	S4, **Yes[2]**
Allscale Scrub	*Atriplex polycarpa* Shrubland Alliance	*Atriplex polycarpa* Association	0.4	0.01	0.00007	S4
		Atriplex polycarpa – Psorothamnus arborescens Provisional Association	0.0	0.0	0.0	S4

Vegetation Alliance Common Name	Vegetation Alliance Scientific Name	Vegetation Association	Total Area Mapped on CSP Project Alignment (acres)	Anticipated Maximum Temporary Impacts in Proposed Project Work Areas (acres)	Anticipated Maximum Permanent Impacts in Proposed Project Work Areas (acres)	California State Rarity Ranking
Cheesebush – Sweetbush Scrub	*Ambrosia salsola – Bebbia juncea* Shrubland Alliance	*Ambrosia salsola* Association	10.5	0.2	0.3	S4
		Ambrosia salsola – Atriplex canescens Association	0.0	0.0	0.0	S4
		Ambrosia salsola – Atriplex confertifolia Association	1.5	0.02	0.0	S4
Fourwing Saltbush Scrub	*Atriplex canescens* Shrubland Alliance	*Atriplex canescens* Association	0.0	0.0	0.0	S4
		Atriplex canescens Desert Wash Association	0.0	0.0	0.0	S4
		Atriplex canescens – Psorothamnus arborescens Provisional Association	0.0	0.0	0.0	S4, **Yes[2]**
		Atriplex canescens – Krascheninnikovia lanata Association	0.0	0.0	0.0	S4
		Atriplex canescens / herbaceous Association	0.0	0.0	0.0	S4, **Yes[2]**
Mormon Tea Scrub	*Ephedra viridis* Shrubland Alliance	*Ephedra viridis* Association	3.3	3.2	0.0	S4
Mountain Big Sagebrush Scrub	*Artemisia tridentata* subsp. *vaseyana* Shrubland Alliance	*Artemisia tridentata* subsp. *vaseyana* Association	308.9	45.7	9.6	S4
		Artemisia tridentata subsp. *vaseyana – Purshia tridentata* / *Festuca idahoensis* Association	0.0	0.0	0.0	S4
		Artemisia tridentata subsp. *vaseyana – Ephedra viridis* Association	0.9	0.7	0.0	S4
Needleleaf Rabbitbrush Scrub	*Ericameria teretifolia* Shrubland Alliance	*Ericameria teretifolia* Association	3.8	0.2	0.1	S4
Nevada Joint fir - Anderson's Boxthorn - Spiny Hopsage Scrub	*Ephedra nevadensis – Lycium andersonii – Grayia spinosa* Shrubland Alliance	*Ephedra nevadensis* Provisional Association	8.9	2.9	0.3	S4
		Ephedra nevadensis - Psorothamnus arborescens Provisional Association	0.0	0.0	0.0	S4
Quailbush Scrub	*Atriplex lentiformis* Shrubland Alliance	*Atriplex lentiformis* Association	0.0	0.0	0.0	S4
		Atriplex lentiformis - Ericameria nauseosa Provisional Association	0.0	0.0	0.0	S4

Vegetation Alliance Common Name	Vegetation Alliance Scientific Name	Vegetation Association	Total Area Mapped on CSP Project Alignment (acres)	Anticipated Maximum Temporary Impacts in Proposed Project Work Areas (acres)	Anticipated Maximum Permanent Impacts in Proposed Project Work Areas (acres)	California State Rarity Ranking
Sandbar Willow Thickets	*Salix exigua* Shrubland Alliance	*Salix exigua* Association	27.1	3.5	0.9	S4
		Salix exigua – (*Salix gooddingii*) Provisional Association	0.0	0.0	0.0	S4
Shadscale Scrub	*Atriplex confertifolia* Shrubland Alliance	*Atriplex confertifolia* Great Basin Association	7.3	1.2	0.2	S4
		Atriplex confertifolia – Ephedra nevadensis Association	0.0	0.0	0.0	S4
		Atriplex confertifolia – Krascheninnikovia lanata Association	0.0	0.0	0.0	**Yes[2]**
		Atriplex confertifolia – Psorothamnus arborescens Provisional Association	5.5	0.1	0.1	**Yes[2]**
Big Sagebrush Scrub	*Artemisia tridentata* Shrubland Alliance	*Artemisia tridentata* Association	8.3	1.4	0.4	S5
California Buckwheat Scrub	*Eriogonum fasciculatum* Shrubland Alliance	*Eriogonum fasciculatum* Association	12.3	1.7	0.5	S5
Rubber Rabbitbrush Scrub	*Ericameria nauseosa* Shrubland Alliance	*Ericameria nauseosa* Association	6.9	0.4	0.2	S5
		Total Acres Shrubland Vegetation	***493.2***	***70.3***	***14.8***	***NA***
Alkali Sacaton – Scratchgrass – Alkali Cordgrass Alkaline Wet Meadow	*Sporobolus airoides – Muhlenbergia asperifolia – Spartina gracilis* Herbaceous Alliance	*Muhlenbergia asperifolia – Distichlis spicata* Provisional Association	0.0	0.0	0.0	**S2**
Yerba Mansa – Nuttall's Sunflower – Nevada Goldenrod Alkaline Wet Meadows	*Anemopsis californica – Helianthus nuttallii – Solidago spectabilis* Herbaceous Alliance	*Anemopsis californica* Association	0.0	0.0	0.0	**S2**
Ashy Ryegrass – Creeping Wildrye Turfs	*Leymus cinereus – Leymus triticoides* Herbaceous Alliance	*Leymus triticoides* Association	0.0	0.0	0.0	**S3**
Hardstem and California Bulrush Marshes	*Schoenoplectus* (*acutus, californicus*) Herbaceous Alliance	*Schoenoplectus acutus* Association	0.0	0.0	0.0	**S3**S4, **Yes[2]**
Salt Grass Flats	*Distichlis spicata* Herbaceous Alliance	*Distichlis spicata* Association	0.0	0.0	0.0	S4
		Distichlis spicata – annual grasses Association	0.0	0.0	0.0	S4
Baltic and Mexican Rush Marshes	*Juncus arcticus* (var. *balticus, mexicanus*) Herbaceous Alliance	*Juncus arcticus* var. *balticus* – (var. *mexicanus*) Association	1.3	0.2	0.1	S4

Vegetation Alliance Common Name	Vegetation Alliance Scientific Name	Vegetation Association	Total Area Mapped on CSP Project Alignment (acres)	Anticipated Maximum Temporary Impacts in Proposed Project Work Areas (acres)	Anticipated Maximum Permanent Impacts in Proposed Project Work Areas (acres)	California State Rarity Ranking
Wild Tarragon Patches	*Artemisia dracunculus* Herbaceous Alliance	*Artemisia dracunculus* Association	0.2	0.2	0.0	S4
Cattail Marshes	*Typha* (*angustifolia, domingensis, latifolia*) Herbaceous Alliance	*Typha (latifolia, angustifolia)* Association	0.0	0.0	0.0	S5
		Phragmites australis subsp. *americanus* Provisional Association	0.0	0.0	0.0	S5, **Yes[2]**
		Total Acres Herbaceous Vegetation	***1.5***	***0.4***	***0.1***	***NA***
		Total Acres Native Vegetation	***709.3***	***91.5***	***21.0***	***NA***
		Total Acres Non-Native Vegetation	***0.0***	***0.0***	***0.0***	***NA***
		Total Acres All Vegetation	***709.3***	***91.5***	***21.0***	***NA***
		Total Acres of Sensitive Vegetation	***122.0***	***10.0***	***3.2***	***Yes***
Active Agriculture			0.0	0.0	0.0	None
Ornamental/Landscaped (lawns, gardens)			0.0	0.0	0.0	None
Open Water (ponds, lakes, streams, rivers)			0.0	0.0	0.0	None
Developed (towers, roads, etc.)			44.7	15.5	1.8	None
Disturbed (cleared area supporting ruderal vegetation, if any)			0.4	0.3	0.0	None
Unvegetated Wash or River Bottom			0.0	0.0	0.0	None
		Total Mapped Acres[2]	***754.4***	***107.3***	***22.8***	

Notes:
Sensitive Alliances and Associations are indicated in **Bold**
1. Alliance is not sensitive; however, the association is included as a Sensitive Association on 2022 CDFW California Sensitive Natural Communities list
2. Total mapped acres between sub-tables may not sum to grand total on Table 3-1a due to rounding errors
Alliance Rarity Rankings (CDFW 2022, https://wildlife.ca.gov/Data/VegCAMP/Natural-Communities/Background):
S1: Fewer than 6 viable occurrences statewide and/or up to 518 hectares
S2: 6-20 viable occurrences statewide and/or 518-2,590 hectares
S3: 21-100 viable occurrences statewide and/or 2,590-12,950 hectares
Additional Threat Ranks:
0.1: Very threatened 0.2: Threatened 0.3: No current threat known

Table 3-1d-ii Summary of Maximum Potential Impacts to USFS Landtype Associations on Lands Managed by US Forest Service within Inyo National Forest with the CSP Project Alignment

LTA	LTAMU	Total Area Mapped on CSP Project Alignment (acres)	Anticipated Maximum Temporary Impacts in Proposed Project Work Areas (acres)	Anticipated Maximum Permanent Impacts in Proposed Project Work Areas (acres)
Chalfant-Bishop Alluvium	341Di4001	23.8850	2.9	0.8
Deep Springs Xeric Shrubland	341Dj4006	46.3207	9.0	1.5
Payson-Wyman Pinyon Pine	341Dj4013	248.9185	47.2	6.4
Silver Canyon Xeric Shrubland	341Dj4017	137.2772	19.1	3.2
Southwest White Mts. Pinyon Pine	341Dj4018	41.6023	2.7	1.6
Upper Wyman Limber-Bristlecone-Mt. Mahogany Woodland	341Dj4021	134.0049	14.7	4.4
Upper Wyman-Cottonwood Alpine & Sagebrush	341Dj4020	94.9220	10.7	4.0

3.1.5 Vegetation Community Impacts—LADWP Lands

Table 3-1e summarizes the mapped acreage of each alliance and association on lands managed by the LADWP within the CSP Project alignment and the associated anticipated maximum temporary and permanent impacts for each alliance and association in proposed Project work areas.

Table 3-1e Summary of Maximum Potential Impacts to Vegetation Communities on Lands Managed by Los Angeles Department of Water and Power within the CSP Project Alignment

Vegetation Alliance Common Name	Vegetation Alliance Scientific Name	Vegetation Association	Total Area Mapped on CSP Project Alignment (acres)	Anticipated Maximum Temporary Impacts in Proposed Project Work Areas (acres)	Anticipated Maximum Permanent Impacts in Proposed Project Work Areas (acres)	California State Rarity Ranking
Woodland Forest Vegetation						
Bristlecone Pine Woodland	*Pinus longaeva* Woodland Alliance	*Pinus longaeva* Association	0.0	0.0	0.0	**S2**
Aspen Groves	*Populus tremuloides* Woodland Alliance	*Populus tremuloides – Pinus longaeva* Provisional Association	0.0	0.0	0.0	**S3**
Limber Pine Woodland	*Pinus flexilis* Woodland Alliance	*Pinus flexilis – Pinus longaeva* Provisional Association	0.0	0.0	0.0	**S3**
Goodding's Willow – Red Willow Riparian Woodland and Forest	*Salix gooddingii – Salix laevigata* Woodland Alliance	*Salix laevigata* Association	0.3	0.04	0.0	**S3**
Singleleaf Pinyon Woodland	*Pinus monophylla* – (*Juniperus osteosperma*) Woodland Alliance	*Pinus monophylla* – (*Juniperus osteosperma*) / *Artemisia tridentata* subsp. *vaseyana* Association	0.0	0.0	0.0	S4
		Total Acres Woodland Vegetation	***0.3***	***0.04***	***0.0***	***NA***
Water Birch Thicket	*Betula occidentalis* Shrubland Alliance	*Betula occidentalis* / *Salix* spp. Association	0.0	0.0	0.0	**S2**
Fremont's and Nevada Smokebush Scrub	*Psorothamnus fremontii – Psorothamnus polydenius* Shrubland Alliance	*Psorothamnus polydenius – Atriplex confertifolia – Tetradymia* spp. Association	0.0	0.0	0.0	**S3**
		Psorothamnus polydenius – (*Psorothamnus arborescens*) Association	30.7	8.3	0.3	**S3**
		Sarcobatus baileyi Provisional Association	3.6	0.0	0.0	**S3**
Red-osier dogwood – Interior rose – Currant Thickets	*Cornus sericea – Rosa woodsii – Ribes* spp. Shrubland Alliance	*Rosa woodsii* Association	0.9	0.03	0.0	**S3**

Vegetation Alliance Common Name	Vegetation Alliance Scientific Name	Vegetation Association	Total Area Mapped on CSP Project Alignment (acres)	Anticipated Maximum Temporary Impacts in Proposed Project Work Areas (acres)	Anticipated Maximum Permanent Impacts in Proposed Project Work Areas (acres)	California State Rarity Ranking
Spiny Menodora Scrub	*Menodora spinescens* Shrubland Alliance	*Menodora spinescens – Atriplex confertifolia* Association	0.0	0.0	0.0	**S3**
		Menodora spinescens – (*Ephedra nevadensis*) Association	0.0	0.0	0.0	**S3**
Utah Serviceberry – Birch Leaf Mountain Mahogany – Small Leaf Mountain Mahogany Scrub	*Amelanchier utahensis – Cercocarpus montanus – Cercocarpus intricatus* Shrubland Alliance	*Cercocarpus intricatus* Association	0.0	0.0	0.0	**S3**
		Philadelphus microphyllus var. *microphyllus* Provisional Association	0.0	0.0	0.0	**S3**
Winterfat Scrubland	*Krascheninnikovia lanata* Shrubland Alliance	*Krascheninnikovia lanata* Association	0.0	0.0	0.0	**S3**
Greasewood Scrub	*Sarcobatus vermiculatus* Shrubland Alliance	*Sarcobatus vermiculatus* Association	43.7	1.9	0.4	**S3**S4
		Sarcobatus vermiculatus – Atriplex confertifolia Association	0.0	0.0	0.0	**S3**S4
Curl Leaf Mountain-mahogany Scrub	*Cercocarpus ledifolius* Shrubland Alliance	*Cercocarpus ledifolius – Artemisia tridentata* subsp. *vaseyana* Association	0.0	0.0	0.0	S4, **Yes[2]**
Antelope Bitterbrush – Big Sagebrush Scrub	*Purshia tridentata – Artemisia tridentata* Shrubland Alliance	*Purshia glandulosa* Association	0.0	0.0	0.0	S4, **Yes[2]**
Arroyo Willow Thickets	*Salix lasiolepis* Shrubland Alliance	*Salix lasiolepis* Association	0.06	0.0	0.0	S4, **Yes[2]**
		Salix lasiolepis / *Rosa woodsii* / mixed herbs Association	0.0	0.0	0.0	S4, **Yes[2]**
Blackbrush Scrub	*Coleogyne ramosissima* Shrubland Alliance	*Coleogyne ramosissima* Association	12.8	1.1	0.0	S4, **Yes[2]**
Allscale Scrub	*Atriplex polycarpa* Shrubland Alliance	*Atriplex polycarpa* Association	0.0	0.0	0.0	S4
		Atriplex polycarpa – Psorothamnus arborescens Provisional Association	0.0	0.0	0.0	S4
Cheesebush – Sweetbush Scrub	*Ambrosia salsola – Bebbia juncea* Shrubland Alliance	*Ambrosia salsola* Association	0.9	0.0	0.0	S4
		Ambrosia salsola – Atriplex canescens Association	0.0	0.0	0.0	S4
		Ambrosia salsola – Atriplex confertifolia Association	0.0	0.0	0.0	S4

Vegetation Alliance Common Name	Vegetation Alliance Scientific Name	Vegetation Association	Total Area Mapped on CSP Project Alignment (acres)	Anticipated Maximum Temporary Impacts in Proposed Project Work Areas (acres)	Anticipated Maximum Permanent Impacts in Proposed Project Work Areas (acres)	California State Rarity Ranking
Fourwing Saltbush Scrub	*Atriplex canescens* Shrubland Alliance	*Atriplex canescens* Association	10.0	1.0	0.2	S4
		Atriplex canescens Desert Wash Association	0.0	0.0	0.0	S4
		Atriplex canescens – Psorothamnus arborescens Provisional Association	0.6	0.09	0.04	S4, **Yes[2]**
		Atriplex canescens – Krascheninnikovia lanata Association	0.0	0.0	0.0	S4
		Atriplex canescens / herbaceous Association	4.6	4.6	0.0	S4, **Yes[2]**
Mormon Tea Scrub	*Ephedra viridis* Shrubland Alliance	*Ephedra viridis* Association	0.0	0.0	0.0	S4
Mountain Big Sagebrush Scrub	*Artemisia tridentata* subsp. *vaseyana* Shrubland Alliance	*Artemisia tridentata* subsp. *vaseyana* Association	17.9	1.6	0.0	S4
		Artemisia tridentata subsp. *vaseyana – Purshia tridentata* / *Festuca idahoensis* Association	0.0	0.0	0.0	S4
		Artemisia tridentata subsp. *vaseyana – Ephedra viridis* Association	0.0	0.0	0.0	S4
Needleleaf Rabbitbrush Scrub	*Ericameria teretifolia* Shrubland Alliance	*Ericameria teretifolia* Association	11.0	0.8	0.0	S4
Nevada Joint fir - Anderson's Boxthorn - Spiny Hopsage Scrub	*Ephedra nevadensis – Lycium andersonii – Grayia spinosa* Shrubland Alliance	*Ephedra nevadensis* Provisional Association	54.0	4.1	0.7	S4
		Ephedra nevadensis - Psorothamnus arborescens Provisional Association	0.0	0.0	0.0	S4
Quailbush Scrub	*Atriplex lentiformis* Shrubland Alliance	*Atriplex lentiformis* Association	32.5	3.3	0.4	S4
		Atriplex lentiformis - Ericameria nauseosa Provisional Association	0.0	0.0	0.0	S4
Sandbar Willow Thickets	*Salix exigua* Shrubland Alliance	*Salix exigua* Association	7.0	0.2	0.0	S4
		Salix exigua – (*Salix gooddingii*) Provisional Association	1.7	0.0	0.0	S4

Vegetation Alliance Common Name	Vegetation Alliance Scientific Name	Vegetation Association	Total Area Mapped on CSP Project Alignment (acres)	Anticipated Maximum Temporary Impacts in Proposed Project Work Areas (acres)	Anticipated Maximum Permanent Impacts in Proposed Project Work Areas (acres)	California State Rarity Ranking
Shadscale Scrub	*Atriplex confertifolia* Shrubland Alliance	*Atriplex confertifolia* Great Basin Association	14.4	1.3	0.08	S4
		Atriplex confertifolia – Ephedra nevadensis Association	0.0	0.0	0.0	S4
		Atriplex confertifolia – Krascheninnikovia lanata Association	17.8	2.0	0.3	**Yes[2]**
		Atriplex confertifolia – Psorothamnus arborescens Provisional Association	0.0	0.0	0.0	**Yes[2]**
Big Sagebrush Scrub	*Artemisia tridentata* Shrubland Alliance	*Artemisia tridentata* Association	0.0	0.0	0.0	S5
California Buckwheat Scrub	*Eriogonum fasciculatum* Shrubland Alliance	*Eriogonum fasciculatum* Association	0.0	0.0	0.0	S5
Rubber Rabbitbrush Scrub	*Ericameria nauseosa* Shrubland Alliance	*Ericameria nauseosa* Association	87.9	13.6	1.0	S5
		Total Acres Shrubland Vegetation	***352.1***	***43.8***	***3.4***	***NA***
Alkali Sacaton – Scratchgrass – Alkali Cordgrass Alkaline Wet Meadow	*Sporobolus airoides – Muhlenbergia asperifolia – Spartina gracilis* Herbaceous Alliance	*Muhlenbergia asperifolia – Distichlis spicata* Provisional Association	4.8	0.8	0.10	**S2**
Yerba Mansa – Nuttall's Sunflower – Nevada Goldenrod Alkaline Wet Meadows	*Anemopsis californica – Helianthus nuttallii – Solidago spectabilis* Herbaceous Alliance	*Anemopsis californica* Association	0.07	0.0	0.0	**S2**
Ashy Ryegrass – Creeping Wildrye Turfs	*Leymus cinereus – Leymus triticoides* Herbaceous Alliance	*Leymus triticoides* Association	6.1	0.8	0.2	**S3**
Hardstem and California Bulrush Marshes	*Schoenoplectus* (*acutus, californicus*) Herbaceous Alliance	*Schoenoplectus acutus* Association	0.2	0.0	0.0	**S3**S4, **Yes[2]**
Salt Grass Flats	*Distichlis spicata* Herbaceous Alliance	*Distichlis spicata* Association	1.5	0.1	0.02	S4
		Distichlis spicata – annual grasses Association	0.3	0.0	0.0	S4
Baltic and Mexican Rush Marshes	*Juncus arcticus* (var. *balticus, mexicanus*) Herbaceous Alliance	*Juncus arcticus* var. *balticus* – (var. *mexicanus*) Association	0.2	0.002	0.0	S4
Wild Tarragon Patches	*Artemisia dracunculus* Herbaceous Alliance	*Artemisia dracunculus* Association	0.0	0.0	0.0	S4

Vegetation Alliance Common Name	Vegetation Alliance Scientific Name	Vegetation Association	Total Area Mapped on CSP Project Alignment (acres)	Anticipated Maximum Temporary Impacts in Proposed Project Work Areas (acres)	Anticipated Maximum Permanent Impacts in Proposed Project Work Areas (acres)	California State Rarity Ranking
Cattail Marshes	*Typha* (*angustifolia, domingensis, latifolia*) Herbaceous Alliance	*Typha (latifolia, angustifolia)* Association	0.3	0.0	0.0	S5
		Phragmites australis subsp. *americanus* Provisional Association	0.3	0.007	0.0	S5, **Yes**[2]
		Total Acres Herbaceous Vegetation	***13.7***	***1.6***	***0.3***	***NA***
		Total Acres Native Vegetation	***366.1***	***45.5***	***3.7***	***NA***
		Total Acres Non-Native Vegetation	***0.0***	***0.0***	***0.0***	***NA***
		Total Acres All Vegetation	***366.1***	***45.5***	***3.7***	***NA***
		Total Acres of Sensitive Vegetation	***126.5***	***19.6***	***1.3***	***Yes***
Active Agriculture			0.0	0.0	0.0	None
Ornamental/Landscaped (lawns, gardens)			0.0	0.0	0.0	None
Open Water (ponds, lakes, streams, rivers)			1.1	0.08	0.01	None
Developed (towers, roads, etc.)			44.7	8.0	0.8	None
Disturbed (cleared area supporting ruderal vegetation, if any)			0.1	0.01	0.0	None
Unvegetated Wash or River Bottom			0.5	0.04	0.006	None
		Total Mapped Acres[2]	***412.4***	***53.6***	***4.5***	

Notes:
Sensitive Alliances and Associations are indicated in **Bold**
1. Alliance is not sensitive; however, the association is included as a Sensitive Association on 2022 CDFW California Sensitive Natural Communities list
2. Total mapped acres between sub-tables may not sum to grand total on Table 3-1a due to rounding errors
Alliance Rarity Rankings (CDFW 2022, https://wildlife.ca.gov/Data/VegCAMP/Natural-Communities/Background):
S1: Fewer than 6 viable occurrences statewide and/or up to 518 hectares
S2: 6-20 viable occurrences statewide and/or 518-2,590 hectares
S3: 21-100 viable occurrences statewide and/or 2,590-12,950 hectares
Additional Threat Ranks:
0.1: Very threatened 0.2: Threatened 0.3: No current threat known

3.1.6 Vegetation Community Impacts—Private Lands

Table 3-1f summarizes the mapped acreage of each alliance and association on private lands within the CSP Project alignment and the associated anticipated maximum temporary and permanent impacts for each alliance and association in proposed Project work areas.

Table 3-1f Summary of Maximum Potential Impacts to Vegetation Communities on Private Land within the CSP Project Alignment

Vegetation Alliance Common Name	Vegetation Alliance Scientific Name	Vegetation Association	Total Area Mapped on CSP Project Alignment (acres)	Anticipated Maximum Temporary Impacts in Proposed Project Work Areas (acres)	Anticipated Maximum Permanent Impacts in Proposed Project Work Areas (acres)	California State Rarity Ranking
Woodland Forest Vegetation						
Bristlecone Pine Woodland	*Pinus longaeva* Woodland Alliance	*Pinus longaeva* Association	0.0	0.0	0.0	**S2**
Aspen Groves	*Populus tremuloides* Woodland Alliance	*Populus tremuloides – Pinus longaeva* Provisional Association	0.0	0.0	0.0	**S3**
Limber Pine Woodland	*Pinus flexilis* Woodland Alliance	*Pinus flexilis – Pinus longaeva* Provisional Association	0.0	0.0	0.0	**S3**
Goodding's Willow – Red Willow Riparian Woodland and Forest	*Salix gooddingii – Salix laevigata* Woodland Alliance	*Salix laevigata* Association	0.0	0.0	0.0	**S3**
Singleleaf Pinyon Woodland	*Pinus monophylla* – (*Juniperus osteosperma*) Woodland Alliance	*Pinus monophylla* – (*Juniperus osteosperma*) / *Artemisia tridentata* subsp. *vaseyana* Association	0.0	0.0	0.0	S4
		Total Acres Woodland Vegetation	***0.0***	***0.0***	***0.0***	***NA***
Water Birch Thicket	*Betula occidentalis* Shrubland Alliance	*Betula occidentalis* / *Salix* spp. Association	0.0	0.0	0.0	**S2**
Fremont's and Nevada Smokebush Scrub	*Psorothamnus fremontii – Psorothamnus polydenius* Shrubland Alliance	*Psorothamnus polydenius – Atriplex confertifolia – Tetradymia* spp. Association	0.0	0.0	0.0	**S3**
		Psorothamnus polydenius – (*Psorothamnus arborescens*) Association	3.9	0.0	0.0	**S3**
		Sarcobatus baileyi Provisional Association	0.0	0.0	0.0	**S3**
Red-osier dogwood – Interior rose – Currant Thickets	*Cornus sericea – Rosa woodsii – Ribes* spp. Shrubland Alliance	*Rosa woodsii* Association	0.0	0.0	0.0	**S3**

Vegetation Alliance Common Name	Vegetation Alliance Scientific Name	Vegetation Association	Total Area Mapped on CSP Project Alignment (acres)	Anticipated Maximum Temporary Impacts in Proposed Project Work Areas (acres)	Anticipated Maximum Permanent Impacts in Proposed Project Work Areas (acres)	California State Rarity Ranking
Spiny Menodora Scrub	*Menodora spinescens* Shrubland Alliance	*Menodora spinescens* – *Atriplex confertifolia* Association	1.1	0.02	0.0	**S3**
		Menodora spinescens – (*Ephedra nevadensis*) Association	0.0	0.0	0.0	**S3**
Utah Serviceberry – Birch Leaf Mountain Mahogany – Small Leaf Mountain Mahogany Scrub	*Amelanchier utahensis* – *Cercocarpus montanus* – *Cercocarpus intricatus* Shrubland Alliance	*Cercocarpus intricatus* Association	0.0	0.0	0.0	**S3**
		Philadelphus microphyllus var. *microphyllus* Provisional Association	0.0	0.0	0.0	**S3**
Winterfat Scrubland	*Krascheninnikovia lanata* Shrubland Alliance	*Krascheninnikovia lanata* Association	2.5	2.5	0.0	**S3**
Greasewood Scrub	*Sarcobatus vermiculatus* Shrubland Alliance	*Sarcobatus vermiculatus* Association	4.0	0.8	0.1	**S3**S4
		Sarcobatus vermiculatus – *Atriplex confertifolia* Association	0.0	0.0	0.0	**S3**S4
Curl Leaf Mountain-mahogany Scrub	*Cercocarpus ledifolius* Shrubland Alliance	*Cercocarpus ledifolius* – *Artemisia tridentata* subsp. *vaseyana* Association	0.0	0.0	0.0	S4, **Yes[2]**
Antelope Bitterbrush – Big Sagebrush Scrub	*Purshia tridentata* – *Artemisia tridentata* Shrubland Alliance	*Purshia glandulosa* Association	0.0	0.0	0.0	S4, **Yes[2]**
Arroyo Willow Thickets	*Salix lasiolepis* Shrubland Alliance	*Salix lasiolepis* Association	0.0	0.0	0.0	S4, **Yes[2]**
		Salix lasiolepis / *Rosa woodsii* / mixed herbs Association	0.0	0.0	0.0	S4, **Yes[2]**
Blackbrush Scrub	*Coleogyne ramosissima* Shrubland Alliance	*Coleogyne ramosissima* Association	0.0	0.0	0.0	S4, **Yes[2]**
Allscale Scrub	*Atriplex polycarpa* Shrubland Alliance	*Atriplex polycarpa* Association	0.0	0.0	0.0	S4
		Atriplex polycarpa – *Psorothamnus arborescens* Provisional Association	0.0	0.0	0.0	S4

Vegetation Alliance Common Name	Vegetation Alliance Scientific Name	Vegetation Association	Total Area Mapped on CSP Project Alignment (acres)	Anticipated Maximum Temporary Impacts in Proposed Project Work Areas (acres)	Anticipated Maximum Permanent Impacts in Proposed Project Work Areas (acres)	California State Rarity Ranking
Cheesebush – Sweetbush Scrub	*Ambrosia salsola – Bebbia juncea* Shrubland Alliance	*Ambrosia salsola* Association	11.6	2.2	0.2	S4
		Ambrosia salsola – Atriplex canescens Association	0.0	0.0	0.0	S4
		Ambrosia salsola – Atriplex confertifolia Association	0.0	0.0	0.0	S4
Fourwing Saltbush Scrub	*Atriplex canescens* Shrubland Alliance	*Atriplex canescens* Association	17.9	0.9	0.2	S4
		Atriplex canescens Desert Wash Association	0.0	0.0	0.0	S4
		Atriplex canescens – Psorothamnus arborescens Provisional Association	0.0	0.0	0.0	S4, **Yes[2]**
		Atriplex canescens – Krascheninnikovia lanata Association	0.0	0.0	0.0	S4
		Atriplex canescens / herbaceous Association	0.0	0.0	0.0	S4, **Yes[2]**
Mormon Tea Scrub	*Ephedra viridis* Shrubland Alliance	*Ephedra viridis* Association	0.0	0.0	0.0	S4
Mountain Big Sagebrush Scrub	*Artemisia tridentata* subsp. *vaseyana* Shrubland Alliance	*Artemisia tridentata* subsp. *vaseyana* Association	0.0	0.0	0.0	S4
		Artemisia tridentata subsp. *vaseyana – Purshia tridentata* / *Festuca idahoensis* Association	0.0	0.0	0.0	S4
		Artemisia tridentata subsp. *vaseyana – Ephedra viridis* Association	0.0	0.0	0.0	S4
Needleleaf Rabbitbrush Scrub	*Ericameria teretifolia* Shrubland Alliance	*Ericameria teretifolia* Association	0.0	0.0	0.0	S4
Nevada Joint fir - Anderson's Boxthorn - Spiny Hopsage Scrub	*Ephedra nevadensis – Lycium andersonii – Grayia spinosa* Shrubland Alliance	*Ephedra nevadensis* Provisional Association	0.5	0.0	0.0	S4
		Ephedra nevadensis - Psorothamnus arborescens Provisional Association	0.0	0.0	0.0	S4

Vegetation Alliance Common Name	Vegetation Alliance Scientific Name	Vegetation Association	Total Area Mapped on CSP Project Alignment (acres)	Anticipated Maximum Temporary Impacts in Proposed Project Work Areas (acres)	Anticipated Maximum Permanent Impacts in Proposed Project Work Areas (acres)	California State Rarity Ranking
Quailbush Scrub	*Atriplex lentiformis* Shrubland Alliance	*Atriplex lentiformis* Association	0.0	0.0	0.0	S4
		Atriplex lentiformis - Ericameria nauseosa Provisional Association	0.0	0.0	0.0	S4
Sandbar Willow Thickets	*Salix exigua* Shrubland Alliance	*Salix exigua* Association	0.02	0.0	0.0	S4
		Salix exigua – (*Salix gooddingii*) Provisional Association	0.0	0.0	0.0	S4
Shadscale Scrub	*Atriplex confertifolia* Shrubland Alliance	*Atriplex confertifolia* Great Basin Association	0.0	0.0	0.0	S4
		Atriplex confertifolia – Ephedra nevadensis Association	0.0	0.0	0.0	S4
		Atriplex confertifolia – Krascheninnikovia lanata Association	0.0	0.0	0.0	**Yes[2]**
		Atriplex confertifolia – Psorothamnus arborescens Provisional Association	3.4	0.0	0.0	**Yes[2]**
Big Sagebrush Scrub	*Artemisia tridentata* Shrubland Alliance	*Artemisia tridentata* Association	0.0	0.0	0.0	S5
California Buckwheat Scrub	*Eriogonum fasciculatum* Shrubland Alliance	*Eriogonum fasciculatum* Association	0.0	0.0	0.0	S5
Rubber Rabbitbrush Scrub	*Ericameria nauseosa* Shrubland Alliance	*Ericameria nauseosa* Association	3.4	0.2	0.08	S5
		Total Acres Shrubland Vegetation	***48.4***	***6.6***	***0.6***	***NA***
Alkali Sacaton – Scratchgrass – Alkali Cordgrass Alkaline Wet Meadow	*Sporobolus airoides – Muhlenbergia asperifolia – Spartina gracilis* Herbaceous Alliance	*Muhlenbergia asperifolia – Distichlis spicata* Provisional Association	1.7	0.3	0.05	**S2**
Yerba Mansa – Nuttall's Sunflower – Nevada Goldenrod Alkaline Wet Meadows	*Anemopsis californica – Helianthus nuttallii – Solidago spectabilis* Herbaceous Alliance	*Anemopsis californica* Association	0.0	0.0	0.0	**S2**
Ashy Ryegrass – Creeping Wildrye Turfs	*Leymus cinereus – Leymus triticoides* Herbaceous Alliance	*Leymus triticoides* Association	0.2	0.0	0.0	**S3**

Vegetation Alliance Common Name	Vegetation Alliance Scientific Name	Vegetation Association	Total Area Mapped on CSP Project Alignment (acres)	Anticipated Maximum Temporary Impacts in Proposed Project Work Areas (acres)	Anticipated Maximum Permanent Impacts in Proposed Project Work Areas (acres)	California State Rarity Ranking
Hardstem and California Bulrush Marshes	*Schoenoplectus* (*acutus, californicus*) Herbaceous Alliance	*Schoenoplectus acutus* Association	0.0	0.0	0.0	**S3**S4, **Yes**[2]
Salt Grass Flats	*Distichlis spicata* Herbaceous Alliance	*Distichlis spicata* Association	0.4	0.05	0.02	S4
		Distichlis spicata – annual grasses Association	0.3	0.0	0.0	S4
Baltic and Mexican Rush Marshes	*Juncus arcticus* (var. *balticus, mexicanus*) Herbaceous Alliance	*Juncus arcticus* var. *balticus* – (var. *mexicanus*) Association	0.0	0.0	0.0	S4
Wild Tarragon Patches	*Artemisia dracunculus* Herbaceous Alliance	*Artemisia dracunculus* Association	0.0	0.0	0.0	S4
Cattail Marshes	*Typha* (*angustifolia, domingensis, latifolia*) Herbaceous Alliance	*Typha (latifolia, angustifolia)* Association	0.0	0.0	0.0	S5
		Phragmites australis subsp. *americanus* Provisional Association	0.0	0.0	0.0	S5, **Yes**[2]
		Total Acres Herbaceous Vegetation	***2.5***	***0.4***	***0.07***	***NA***
		Total Acres Native Vegetation	***50.9***	***7.0***	***0.7***	***NA***
		Total Acres Non-Native Vegetation	***0.0***	***0.0***	***0.0***	***NA***
		Total Acres All Vegetation	***50.9***	***7.0***	***0.7***	***NA***
		Total Acres of Sensitive Vegetation	***16.8***	***3.6***	***0.1***	***Yes***
Active Agriculture			18.3	2.3	0.3	None
Ornamental/Landscaped (lawns, gardens)			0.8	0.01	0.0	None
Open Water (ponds, lakes, streams, rivers)			0.0	0.0	0.0	None

Vegetation Alliance Common Name	Vegetation Alliance Scientific Name	Vegetation Association	Total Area Mapped on CSP Project Alignment (acres)	Anticipated Maximum Temporary Impacts in Proposed Project Work Areas (acres)	Anticipated Maximum Permanent Impacts in Proposed Project Work Areas (acres)	California State Rarity Ranking
Developed (towers, roads, etc.)			11.8	2.0	0.3	None
Disturbed (cleared area supporting ruderal vegetation, if any)			4.7	2.4	0.0	None
Unvegetated Wash or River Bottom			0.0	0.0	0.0	None
		Total Mapped Acres[2]	***86.5***	***13.8***	***1.2***	

Notes:
Sensitive Alliances and Associations are indicated in **Bold**
1. Alliance is not sensitive; however, the association is included as a Sensitive Association on 2022 CDFW California Sensitive Natural Communities list
2. Total mapped acres between sub-tables may not sum to grand total on Table 3-1a due to rounding errors
Alliance Rarity Rankings (CDFW 2022, https://wildlife.ca.gov/Data/VegCAMP/Natural-Communities/Background):
S1: Fewer than 6 viable occurrences statewide and/or up to 518 hectares
S2: 6-20 viable occurrences statewide and/or 518-2,590 hectares
S3: 21-100 viable occurrences statewide and/or 2,590-12,950 hectares
Additional Threat Ranks:
0.1: Very threatened 0.2: Threatened 0.3: No current threat known

3.2 Native Trees in Potential Project Work Areas

A survey of individual native trees in potential Project work areas was conducted between July 6 and July 25, 2022. Tables 3-2a through Tables 3-2f summarize the number of mapped trees within anticipated Project work areas, as well as living trees that overhang proposed Project work areas or access roads and may require pruning to facilitate safe vehicular access. Most of these trees will be preserved by judicious use of helicopters and ground work. Actual tree quantities that might be affected by Project work will be supplied at a later design phase.

3.2.1 Native Trees—All Lands

Table 3-2a provides the total number of mapped native trees within proposed Project work areas on all lands within the CSP Project alignment.

Table 3-2a Summary of Number of Mapped Living Native Trees within Potential Project Work Areas on all Lands within the CSP Project Alignment

Scientific Name	Common Name	Living Trees in Proposed Project Work Areas
Betula occidentalis	water birch	7
Juniperus osteosperma	Utah juniper	38
Pinus flexilis	limber pine	8
Pinus longaeva	bristlecone pine	30
Pinus monophylla	single-leaf pinyon pine	228
Populus fremontii	Fremont cottonwood	15
Populus tremuloides	quaking aspen	29
Populus trichocarpa	black cottonwood	2
Salix laevigata	red willow	1
Salix lasiolepis	arroyo willow	202
Salix lucida (*S. lasiandra* var. *lasiandra*)	shining willow	0
Salix lutea	yellow willow	9
	Total Mapped Native Trees	**569**

3.2.2 Native Trees—BLM Bishop Field Office

Table 3-2b presents the number of mapped native trees within potential Project work areas on lands managed by the BLM Bishop Field Office within the CSP Project alignment, along with tree quantities that might be affected by potential pruning.

Table 3-2b Summary of Number of Mapped Living Native Trees within Potential Project Work Areas on Lands Managed by BLM Bishop Office

Scientific Name	Common Name	Living Trees in Proposed Project Work Areas
Betula occidentalis	water birch	0
Juniperus osteosperma	Utah juniper	0
Pinus flexilis	limber pine	0
Pinus longaeva	bristlecone pine	0
Pinus monophylla	single-leaf pinyon pine	0
Populus fremontii	Fremont cottonwood	0
Populus tremuloides	quaking aspen	0
Populus trichocarpa	black cottonwood	0
Salix laevigata	red willow	0
Salix lasiolepis	arroyo willow	0
Salix lucida (*S. lasiandra* var. *lasiandra*)	shining willow	0
Salix lutea	yellow willow	0
Total Mapped Native Trees		**0**

3.2.3 Native Trees—BLM Ridgecrest Field Office

Table 3-2c presents the number of mapped native trees within potential Project work areas on lands managed by the BLM Ridgecrest Field Office within the CSP Project alignment, along with tree quantities that might be affected by potential pruning.

Table 3-2c Summary of Number of Mapped Living Native Trees within Potential Project Work Areas on Lands Managed by BLM Ridgecrest Office

Scientific Name	Common Name	Living Trees in Proposed Project Work Areas
Betula occidentalis	water birch	0
Juniperus osteosperma	Utah juniper	0
Pinus flexilis	limber pine	0
Pinus longaeva	bristlecone pine	0
Pinus monophylla	single-leaf pinyon pine	0
Populus fremontii	Fremont cottonwood	0
Populus tremuloides	quaking aspen	0
Populus trichocarpa	black cottonwood	0
Salix laevigata	red willow	0
Salix lasiolepis	arroyo willow	0
Salix lucida (*S. lasiandra* var. *lasiandra*)	shining willow	0
Salix lutea	yellow willow	0
Total Mapped Native Trees		**0**

3.2.4 Native Trees—USFS Inyo National Forest

Table 3-2d presents the number of mapped native trees within potential Project work areas on lands managed by the USFS INF within the CSP Project alignment, along with tree quantities that might be affected by potential pruning.

Table 3-2d Summary of Number of Mapped Living Native Trees within Potential Project Work Areas on Lands Managed by U.S. Forest Service Inyo National Forest

Scientific Name	Common Name	Living Trees in Proposed Project Work Areas
Betula occidentalis	water birch	7
Juniperus osteosperma	Utah juniper	8
Pinus flexilis	limber pine	8
Pinus longaeva	bristlecone pine	30
Pinus monophylla	single-leaf pinyon pine	228
Populus fremontii	Fremont cottonwood	4
Populus tremuloides	quaking aspen	29
Populus trichocarpa	black cottonwood	2
Salix laevigata	red willow	0
Salix lasiolepis	arroyo willow	200
Salix lucida (*S. lasiandra* var. *lasiandra*)	shining willow	0
Salix lutea	yellow willow	9
	Total Mapped Native Trees	**555**

3.2.5 Native Trees—LADWP Lands

Table 3-2e presents the number of mapped native trees within potential Project work areas on lands managed by the LADWP within the CSP Project alignment, along with tree quantities that might be affected by potential pruning.

Table 3-2e Summary of Number of Mapped Living Native Trees within Potential Project Work Areas on Lands Managed by Los Angeles Department of Water and Power

Scientific Name	Common Name	Living Trees in Proposed Project Work Areas
Betula occidentalis	water birch	0
Juniperus osteosperma	Utah juniper	0
Pinus flexilis	limber pine	0
Pinus longaeva	bristlecone pine	0
Pinus monophylla	single-leaf pinyon pine	0
Populus fremontii	Fremont cottonwood	11
Populus tremuloides	quaking aspen	0
Populus trichocarpa	black cottonwood	0
Salix laevigata	red willow	1
Salix lasiolepis	arroyo willow	2
Salix lucida (*S. lasiandra* var. *lasiandra*)	shining willow	0
Salix lutea	yellow willow	0
Total Mapped Native Trees		**14**

3.2.6 Native Trees—Private Lands

Table 3-2f presents the number of mapped native trees within potential Project work areas on private lands within the CSP Project alignment, along with tree quantities that might be affected by potential pruning.

Table 3-2f Summary of Number of Mapped Living Native Trees within Potential Project Work Areas on Private Land

Scientific Name	Common Name	Living Trees in Proposed Project Work Areas
Betula occidentalis	water birch	0
Juniperus osteosperma	Utah juniper	0
Pinus flexilis	limber pine	0
Pinus longaeva	bristlecone pine	0
Pinus monophylla	single-leaf pinyon pine	0
Populus fremontii	Fremont cottonwood	0
Populus tremuloides	quaking aspen	0
Populus trichocarpa	black cottonwood	0
Salix laevigata	red willow	0
Salix lasiolepis	arroyo willow	0
Salix lucida (*S. lasiandra* var. *lasiandra*)	shining willow	0
Salix lutea	yellow willow	0
Total Mapped Native Trees		**0**

3.3 Special-status Plant Species in Potential Project Work Areas

Nine non-listed special-status plant species were observed within the CSP Project alignment during 2017 and 2018 surveys; these include two shrub species, one cactus species, three herbaceous perennial species (including one grass), and three annual species; an additional seven plant species were observed with a CRPR of 4. The majority (94 percent) of the observed individuals of special-status plant species are annuals or herbaceous perennials that pass the dry or cold season as seeds or as dormant plants with no above-ground green foliage and underground storage organs. More information on the surveyed special-status plant species is detailed in the *TLRR Sensitive Species and Habitat Report: Control-Silver Peak 55 kV Subtransmission Line* (Arcadis 2019b).

Of the observed non-listed special status plant species, nine special-status plant species were identified within potential Project work areas. In all cases, the number of special status plant species identified within potential Project work areas represent the maximum possible extent of Project work. In practice, due to a combination of impact avoidance methods, helicopter use, and careful siting of Project work activities, actual potential impacts will be greatly reduced.

Tables 3-3a through Tables 3-3f summarize the special-status plant species identified during the surveys in potential Project work areas within the CSP Project alignment, along with the regulatory status for each species and the number of individuals observed in potential Project work areas.

3.3.1 Special-status Plant Species—All Lands

Table 3-3a provides a summary of the special-status plant species identified during the surveys on all lands within potential Project work areas on the CSP Project Alignment.

Table 3-3a Summary of Number of Special-status Plants Observed within Potential Project Work Areas on All Lands within the CSP Project Alignment

Scientific Name	Common Name	Regulatory Status (Federal/State/ CNPS)	Project Segment[1]	Number of Special-status Plants Observed within Potential Project Work Areas[2]
Oryctes nevadensis	Nevada oryctes	- / - / 2B.1	3	0
Aliciella triodon	coyote gilia	- / - / 2B.2	3	3,240
Astragalus serenoi var. *shockleyi*	naked milkvetch, Shockley's milk-vetch	INF SCC / - / 2B.2	3	0
Chaetadelpha wheeleri	Wheeler's chaetadelpha, Wheeler's dune-broom	- / - / 2B.2	4	0
Grusonia pulchella	sagebrush cholla	- / - / 2B.2	3	9
Eremothera boothii subsp. *intermedia*	desert shredding primrose	- / - / 2B.3	3	1,130
Physocarpus alternans	dwarf ninebark	INF SCC / - / 2B.3	3	0
Sarcobatus baileyi	Bailey's greasewood	- / - / 2B.3	4	0
Stipa divaricata	small-flowered rice grass	INF SCC / - / 2B.3	3	350
	Total Number of Special-status Plants on All Lands			**4,729**

Notes:
1 Segment where observed special-status species may be potentially impacted by Project activities
2 Number based on number of individuals observed in potential Project disturbance areas in 2017 and/or 2018

CNPS – California Native Plant Society Ranks and Extensions
List 1B: Plants Rare, Threatened, or Endangered in California and Elsewhere
List 2B: Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
.1 - Seriously endangered (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 – Fairly endangered (20-80% occurrences threatened)
.3 – Not very endangered (<20% of occurrences threatened, or no current threats known)

3.3.2 Special-status Plant Species—BLM Bishop Field Office

Table 3-3b presents the special-status plant species identified during the surveys within potential Project work areas on lands managed by the BLM Bishop Field Office within the CSP Project alignment.

Table 3-3b Summary of Number of Special-status Plants Observed within Potential Project Work Areas on Lands Managed by BLM Bishop Field Office within the CSP Project Alignment

Scientific Name	Common Name	Regulatory Status (Federal/State/ CNPS)	Project Segment[1]	Number of Special-status Plants Observed within Potential Project Work Areas[2]
Oryctes nevadensis	Nevada oryctes	- / - / 2B.1	3	0
Aliciella triodon	coyote gilia	- / - / 2B.2	3	0
Astragalus serenoi var. *shockleyi*	naked milkvetch, Shockley's milk-vetch	INF SCC / - / 2B.2	3	0
Chaetadelpha wheeleri	Wheeler's chaetadelpha, Wheeler's dune-broom	- / - / 2B.2	4	0
Grusonia pulchella	sagebrush cholla	- / - / 2B.2	3	0
Eremothera boothii subsp. *intermedia*	desert shredding primrose	- / - / 2B.3	3	0
Physocarpus alternans	dwarf ninebark	INF SCC / - / 2B.3	3	0
Sarcobatus baileyi	Bailey's greasewood	- / - / 2B.3	4	0
Stipa divaricata	small-flowered rice grass	INF SCC / - / 2B.3	3	0
Total Number of Special-status Plants on BLM Lands (Bishop Office)				**0**

Notes:
1. Segment where observed special-status species may be potentially impacted by Project activities
2. Number based on number of individuals observed in potential Project disturbance areas in 2017 and/or 2018

CNPS – California Native Plant Society Ranks and Extensions
List 1B: Plants Rare, Threatened, or Endangered in California and Elsewhere
List 2B: Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
.1 - Seriously endangered (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 – Fairly endangered (20-80% occurrences threatened)
.3 – Not very endangered (<20% of occurrences threatened, or no current threats known)

3.3.3 Special-status Plant Species—BLM Ridgecrest Field Office

Table 3-3c presents the special-status plant species identified during the surveys within potential Project work areas on lands managed by the BLM Ridgecrest Field Office within the CSP Project alignment.

Table 3-3c Summary of Number of Special-status Plants Observed within Potential Project Work Areas on Lands Managed by BLM Ridgecrest Field Office within the CSP Project Alignment

Scientific Name	Common Name	Regulatory Status (Federal/State/ CNPS)	Project Segment[1]	Number of Special-status Plants Observed within Potential Project Work Areas[2]
Oryctes nevadensis	Nevada oryctes	- / - / 2B.1	3	0
Aliciella triodon	coyote gilia	- / - / 2B.2	3	120
Astragalus serenoi var. *shockleyi*	naked milkvetch, Shockley's milk-vetch	INF SCC / - / 2B.2	3	0
Chaetadelpha wheeleri	Wheeler's chaetadelpha, Wheeler's dune-broom	- / - / 2B.2	4	0
Grusonia pulchella	sagebrush cholla	- / - / 2B.2	3	9
Eremothera boothii subsp. *intermedia*	desert shredding primrose	- / - / 2B.3	3	100
Physocarpus alternans	dwarf ninebark	INF SCC / - / 2B.3	3	0
Sarcobatus baileyi	Bailey's greasewood	- / - / 2B.3	4	0
Stipa divaricata	small-flowered rice grass	INF SCC / - / 2B.3	3	0
Total Number of Special-status Plants on BLM Lands (Ridgecrest Office)				**229**

Notes:
1. Segment where observed special-status species may be potentially impacted by Project activities
2. Number based on number of individuals observed in potential Project disturbance areas in 2017 and/or 2018

CNPS – California Native Plant Society Ranks and Extensions
List 1B: Plants Rare, Threatened, or Endangered in California and Elsewhere
List 2B: Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
.1 - Seriously endangered (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 – Fairly endangered (20-80% occurrences threatened)
.3 – Not very endangered (<20% of occurrences threatened, or no current threats known)

3.3.4 Special-status Plant Species—USFS Inyo National Forest

Table 3-3d presents the special-status plant species identified during the surveys within potential Project work areas on lands managed by the USFS INF within the CSP Project alignment.

Table 3-3d Summary of Number of Special-status Plants Observed within Potential Project Work Areas on Lands Managed by U.S. Forest Service - Inyo National Forest within the CSP Project Alignment

Scientific Name	Common Name	Regulatory Status (Federal/State/ CNPS)	Project Segment[1]	Number of Special-status Plants Observed within Potential Project Work Areas[2]
Oryctes nevadensis	Nevada oryctes	- / - / 2B.1	3	0
Aliciella triodon	coyote gilia	- / - / 2B.2	3	1,000
Astragalus serenoi var. *shockleyi*	naked milkvetch, Shockley's milk-vetch	INF SCC / - / 2B.2	3	0
Chaetadelpha wheeleri	Wheeler's chaetadelpha, Wheeler's dune-broom	- / - / 2B.2	3	0
Grusonia pulchella	sagebrush cholla	- / - / 2B.2	3	0
Eremothera boothii subsp. *intermedia*	desert shredding primrose	- / - / 2B.3	3	1,030
Physocarpus alternans	dwarf ninebark	INF SCC / - / 2B.3	3	0
Sarcobatus baileyi	Bailey's greasewood	- / - / 2B.3	3	0
Stipa divaricata	small-flowered rice grass	INF SCC / - / 2B.3	3	350
Total Number of Special-status Plants on USFS Lands (Inyo NF)				**2,380**

Notes:
1. Segment where observed special-status species may be potentially impacted by Project activities
2. Number based on number of individuals observed in potential Project disturbance areas in 2017 and/or 2018

CNPS – California Native Plant Society Ranks and Extensions
List 1B: Plants Rare, Threatened, or Endangered in California and Elsewhere
List 2B: Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
.1 - Seriously endangered (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 – Fairly endangered (20-80% occurrences threatened)
.3 – Not very endangered (<20% of occurrences threatened, or no current threats known)

3.3.5 Special-status Plant Species—LADWP Lands

Table 3-3e presents the special-status plant species identified during the surveys within potential Project work areas on lands managed by the LADWP within the CSP Project alignment.

Table 3-3e Summary of Number of Special-status Plants Observed within Potential Project Work Areas on Lands Managed by Los Angeles Department of Water and Power within the CSP Project Alignment

Scientific Name	Common Name	Regulatory Status (Federal/State/ CNPS)	Project Segment[1]	Number of Special-status Plants Observed within Potential Project Work Areas[2]
Oryctes nevadensis	Nevada oryctes	- / - / 2B.1	3	0
Aliciella triodon	coyote gilia	- / - / 2B.2	3	1,000
Astragalus serenoi var. *shockleyi*	naked milkvetch, Shockley's milk-vetch	INF SCC / - / 2B.2	3	0
Chaetadelpha wheeleri	Wheeler's chaetadelpha, Wheeler's dune-broom	- / - / 2B.2	4	0
Grusonia pulchella	sagebrush cholla	- / - / 2B.2	3	0
Eremothera boothii subsp. *intermedia*	desert shredding primrose	- / - / 2B.3	3	0
Physocarpus alternans	dwarf ninebark	INF SCC / - / 2B.3	3	0
Sarcobatus baileyi	Bailey's greasewood	- / - / 2B.3	4	0
Stipa divaricata	small-flowered rice grass	INF SCC / - / 2B.3	3	0
Total Number of Special-status Plants on LADWP Lands				**1,000**

Notes:
1. Segment where observed special-status species may be potentially impacted by Project activities
2. Number based on number of individuals observed in potential Project disturbance areas in 2017 and/or 2018

CNPS – California Native Plant Society Ranks and Extensions
List 1B: Plants Rare, Threatened, or Endangered in California and Elsewhere
List 2B: Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
.1 - Seriously endangered (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 – Fairly endangered (20-80% occurrences threatened)
.3 – Not very endangered (<20% of occurrences threatened, or no current threats known)

3.3.6 Special-status Plant Species—Private Lands

Table 3-3f presents the special-status plant species identified during the surveys within potential Project work areas on private lands within the CSP Project alignment.

Table 3-3f Summary of Number of Special-status Plants Observed within Potential Project Work Areas on Private Land within the CSP Project Alignment

Scientific Name	Common Name	Regulatory Status (Federal/State/ CNPS)	Project Segment[1]	Number of Special-status Plants Observed within Potential Project Work Areas[2]
Oryctes nevadensis	Nevada oryctes	- / - / 2B.1	3	0
Aliciella triodon	coyote gilia	- / - / 2B.2	3	1,120
Astragalus serenoi var. *shockleyi*	naked milkvetch, Shockley's milk-vetch	INF SCC / - / 2B.2	3	0
Chaetadelpha wheeleri	Wheeler's chaetadelpha, Wheeler's dune-broom	- / - / 2B.2	4	0
Grusonia pulchella	sagebrush cholla	- / - / 2B.2	3	0
Eremothera boothii subsp. *intermedia*	desert shredding primrose	- / - / 2B.3	3	0
Physocarpus alternans	dwarf ninebark	INF SCC / - / 2B.3	3	0
Sarcobatus baileyi	Bailey's greasewood	- / - / 2B.3	4	0
Stipa divaricata	small-flowered rice grass	INF SCC / - / 2B.3	3	0
	Total Number of Special-status Plants on Private Lands			**1,120**

Notes:
1. Segment where observed special-status species may be potentially impacted by Project activities
2. Number based on number of individuals observed in potential Project disturbance areas in 2017 and/or 2018

CNPS – California Native Plant Society Ranks and Extensions
List 1B: Plants Rare, Threatened, or Endangered in California and Elsewhere
List 2B: Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
.1 - Seriously endangered (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 – Fairly endangered (20-80% occurrences threatened)
.3 – Not very endangered (<20% of occurrences threatened, or no current threats known)

3.4 Wetlands and Jurisdictional Features in Potential Project Work Areas

Potentially jurisdictional wetlands and non-wetland waters occur throughout the CSP Project alignment. General wetland habitats that occur within Segments 1, 2, 3, and 4 of the CSP Project alignment include emergent freshwater wetlands, scrub-shrub wetlands, and forested/woodland wetlands. Potentially jurisdictional non-wetland waters found in Segments 1, 2, 3, 4, and 5 are generally classified as rivers and streams. The Owens River is the only major river within the CSP Project alignment. Surface waters within Segment 3 also include Silver Creek and Wyman Creek. More information on the surveyed jurisdictional features is detailed in the *Wetlands and Other Waters Jurisdictional Delineation Report: Control-Silver Peak 55 kV Subtransmission Line* (Arcadis 2019a).

Tables 3-4a-i through Tables 3-4f-i summarize the acres of regulated Waters of the U.S. and acres of regulated Waters of the State within potential Project work areas within the CSP Project alignment,

including number of features and anticipated maximum temporary and permanent impacts.

Tables 3-4a-ii through Tables 3-4f-ii summarize the acres of jurisdictional streambeds within potential Project work areas within the CSP Project alignment, including number of features and anticipated maximum temporary and permanent impacts.

In all cases, the listed impacts within potential Project work areas represent the maximum possible extent of Project work. In practice, due to a combination of impact avoidance methods, helicopter use, and careful siting of Project work activities, actual potential impacts will be greatly reduced.

3.4.1 Wetlands and Jurisdictional Features—All Lands

Table 3-4a-i summarizes the acres of regulated Waters of the U.S. within potential Project work areas on all lands within the CSP Project alignment, including number of features and anticipated maximum temporary and permanent impacts.

Table 3-4a-i Summary of Maximum Acres of Regulated Waters of the U.S. within Potential Project Work Areas on All Lands within the CSP Project Alignment

Feature Type	Total Number of Features Mapped	Temporary Impacts		Permanent Impacts	
		Acres	Features	Acres	Features
404 wetlands	6	1	6	0.8	4
404 other waters	44	10.3	44	2	23
CDFW 1602	44	10.3	44	2	23

Table 3-4a-ii summarizes the acres of jurisdictional streambeds within potential Project work areas on all lands within the CSP Project alignment, including number of features and anticipated maximum temporary and permanent impacts.

Table 3-4a-ii Summary of Maximum Acres of Jurisdictional Streambeds within Potential Project Work Areas within the CSP Project Alignment

Feature Type	Total Number of Features Mapped	Temporary Impacts		Permanent Impacts	
		Acres	Features	Acres	Features
404 other waters	44	10.3	44	2	23
CDFW 1602	44	10.3	44	2	23

3.4.2 Wetlands and Jurisdictional Features—BLM Bishop Field Office

Table 3-4b-i presents the acres of regulated Waters of the U.S. within potential Project work areas on lands managed by the BLM Bishop Field Office within the CSP Project alignment, including number of features and anticipated maximum temporary and permanent impacts.

Table 3-4b-i Summary of Maximum Acres of Regulated Waters of the U.S. within Potential Project Work Areas on Lands Managed by BLM Bishop Office within the CSP Project Alignment

Feature Type	Total Number of Features Mapped	Temporary Impacts		Permanent Impacts	
		Acres	Features	Acres	Features
404 wetlands	0	0	0	0	0
404 other waters	2	0.008	2	0.004	1
CDFW 1602	2	0.008	2	0.004	1

Table 3-4b-ii presents the acres of jurisdictional streambeds within potential Project work areas on lands managed by the BLM Bishop Field Office within the CSP Project alignment, including number of features and anticipated maximum temporary and permanent impacts.

Table 3-4b-ii Summary of Maximum Acres of Jurisdictional Streambeds within Potential Project Work Areas on Lands Managed by BLM Bishop Office within the CSP Project Alignment

Feature Type	Total Number of Features Mapped	Temporary Impacts		Permanent Impacts	
		Acres	Features	Acres	Features
404 other waters	2	0.008	2	0.004	1
CDFW 1602	2	0.008	2	0.004	1

3.4.3 Wetlands and Jurisdictional Features—BLM Ridgecrest Field Office

Table 3-4c-i presents the acres of regulated Waters of the U.S. within potential Project work areas on lands managed by the BLM Ridgecrest Field Office within the CSP Project alignment, including number of features and anticipated maximum temporary and permanent impacts.

Table 3-4c-i Summary of Maximum Acres of Regulated Waters of the U.S. within Potential Project Work Areas on Lands Managed by BLM Ridgecrest Office within the CSP Project Alignment

Feature Type	Total Number of Features Mapped	Temporary Impacts		Permanent Impacts	
		Acres	Features	Acres	Features
404 wetlands	0	0	0	0	0
404 other waters	22	0.5	22	0.06	8
CDFW 1602	22	0.5	22	0.06	8

Table 3-4c-ii presents the acres of jurisdictional streambeds within potential Project work areas on lands managed by the BLM Ridgecrest Field Office within the CSP Project alignment, including number of features and anticipated maximum temporary and permanent impacts.

Table 3-4c-ii Summary of Maximum Acres of Jurisdictional Streambeds within Potential Project Work Areas on Lands Managed by BLM Ridgecrest Office within the CSP Project Alignment

Feature Type	Total Number of Features Mapped	Temporary Impacts		Permanent Impacts	
		Acres	Features	Acres	Features
404 other waters	22	0.5	22	0.06	8
CDFW 1602	22	0.5	22	0.06	8

3.4.4 Wetlands and Jurisdictional Features—USFS Inyo National Forest

Table 3-4d-i presents the acres of regulated Waters of the U.S. within potential Project work areas on lands managed by the U.S. Forest Service Inyo National Forest within the CSP Project alignment, including number of features and anticipated maximum temporary and permanent impacts.

Table 3-4d-i Summary of Maximum Acres of Regulated Waters of the U.S. within Potential Project Work Areas on Lands Managed by U.S. Forest Service – Inyo National Forest within the CSP Project Alignment

Feature Type	Total Number of Features Mapped	Temporary Impacts		Permanent Impacts	
		Acres	Features	Acres	Features
404 wetlands	2	0.4	2	0.1	2
404 other waters	13	9.4	13	1.8	10
CDFW 1602	13	9.4	13	1.8	10
Riparian Conservation Areas	411	90.2	2	16.8	2

Table 3-4d-ii presents the acres of jurisdictional streambeds within potential Project work areas on lands managed by the U.S. Forest Service Inyo National Forest within the CSP Project alignment, including number of features and anticipated maximum temporary and permanent impacts.

Table 3-4d-ii Summary of Maximum Acres of Jurisdictional Streambeds within Potential Project Work Areas on Lands Managed by U.S. Forest Service – Inyo National Forest within the CSP Project Alignment

Feature Type	Total Number of Features Mapped	Temporary Impacts		Permanent Impacts	
		Acres	Features	Acres	Features
404 other waters	13	9.4	13	1.8	10
CDFW 1602	13	9.4	13	1.8	10

3.4.5 Wetlands and Jurisdictional Features—LADWP Lands

Table 3-4e-i presents the acres of regulated Waters of the U.S. within potential Project work areas on lands managed by the Los Angeles Department of Water and Power within the CSP Project alignment, including number of features and anticipated maximum temporary and permanent impacts.

Table 3-4e-i Summary of Maximum Acres of Regulated Waters of the U.S. within Potential Project Work Areas on Lands Managed by Los Angeles Department of Water and Power within the CSP Project Alignment

Feature Type	Total Number of Features Mapped	Temporary Impacts		Permanent Impacts	
		Acres	Features	Acres	Features
404 wetlands	4	0.6	4	0.05	2
404 other waters	7	0.5	7	0.06	4
CDFW 1602	7	0.5	7	0.06	4

Table 3-4e-ii presents the acres of jurisdictional streambeds within potential Project work areas on lands managed by the Los Angeles Department of Water and Power within the CSP Project alignment, including number of features and anticipated maximum temporary and permanent impacts.

Table 3-4e-ii Summary of Maximum Acres of Jurisdictional Streambeds within Potential Project Work Areas on Lands Managed by Los Angeles Department of Water and Power within the CSP Project Alignment

Feature Type	Total Number of Features Mapped	Temporary Impacts		Permanent Impacts	
		Acres	Features	Acres	Features
404 other waters	7	0.5	7	0.06	4
CDFW 1602	7	0.5	7	0.06	4

3.4.6 Wetlands and Jurisdictional Features—Private Lands

Table 3-4f-i presents the acres of regulated Waters of the U.S. within potential Project work areas on private lands within the CSP Project alignment, including number of features and anticipated maximum temporary and permanent impacts.

Table 3-4f-i Summary of Maximum Acres of Regulated Waters of the U.S. within Potential Project Work Areas on Private Lands within the CSP Project Alignment

Feature Type	Total Number of Features Mapped	Temporary Impacts		Permanent Impacts	
		Acres	Features	Acres	Features
404 wetlands	0	0	0	0	0
404 other waters	1	0.007	1	0	0
CDFW 1602	1	0.007	1	0	0

Table 3-4f-ii presents the acres of jurisdictional streambeds within potential Project work areas on private lands within the CSP Project alignment, including number of features and anticipated maximum temporary and permanent impacts.

Table 3-4f-ii Summary of Maximum Acres of Jurisdictional Streambeds within Potential Project Work Areas on Private Lands within the CSP Project Alignment

Feature Type	Total Number of Features Mapped	Temporary Impacts		Permanent Impacts	
		Acres	Features	Acres	Features
404 other waters	1	0	0	0	0
CDFW 1602	1	0	0	0	0

4.0 Mitigation Strategy

SCE's approach to mitigate for impacts to biological and water resources due to construction of the CSP Project is to restore temporarily impacted areas consistent with Conservation and Management Action (CMA) LUPA-BIO-7 in the Desert Renewable Energy Conservation Plan (DRECP) Land Use Plan Amendment (DRECP LUPA; BLM 2016), and measures included in the Land Management Plan for the Inyo National Forest (USFS 2018). The measures contained in this Plan—including erosion control, soil stabilization, and restoration of areas temporarily impacted by the Project—will generally be applied Project-wide as described further in Sections 4 through 12.

On federal lands, temporary Project disturbance areas resulting in impacts to native habitats will be treated as "restoration areas" (see POD Attachment G). The term "restoration area", as used in this HRP, reflects those areas that are subject to required habitat restoration activities. Restoration areas are subject to quantifiable performance standards or targets (e.g., vegetation cover and species diversity, or a return to pre-construction conditions). Quantitative monitoring will be conducted to document the progress of restoration areas in meeting performance targets. In addition, qualitative and quantitative monitoring will be conducted to assess maintenance needs, verify whether site stabilization has been achieved, and record the status of invasive plants in the site and the effectiveness of weed abatement measures.

On non-federal lands, temporary impacts shall only be subject to the requirements of the Storm Water Pollution Prevention Plan (SWPPP) and the IPMP. No additional goals, objectives, or success criteria regarding habitat condition are required for these sites. The HRP does not apply to private land. Temporary impacts on private lands would be addressed according to landowner requirements.

4.1 BLM-Administered Lands

SCE will apply DRECP LUPA-BIO-7 on lands managed by the Bishop Field Office and on lands managed by the Ridgecrest Field Office. The mitigation strategy on BLM land is to restore native vegetation types that reflect those in surrounding areas, consistent with DRECP LUPA-BIO-7.

Where DRECP vegetation types or Focus or BLM Special Status Species habitats may be affected by ground- disturbance and/or vegetation removal during pre-construction, construction, operations, and decommissioning related activities but are not converted (e.g., by long-term ground disturbance, or otherwise altered in a substantial way that can no longer support pre-existing native habitats), restore these areas following the standards, approved by BLM authorized officer, following the most recent BLM policies and procedures for the vegetation community or species habitat disturbance/impacts as appropriate, summarized below.

The CSP project is a linear project with small work areas. The means of establishing native communities will prioritize preservation of soils within temporary use areas supporting native vegetation. Revegetation may be performed through application of native seed mixes and select use of native plants. Small disturbance areas may not require seed application and can be passively restored through effective weed abatement and soil stabilization. SCE will:

- Implement site-specific habitat restoration actions for the areas affected including specifying and using:

    - Appropriate soil preparation (e.g., preservation of intact native soils, decompaction and/ or topsoil salvage for each work area)
    - Application of appropriate revegetation materials (appropriate seed cuttings or select plants)
    - Implementation timing (e.g., appropriate season, sufficient rainfall)
    - Location
    - Success criteria
    - Monitoring measures
    - Contingency measures, relevant for restoration, which includes seeding that follows BLM policy when on BLM administered lands.
- Salvage and relocate cactus, nolina, and yucca from the site prior to disturbance using BLM protocols. To the maximum extent practicable for short-term disturbed areas (see Glossary of Terms), the cactus and yucca will be re-planted back to the original site.
- Restore and reclaim short-term disturbed areas, including pipelines, transmission projects, staging areas, and short-term construction-related roads immediately or during the most biologically appropriate season as determined in the activity/project specific environmental analysis and decision, following completion of construction activities to reduce the amount of habitat converted at any one time and promote recovery to natural habitats and vegetation as well as climate refugia and ecosystem services such carbon storage.

4.2 USFS INF

The mitigation strategy on lands managed per the INF LMP is to restore native vegetation types that reflect those in surrounding areas, consistent with applicable desired conditions outlined in the INF LMP. These include desired conditions for subalpine forests (including Great Basin bristlecone pine forests and limber pine forests), aspen groves, pinyon-juniper woodland, high desert scrub (including xeric shrub, blackbrush, mountain mahogany, and sagebrush habitats), riparian habitats, and other special habitats.

Standards for restoration in sage grouse habitats include the following:

- Standard SPEC-SG-STD 01: Habitat restoration projects for the sage-grouse shall be designed to meet one or more of the following habitat needs:
    - Promote the maintenance of extensive, intact sagebrush communities;
    - Limit the expansion or dominance of invasive species, including cheatgrass, and the expansion of pine species, including pinyon-juniper and Jeffrey pine;
    - Maintain or improve soil site stability, hydrologic function, and biological integrity; and
    - Enhance the native plant community.
- Standard SPEC-SG-STD 02: Habitat restoration projects for the sage-grouse must include measures to improve suitability of breeding, brood rearing, or wintering habitat.
- Standard SPEC-SG-STD 03: Within sage-grouse habitat, ensure that habitat restoration activities, vegetation treatments, or other authorized uses on the national forest, maintain or move toward vegetation desired conditions for sage-grouse. Short-term (1 to 10 year) impacts are allowed to deviate from these habitat standards, if the long-term (10 to 30 years) project objective is to achieve desired conditions.
- Standard SPEC-SG-STD 05: Require site-specific project mitigation if needed to insure no net loss of habitat within the Inyo National Forest due to project disturbance.

- Standard SPEC-SG-STD 09: Within sage-grouse priority habitat, use genetically and climatically appropriate native plant and seed material when seeding the area.

The Project bisects high elevation special habitats and sage grouse habitats within INF, including vegetation types that occur at or above 6,000 feet above mean sea level (amsl) with a short growing season and/or challenging conditions for seedling establishment. Therefore, container plants will be utilized to restore native vegetation types on USFS lands, and will be supplemented with seeding of associated species, as described further in Section 5.0. As a general rule, seed (for direct application and propagation) and/or cuttings will be collected onsite from areas within 1,000 vertical feet of the elevation of the site from sources on similar soil parent material (e.g., dolomite or silicate soils) located on slopes with similar aspects in order to utilize seed that is best adapted to each site's microclimate variations. The USFS botanist will provide further details on seed collection areas. Seed collecting zones may vary depending on the plant species being collected and availability of seed. Seed collection areas will be determined by the USFS botanist, or from adjacent areas with approval from USFS.

LADWP Lands: The mitigation strategy on LADWP land will be to restore native communities using seeding as the primary means of plant establishment.

Restoration efforts will encompass objective success standards to evaluate progress in meeting success standards (see Section 10). In addition to qualitative restoration monitoring, quantitative monitoring will be conducted to document the progress of restoration sites in meeting those goals.

This Plan outlines the methods for restoration of areas temporarily disturbed by the Project. The goal of the restoration efforts is for the treated areas to exhibit evidence of increasing native vegetative cover, density, diversity, and species dominance that is similar to the pre-disturbance conditions or existing conditions in adjacent native vegetation.

5.0 Baseline Conditions

Documentation of baseline conditions is an important component of the restoration program, as the performance criteria for the restoration activities will be based on these data. Baseline condition (pre-impact) data will be collected for temporary impact areas. Pre-impact data for the Project site consist of identifying the vegetation community (native species, nonnative species); percent native cover; percent nonnative cover; presence of special status species; soils present; slope aspect(s); any observed disturbance from previous or historic activities; and photographs. The pre-construction condition of these temporary impact areas will be used to evaluate the restoration of those areas. Reference sites adjacent to existing permanently-disturbed areas (e.g., the area around the base of existing poles maintained in a cleared state) will be selected to guide the restoration of these areas.

Vegetation surveys conducted in 2017, 2018, and 2022 documented 36 vegetation alliances and 55 associations present in the CSP Project area (Table 3-1).

Reference site data can also be used to assess performance issues in restoration areas compared with nearby natural sites to evaluate if a region-wide issue is affecting the revegetation success and to refine performance standards, if needed.

6.0 Implementation

This section describes general methods that will be used to restore vegetation communities and habitats impacted by the Project. Restoration of temporary disturbance areas following construction will occur as soon as practical after completion of construction activities in the affected area. Plan implementation will include tasks that will be completed prior to construction, during construction, and after construction.

Activities to be completed prior to construction include:

- Establishment of baseline conditions;
- Site-specific restoration planning;
- Seed source identification and collection during the appropriate season (at a minimum one year prior to construction).

Activities to be completed during construction include:

- Plant material salvage and procurement, including salvaging of cacti (Section 6.1.4) and special-status plants (Section 6.1.3) as well as salvage of material to be used for mulch;
- Topsoil salvaging and stockpiling to preserve the microbial network within the soil and retain the native seed bank and organic material important to nutrient cycles within the soil;
- Propagation of container plantings, as needed.

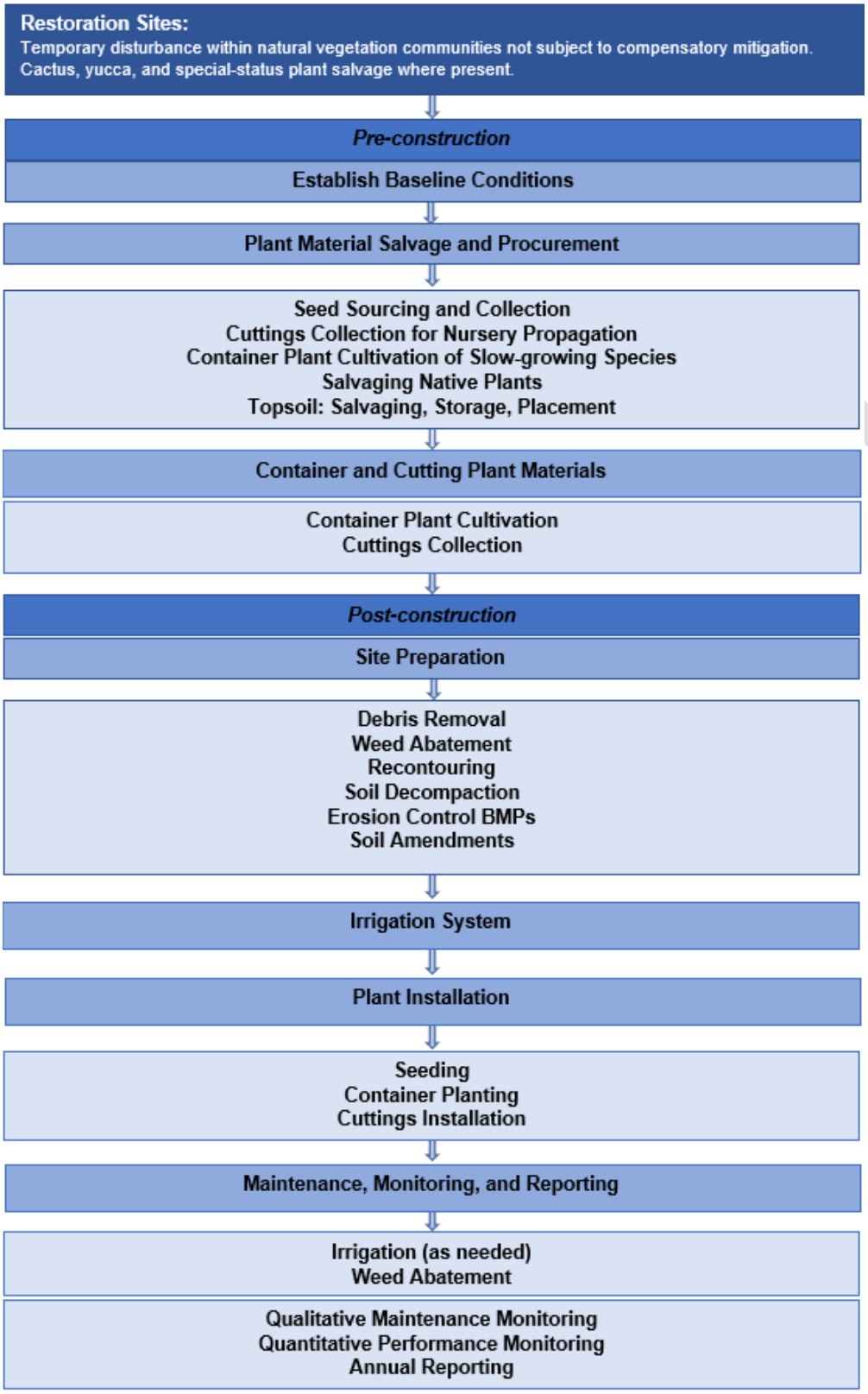
Post-construction activities include:

- Site preparation;
- Plant installation;
- Maintenance;
- Monitoring and reporting.
- The activities and sequencing associated with Project restoration are summarized in Sections 5 through 12 and are shown in a generalized flow chart (Figure 1).

6.1 Plant Material Procurement and Salvaging

Plant materials used for restoration will be derived from on-site sources to the extent feasible, and seed collection will commence once the Project is approved. Plant materials collected within the Project area for propagation will be labeled indicating the watershed and elevation at which they occur (such as Owens Valley, Silver Canyon, Wyman Canyon) and plant palettes presented below will be refined during the plant material collection process to ensure restoration within the watershed, location, and elevation in which they occur, depending on existing dominant species. This includes seed and cutting collection; container plant propagation from site-collected propagules; salvage of cacti and special-status plants; and salvage of material to be used for mulch. Seed materials collected on-site may also be used to propagate supplementary planting materials as described in this section and in Section 6.2. Generally, acquisition of propagules would occur prior to and during the construction process during the appropriate season for seed and cutting maturation, although remedial collection may be necessary to attain restoration goals.

Figure 1 Restoration Sequence



Selection of on-site plant material for collection and salvage will be made by the Restoration Ecologist in consultation with Project construction personnel. As described in this Plan, plant salvage will be determined in part by the plant's health and the probability of transplant success.

6.1.1 Mitigation Plant Propagule Source and Collection

Seeds and cuttings may be obtained from on-site sources prior to or during construction, and seed may also be purchased from commercial vendors for sites below 7,000 feet. Purchased seed would comply with U.S. Department of Agriculture rules and regulations under the Federal Seed Act. Purity and germination rates would be warranted by the seed supplier (e.g., all seed mixtures will be certified "weed free"). All seed would be furnished in sealed standard containers.

On-site seed and cutting collection would take place where authorized by the land management agency (primarily BLM or USFS) in the vicinity of the Project area. Seeds must be acquired from the appropriate provisional seed transfer zones on federal lands (USFS 2022). SCE will work with land management agencies to secure appropriate propagule collection authorizations and establish collection areas ~~e~~ Seed collection is described in more detail below. Container plant cultivation is summarized in Section 6.2.1. Collection of cuttings is described in Section 6.2.2.

Seed collection will commence once the Project is approved and may vary across the Project area as well as by species, depending on rarity and retention of seed viability over time. Native seed collections will be weed-free and stored in cool dry conditions until ready to use. Collection efforts will follow characterization of potential restoration sites and determination of planting palettes. Seed collection will target as many native annual and perennial species as are available during each collection phase.

Seed that has become wet, moldy, or otherwise damaged in transit or in storage would not be used and would be rejected and removed from the site. If sufficient seed cannot be collected/obtained for a particular species or vegetation community, seed will be substituted with seed of a comparable species with approval from the appropriate land management agency. Changes to seed or planting palettes will be submitted to BLM, CPUC, and USFS for approval.

Commercial seed for use in restoration areas below 7,000 feet shall contain no noxious, prohibited, or restricted weed seeds and shall contain no more than 0.5 percent by weight of other weed seeds. Seed may contain up to 2.0 percent of "other crop" seed by weight, including the seed of other agronomic crops and native plants; however, a lower percentage of other crop seed is recommended. Seed tags or other official documentation shall be submitted to BLM and/or USFS at least 14 days before the date of proposed seeding for acceptance. Seed that does not meet the above criteria shall not be applied to public lands.

Nine planting palettes based on dominant vegetation types have been proposed for use across the Project area (see Tables 6-1 through 6-9) to be applied to temporary disturbance areas. These include planting palettes for Subalpine Forest (Bristlecone Pine Woodland, Limber Pine Woodland), Aspen Groves, Singleleaf Pinyon – Utah Juniper Woodland, Mountain Sagebrush Scrub (High Desert Scrub), High Desert Wash Shrubland, Saltbush – Alkali Scrub, Riparian Woodland, Moist Meadows and Wetland Margins, and Freshwater Marsh. Planting palettes include species common to several alliances and associations that occur in similar habitats or at similar elevations and may be modified on a case-by-case basis to target dominant species in a given area or depending upon local seed availability. Table 6-9 provides an initial analysis of which planting palette may be used in each USFS Landtype Association shown in Table 3-1d-ii.

Vegetation communities that will not be impacted by Project activities are not included in the discussion below but are addressed in Chapter 3.

The Restoration Ecologist will work with the agencies and the Biological Compliance Lead in the field to determine the transition point for use of each planting palette to support site-specific restoration planning.

6.1.1.1 Subalpine Forest (Bristlecone Pine Woodland – Limber Pine Woodland)

Bristlecone and Limber Pine Woodlands are dominated by Great Basin bristlecone pine (*Pinus longaeva*), an extremely long-lived and slow-growing evergreen tree, and limber pine (*Pinus flexilis*). These woodlands occur primarily in the subalpine zone of the White Mountains above 9,000 feet amsl within Segment 3 of the CSP Project alignment, often on nutrient-deficient dolomite, limestone, and silicate substrates. Two alliances and two associations of Subalpine Forest vegetation overlap potential Project work areas and were characterized during the field surveys. Both alliances include bristlecone pine as a dominant tree. Bristlecone Pine Woodland is dominated primarily by bristlecone pine. Limber Pine Woodland is dominated by both limber pine and bristlecone pine.

Alliances and associations of Bristlecone Pine Woodland and Limber Pine Woodlands within the CSP Project alignment include:

Vegetation Alliance Common Name	**Association Name**
Bristlecone pine woodland	*Pinus longaeva* Association
Limber pine woodland	*Pinus flexilis - Pinus longaeva* Provisional Association

Impacts to subalpine forest will be minimized to the maximum extent feasible due to a combination of impact avoidance methods, helicopter use, and careful siting of Project work activities, and topsoil salvaging and placement will be prioritized where soil is disturbed, see Section 3. The proposed Subalpine Forest planting palette includes observed dominant native woody species in Bristlecone and Limber Pine Woodlands, as well as common perennial forbs and a perennial grass. It also includes two species of sagebrush that serve as food and habitat for the greater sage grouse.

Table 6-1a Subalpine Forest Planting Palette – Dolomite Substrates

Scientific Name	Common Name	Growth Habit	Propagule Type	Number of Containers, Cuttings, or Pounds per Acre (Pure Live Seed)	Segment(s)
Juniperus osteosperma	Utah juniper	tree	container	TBD	3
Pinus flexilis	limber pine	tree	container	TBD	3
Pinus longaeva	bristlecone pine	tree	container	TBD	3
Pinus monophylla	singleleaf pinyon pine	tree	container	TBD	3
Artemisia arbuscula	black sagebrush	shrub	container	TBD	
Cercocarpus ledifolius	curl-leaf mountain-mahogany	shrub	container	TBD	3
Chamaebatiaria millefolium	desert sweet, fern bush	shrub	seed	1	3
Chrysothamnus viscidiflorus	green rabbitbrush	shrub	seed	1	3
Ephedra viridis	green Mormon tea	shrub	container	TBD	3
Philadelphus microphyllus var. *microphyllus*	littleleaf mockorange	shrub	container	TBD	3
Ribes cereum	mountain wax current	shrub	container	TBD	3
Symphoricarpos longiflorus	desert snowberry	shrub	container	TBD	3
Leptosiphon nuttallii	Nuttall's linanthus	perennial forb	seed	1	3
Linum lewisii	blue flax	perennial forb	seed	1	3
Monardella odoratissima	mountain pennyroyal	perennial forb	seed	0.5	3
Stipa hymenoides	Indian ricegrass	perennial grass	seed	1	3

Note:
Planting palette is dependent on availability of seed and other propagules, as well as dominant vegetation at given restoration site

Table 6-1b Subalpine Forest Planting Palette – Silicate Substrates

Scientific Name	Common Name	Growth Habit	Propagule Type	Number of Containers, Cuttings, or Pounds per Acre (Pure Live Seed)	Segment(s)
Juniperus osteosperma	Utah juniper	tree	container	TBD	3
Pinus flexilis	limber pine	tree	container	TBD	3
Pinus longaeva	bristlecone pine	tree	container	TBD	3
Pinus monophylla	singleleaf pinyon pine	tree	container	TBD	3
Artemisia arbuscula	black sagebrush	shrub	container	TBD	
Artemisia tridentata subsp. *vaseyana*	mountain big sagebrush	shrub	container	TBD	3
Cercocarpus ledifolius	curl-leaf mountain-mahogany	shrub	container	TBD	3
Chamaebatiaria millefolium	desert sweet, fern bush	shrub	seed	1	3
Chrysothamnus viscidiflorus	green rabbitbrush	shrub	seed	1	3
Ephedra viridis	green Mormon tea	shrub	container	TBD	3
Philadelphus microphyllus var. *microphyllus*	littleleaf mockorange	shrub	container	TBD	3
Ribes cereum	mountain wax current	shrub	container	TBD	3
Symphoricarpos longiflorus	desert snowberry	shrub	container	TBD	3
Eriogonum ovalifolium	cushion buckwheat	perennial forb	seed	1	3
Leptosiphon nuttallii	Nuttall's linanthus	perennial forb	seed	1	3
Lupinus argenteus	silvery lupine	perennial forb	seed	1	3
Monardella odoratissima	mountain pennyroyal	perennial forb	seed	0.5	3
Koeleria macrantha	June grass	perennial grass	seed	1	3

Note:
Planting palette is dependent on availability of seed and other propagules, as well as dominant vegetation at given restoration site

6.1.1.2 Aspen Groves

Aspen Groves occur in one location within the CSP Project alignment near the head of Silver Canyon at approximately 10,000 feet (amsl). Aspen Groves are dominated by quaking aspen (*Populus tremuloides*) and also include bristlecone pine and limber pine as associated species in this location.

Aspen Groves (*Populus tremuloides* Forest and Woodland Alliance) includes one association in this area, the *Populus tremuloides* – *Pinus longaeva* Provisional Association.

The proposed Aspen Groves planting palette is similar to the nearby Subalpine Forest planting palette and includes dominant woody species as well as perennial forbs and a perennial grass. It also includes two species of sagebrush that serve as food and habitat for the greater sage grouse.

Impacts to Aspen Groves will be minimized to the maximum extent feasible due to a combination of impact avoidance methods, helicopter use, and careful siting of Project work activities, and topsoil salvaging and placement will be prioritized where soil is disturbed, see Section 3.

Table 6-2 Aspen Groves Planting Palette

Scientific Name	Common Name	Growth Habit	Propagule Type	Number of Containers, Cuttings, or Pounds per Acre (Pure Live Seed)	Segment(s)
Pinus flexilis	limber pine	tree	container	TBD	3
Pinus longaeva	bristlecone pine	tree	container	TBD	3
Populus tremuloides	quaking aspen	tree	container	TBD	3
Artemisia arbuscula	black sagebrush	shrub	container	TBD	3
Artemisia tridentata subsp. *vaseyana*	mountain big sagebrush	shrub	container	TBD	3
Cercocarpus ledifolius	curl-leaf mountain-mahogany	shrub	container	TBD	3
Chamaebatiaria millefolium	desert sweet, fern bush	shrub	seed	1	3
Chrysothamnus viscidiflorus	green rabbitbrush	shrub	seed	1	3
Ephedra viridis	green Mormon tea	shrub	container	TBD	3
Ribes cereum	mountain wax currant	shrub	container	TBD	3
Symphoricarpos longiflorus	desert snowberry	shrub	container	TBD	3
Leptosiphon nuttallii	Nuttall's linanthus	perennial forb	seed	1	3
Lupinus argenteus	silvery lupine	perennial forb	seed	1	3
Monardella odoratissima	mountain pennyroyal	perennial forb	seed	0.5	3
Koeleria macrantha	June grass	perennial grass	seed	1	3

Notes:
Planting palette is dependent on availability of seed and other propagules, as well as dominant vegetation at given restoration site

6.1.1.3 Singleleaf Pinyon - Utah Juniper Woodland

Singleleaf Pinyon – Utah Juniper Woodland is dominated by singleleaf pinyon pine (*Pinus monophylla*), a tall long-lived tree in the Pine Family (Pinaceae); woodlands dominated by singleleaf pinyon pine occur above 6,400 feet amsl in the White Mountains in Segment 3 of the CSP Project alignment at elevations just below Limber Pine and Bristlecone Pine Woodlands on the upper slopes of Silver Canyon and Wyman Canyon. Utah juniper is much less common than singleleaf pinyon pine within the CSP Project alignment. Pockets of two uncommon shrubs form associations of Utah Serviceberry – Birch Leaf Mountain Mahogany – Small Leaf Mountain Mahogany Scrub surrounded by areas supporting Singleleaf Pinyon – Utah Juniper Woodland vegetation in Segment 3: littleleaf mockorange (*Philadelphus microphyllus*) and small-leaf mountain-mahogany (*Cercocarpus intricatus*).

Two alliances and 3 associations of Singleleaf Pinyon – Utah Juniper Woodland vegetation overlap potential Project work areas and were characterized during the field surveys (Table 3-1).

Vegetation Alliance Common Name	Association Name
Singleleaf pinyon – Utah juniper woodland	*Pinus monophylla – (Juniperus osteosperma) / Artemisia tridentata* (subsp. *vaseyana*) Association
Utah Serviceberry – Birch Leaf Mountain Mahogany – Small Leaf Mountain Mahogany Scrub	*Philadelphus microphyllus* var. *microphyllus* Provisional Association *Cercocarpus intricatus* Association

The proposed Singleleaf Pinyon – Utah Juniper Woodland planting palette includes observed dominant native woody species in Singleleaf Pinyon – Utah Juniper Woodland and Utah Serviceberry – Birch Leaf Mountain Mahogany – Small Leaf Mountain Mahogany Scrub, as well as common perennial forbs and a perennial grass. It also includes mountain big sagebrush, which serves as food and habitat for the greater sage grouse.

Impacts to Singleleaf Pinyon – Utah Juniper Woodland will be minimized to the maximum extent feasible due to a combination of impact avoidance methods, helicopter use, and careful siting of Project work activities, and topsoil salvaging and placement will be prioritized where soil is disturbed, see Section 3.

Table 6-3 Singleleaf Pinyon – Utah Juniper Woodland Planting Palette

Scientific Name	Common Name	Growth Habit	Propagule Type	Number of Containers, Cuttings, or Pounds per Acre (Pure Live Seed)	Segment(s)
Pinus monophylla	singleleaf pinyon pine	tree	container	TBD	3
Artemisia tridentata subsp. vaseyana	mountain big sagebrush	shrub	container	TBD	3
Cercocarpus intricatus	small-leaved mountain-mahogany	shrub	container	TBD	3
Cercocarpus ledifolius	curl-leaf mountain-mahogany	shrub	container	TBD	3
Chrysothamnus viscidiflorus	green rabbitbrush	shrub	seed	1	3
Coleogyne ramosissima	blackbrush	shrub	container	TBD	3
Ephedra viridis	Green Mormon tea	shrub	container	TBD	3
Eriogonum fasciculatum var. polifolium	California buckwheat	shrub	seed	2	3
Holodiscus discolor var. microphyllus	small-leaved creambush	shrub	seed	0.5	3
Krascheninnikovia lanata	winterfat	shrub	container	TBD	3
Philadelphus microphyllus var. *microphyllus*	littleleaf mockorange	shrub	container	TBD	3
Purshia tridentata var. glandulosa	bitterbrush, antelope brush	shrub	seed	1	3
Ribes cereum	mountain wax current	shrub	container	TBD	3
Symphoricarpos longiflorus	desert snowberry	shrub	container	TBD	3
Eriogonum ovalifolium	cushion buckwheat	perennial forb	seed	1	3
Leptosiphon nuttallii	Nuttall's linanthus	perennial forb	seed	1	3
Lupinus argenteus	silvery lupine	perennial forb	seed	1	3
Stipa comata	needle-and-thread grass	perennial grass	seed	1	3

Note:
Planting palette is dependent on availability of seed and other propagules, as well as dominant vegetation at given restoration site

6.1.1.4 High Desert Scrub (includes Mountain Sagebrush Scrub, Mountain Mahogany Scrub, Blackbush Scrub, and others)

High Desert Scrub is widespread in all segments of the CSP Project alignment on drier slopes below 6,400 feet amsl. High desert scrub is dominated by different shrub species, depending on

location, including mountain big sagebrush (*Artemisia tridentata* subsp. *vaseyana*), big sagebrush (*Artemisia tridentata* subsp. *tridentata*), blackbrush (*Coleogyne ramosissima*), bitterbrush (*Purshia tridentata*), curl-leaf mountain-mahogany (*Cercocarpus ledifolius*), winterfat *(Krascheninnikovia lanata*), green ephedra (*Ephedra viridis*), spiny menodora (*Menodora spinescens*), shadscale (*Atriplex confertifolia*), needleleaf rabbitbrush (*Ericameria teretifolia),* rubber rabbitbrush (*Ericameria nauseosa*), California buckwheat (*Eriogonum fasciculatum* var. polifolium), and other shrub and herbaceous species. Stands of mountain-mahogany scrub, blackbush scrub, and other associations within this alliance are included in this category and figuresets showing their distribution can be found in the *TLRR Sensitive Species and Habitat Report: Control-Silver Peak 55 kV Subtransmission Line* (Arcadis 2019b).

A total of 13 alliances and 19 associations of High Desert Scrub vegetation overlap potential Project work areas and were characterized during the field surveys (Table 3-1). These include:

Vegetation Alliance Common Name	**Association Name**
Curl leaf mountain-mahogany scrub	*Cercocarpus ledifolius – Artemisia tridentata* subsp*. vaseyana* Association
Winterfat scrubland	*Krascheninnikovia lanata* Association
Spiny menodora scrub	*Menodora spinescens* – (*Ephedra nevadensis*) Association *Menodora spinescens – Atriplex confertifolia* Association
Blackbrush scrub	*Coleogyne ramosissima* Association
Antelope bitterbrush – big sagebrush scrub	*Purshia tridentata – Artemisia tridentata* (subsp. *vaseyana*) Association
Shadscale Scrub	*Atriplex confertifolia* Great Basin Association *Atriplex confertifolia – Ephedra nevadensis* Association *Atriplex confertifolia – Krascheninnikovia lanata* Association *Atriplex confertifolia – Psorothamnus arborescens* Provisional Association
Nevada joint fir - Anderson's boxthorn - spiny hopsage scrub	*Ephedra nevadensis* Provisional Association *Ephedra nevadensis – Psorothamnus arborescens* Provisional Association
Mormon tea scrub	*Ephedra viridis* Association
Needleleaf rabbitbrush scrub	*Ericameria teretifolia* Association
Big sagebrush scrub	*Artemisia tridentata* Association
Mountain big sagebrush scrub	*Artemisia tridentata* subsp. *vaseyana* Association *Artemisia tridentata* subsp. *vaseyana – Purshia tridentata/Festuca idahoensis* Association
California buckwheat scrub	*Eriogonum fasciculatum* Association
Rubber rabbitbrush scrub	*Ericameria nauseosa* Association

The proposed High Desert Scrub planting palette includes observed dominant species in High Desert Scrub, as well as common forbs and perennial grasses. It also includes mountain big sagebrush, which serves as food and habitat for the greater sage grouse.

Impacts to High Desert Scrub will be minimized to the maximum extent feasible due to a combination of impact avoidance methods, helicopter use, and careful siting of Project work activities, and topsoil salvaging and placement will be prioritized where soil is disturbed, see Section 3.

Table 6-4 High Desert Scrub Planting Palette

Scientific Name	Common Name	Growth Habit	Propagule Type	Number of Containers, Cuttings, or Pounds per Acre (Pure Live Seed)	Segment(s)
Artemisia tridentata subsp. *tridentata*	big sagebrush	shrub	container	TBD	1, 2, 3, 4, 5
Artemisia tridentata subsp. *vaseyana*	mountain big sagebrush	shrub	container	TBD	1, 2, 3, 4, 5
Atriplex canescens	four-wing saltbush	shrub	seed	0.5	1, 2, 3, 4, 5
Atriplex confertifolia	shadscale	shrub	seed	2	1, 2, 3, 4, 5
Ambrosia salsola	cheeseweed	shrub	seed	0.5	1, 2, 3, 4, 5
Cercocarpus ledifolius	Curl-leaf mountain-mahogany	shrub	container	TBD	1, 2, 3, 4, 5
Chrysothamnus viscidiflorus	green rabbitbrush	shrub	seed	2	1, 2, 3, 4, 5
Coleogyne ramosissima	blackbrush	shrub	container	TBD	1, 2, 3, 4, 5
Ephedra nevadensis	Nevada ephedra	shrub	container	TBD	1, 2, 3, 4, 5
Ephedra viridis	Green Mormon tea	shrub	container	TBD	1, 2, 3, 4, 5
Ericameria nauseosa	rubber rabbitbrush	shrub	seed	1	1, 2, 3, 4, 5
Ericameria teretifolia	needleleaf rabbitbrush	shrub	seed	1	1, 2, 3, 4, 5
Eriogonum fasciculatum var. *polifolium*	California buckwheat	shrub	seed	3	1, 2, 3, 4, 5
Grayia spinosa	spiny hop-sage	shrub	seed	0.5	1, 2, 3, 4, 5
Holodiscus discolor var. *microphyllus*	Small-leaved creambush	shrub	seed	0.5	1, 2, 3, 4, 5
Krascheninnikovia lanata	winterfat	shrub	container	TBD	1, 2, 3, 4, 5
Menodora spinescens var. *spinescens*	spiny menodora	shrub	container	TBD	1, 2, 3, 4, 5
Philadelphus microphyllus var. *microphyllus*	littleleaf mockorange	shrub	container	TBD	1, 2, 3, 4, 5
Purshia tridentata var. *glandulosa*	bitterbrush, antelope brush	shrub	seed	0.5	1, 2, 3, 4, 5
Tetradymia axillaris var. *axillaris*	catclaw horsebrush	shrub	seed	0.5	1, 2, 3, 4, 5
Leptosiphon nuttallii	Nuttall's linanthus	perennial forb	seed	0.5	1, 2, 3, 4, 5
Lupinus argenteus	silvery lupine	perennial forb	seed	0.5	1, 2, 3, 4, 5
Stipa comata	needle-and-thread grass	perennial grass	seed	0.5	1, 2, 3, 4, 5
Stipa speciosa	desert needlegrass	perennial grass	seed	0.5	1, 2, 3, 4, 5
Mentzelia albicaulis	small-flowered blazing star	annual forb	seed	0.5	1, 2, 3, 4, 5

Note:
Planting palette is dependent on availability of seed and other propagules, as well as dominant vegetation at given restoration site

6.1.1.5 High Desert Wash Shrubland

High Desert Wash Shrubland vegetation occurs primarily in valleys, flats, arroyos, intermittent channels, and washes within the CSP Project alignment where there is seasonal surface or subsurface water flow, depending on rainfall. High Desert Wash Shrubland occurs in all segments of the CSP Project alignment and supports shrubs such as cheesebush (*Ambrosia salsola*), Fremont's smokebush (*Psorothamnus fremontii*), Nevada smokebush (*Psorothamnus*

polydenius), Bailey's greasewood (*Sarcobatus baileyi*), wild tarragon (*Artemisia dracunculus*), and other shrubs and herbaceous species. Three alliances and 7 associations of High Desert Wash Shrubland vegetation overlap potential Project work areas and were characterized during the field surveys (Table 3-1). These include:

Vegetation Alliance Common Name	Association Name
Fremont's and Nevada smokebush scrub	Psorothamnus polydenius – Atriplex confertifolia – Tetradymia spp. Association Psorothamnus polydenius – (Psorothamnus arborescens) Association Sarcobatus baileyi Association
Cheesebush - sweetbush scrub	Ambrosia salsola Association Ambrosia salsola – Atriplex canescens Provisional Association Ambrosia salsola – Atriplex confertifolia Association
Wild Tarragon Patches	Artemisia dracunculus Association

The proposed High Desert Wash Shrubland planting palette includes observed dominant species in High Desert Wash Shrubland vegetation, as well as common forbs and a perennial grass.

Impacts to High Desert Wash Shrubland will be minimized to the maximum extent feasible due to a combination of impact avoidance methods, helicopter use, and careful siting of Project work activities, and topsoil salvaging and placement will be prioritized where soil is disturbed, see Section 3.

Table 6-5 High Desert Wash Shrubland Planting Palette

Scientific Name	Common Name	Growth Habit	Propagule Type	Number of Containers, Cuttings, or Pounds per Acre (Pure Live Seed)	Segment(s)
Ambrosia salsola	cheeseweed	shrub	seed	4	1, 2, 3, 4, 5
Ephedra nevadensis	Nevada ephedra	shrub	container	TBD	1, 2, 3, 4, 5
Grayia spinosa	spiny hop-sage	shrub	seed	1	1, 2, 3, 4, 5
Lycium andersonii	Anderson's thornbush	shrub	container	TBD	3, 5
Psorothamnus arborescens	Fremont's smokebush	shrub	container	TBD	1, 2, 3, 4, 5
Psorothamnus polydenius	Nevada smokebush, dotted dalea	shrub	container	TBD	3, 4, 5
Purshia tridentata var. *glandulosa*	bitterbrush, antelope brush	shrub	seed	1	1, 2, 3, 5
Artemisia dracunculus	wild tarragon	perennial forb	seed	0.5	3
Sphaeralcea ambigua	desert globe mallow	perennial forb	seed	1	1, 2, 3, 4, 5
Amsinckia tessellata	desert fiddleneck	annual forb	seed	1	1, 2, 3, 4
Malacothrix glabrata	desert dandelion	annual forb	seed	2	1, 2, 3, 4, 5
Mentzelia albicaulis	small-flowered blazing star	annual forb	seed	1	1, 2, 3, 4, 5
Stipa hymenoides	Indian ricegrass	perennial grass	seed	2	1, 2, 3, 4, 5

Note:
Planting palette is dependent on availability of seed and other propagules, as well as dominant vegetation at given restoration site.

6.1.1.6 Saltbush – Alkali Scrub

The CSP Project alignment intersects alkali flats and other alkaline habitats in low-lying areas in all Segments. Dominant species in Saltbush – Alkali Scrub vegetation include several species of saltbush (*Atriplex* spp.), as well as greasewood (*Sarcobatus vermiculatus*), Bailey's greasewood, bush seepweed (*Suaeda nigra*), saltgrass (*Distichlis spicata*), and other salt-tolerant species. Native species diversity is lower in alkaline and salty soils than in other upland habitats. A total of 4 alliances and 9 associations of Saltbush – Alkali Scrub vegetation overlap potential Project work areas and were characterized during the field surveys (Table 3-1). These include:

Vegetation Alliance Common Name	**Association Name**
Greasewood Scrub	*Sarcobatus vermiculatus* Association *Sarcobatus vermiculatus* – *Atriplex confertifolia*- (*Picrothamnus desertorum*, *Suaeda moquinii*) Association
Quailbush Scrub	*Atriplex lentiformis* Association *Atriplex lentiformis* – *Ericameria nauseosa* Provisional Association
Allscale Scrub	*Atriplex polycarpa* Association
Fourwing Saltbush Scrub	*Atriplex canescens* Association *Atriplex canescens* Desert Wash Association Atriplex canescens – *Krascheninnikovia lanata* Association *Atriplex canescens* / herbaceous Association

The proposed Saltbush – Alkali Scrub planting palette includes observed dominant species in alliances and associations of Saltbush – Alkali Scrub vegetation.

Impacts to Saltbush – Alkali Scrub will be minimized to the maximum extent feasible due to a combination of impact avoidance methods, helicopter use, and careful siting of Project work activities, and topsoil salvaging and placement will be prioritized where soil is disturbed, see Section 3.

Table 6-6 Saltbush – Alkali Scrub Planting Palette

Scientific Name	Common Name	Growth Habit	Propagule Type	Number of Containers, Cuttings, or Pounds per Acre (Pure Live Seed)	Segment(s)
Ambrosia salsola	cheeseweed	shrub	seed	2	1, 2, 3, 4, 5
Atriplex canescens var. *canescens*	fourwing saltbush	shrub	seed	1	1, 2, 3, 4, 5
Atriplex confertifolia	shadscale	shrub	seed	1	1, 2, 3, 4, 5
Atriplex lentiformis	quailbush, big saltbush	shrub	seed	1	1, 2, 3, 4
Atriplex polycarpa	allscale	shrub	seed	4	3
Atriplex torreyi	Torrey's saltbush	shrub	seed	1	1, 2, 3, 4, 5
Ericameria nauseosa	rubber rabbitbrush	shrub	seed	1	1, 2, 3, 4, 5
Grayia spinosa	spiny hop-sage	shrub	seed	1	1, 2, 3, 4, 5
Psorothamnus arborescens	Fremont's smokebush	shrub	container	TBD	1, 2, 3, 4, 5
Psorothamnus polydenius	Nevada smokebush, dotted dalea	shrub	container	TBD	3, 4, 5
Sarcobatus baileyi	Bailey's greasewood	shrub	container	TBD	4
Sarcobatus vermiculatus	black greasewood	shrub	seed	1	1, 2, 3, 4, 5
Tetradymia axillaris var. *axillaris*	catclaw horsebrush	shrub	seed	1	1, 2, 3, 4, 5
Amsinckia tessellata	fiddleneck	annual forb	seed	1.5	1, 2, 3, 4, 5
Malacothrix glabrata	desert dandelion	annual forb	seed	1.5	1, 2, 3, 4, 5
Mentzelia albicaulis	small-flowered blazing star	annual forb	seed	0.5	1, 2, 3, 4, 5
Suaeda nigra	bush seepweed	perennial forb	seed	0.5	1, 2, 3, 4, 5
Distichlis spicata	saltgrass	perennial grass	seed or cuttings	1.5	1, 2, 3, 4, 5
Stipa hymenoides	Indian ricegrass	perennial grass	seed	0.5	1, 2, 3, 4, 5

Note:
Planting palette is dependent on availability of seed and other propagules, as well as dominant vegetation at given restoration site

6.1.1.7 Riparian Woodland

Riparian Woodland occurs primarily along the Owens River in Segment 3 and 4, as well as in Silver Canyon and Wyman Canyon in Segment 3 and in drainages and channels in Segments 1 and 2 where subsurface perennial moisture tends to be available much of the year to the dominant trees and shrubs. These include Fremont cottonwood (*Populus fremontii*) below 8,000 feet amsl and quaking aspen above 8,000 feet amsl; several species of willows (*Salix spp.*); water birch (*Betula occidentalis*); and associated species. A total of 5 alliances and 7 associations of Riparian Woodland and Scrub vegetation overlap potential Project work areas and were characterized during the field surveys. These include:

Vegetation Alliance Common Name	**Association Name**
Goodding's willow – red willow riparian woodland and forest	*Salix laevigata* Association
Water birch thicket	*Betula occidentalis / Salix* spp. Association
Red-osier dogwood – interior rose – currant thickets	*Rosa woodsii* Association
Arroyo willow thickets	*Salix lasiolepis* Association *Salix lasiolepis / Rosa woodsii* / mixed herbs Association
Sandbar willow thickets	*Salix exigua* Association *Salix exigua* - (*Salix gooddingii*) Provisional Association

Riparian vegetation differs between the Owens River, Silver Canyon, and Wyman Canyon.

The Owens Valley near Bishop sits at approximately 4,000 feet amsl, and is carved by the Owens River and its tributaries from the Sierra Nevada and White-Inyo Ranges, often with deep alluvial substrates. Riparian vegetation observed in the Owens River includes riparian woodland dominated by red willow (Goodding's willow – red willow riparian woodland and forest, *Salix laevigata* Association); arroyo willow (arroyo willow thickets, *Salix lasiolepis* Association), sandbar willow (sandbar willow thickets*, Salix exigua* – [*Salix gooddingii*] Provisional Association), and occasional stands of Fremont cottonwood (*Populus fremontii*). These woodlands were bordered by shrublands dominated by rubber rabbitbrush (*Ericameria nauseosa*), quailbush (*Atriplex lentiformis*), and Torrey's saltbush (*A. torreyi*), see Section 6.1.1.6; thickets of interior rose (*Rosa woodsii*); and pockets of moist meadow and wetland margin vegetation dominated by yerba mansa (*Anemopsis californica*), saltgrass (*Distichlis spicata*), creeping ryegrass (*Leymus triticoides*), Baltic rush (*Juncus arcticus* var. *balticus*), and other species, see Section 6.1.1.8.

Silver Canyon descends from over 10,000 feet amsl to the west, down a steep ravine with coarse rocky debris forming the underlying substrate for stream flow. Riparian woodland in rugged Silver Canyon is dominated by arroyo willow thickets, sandbar willow thickets, occasional water birch thickets (*Betula occidentalis*), and interior rose, as well as other occasional riparian associates, such as black cottonwood (*Populus trichocarpa*), red willow, and other riparian trees and shrubs. Surrounding slopes dominated by shadscale scrub and mountain big sagebrush scrub give way at higher elevations to single-leaf pinyon – Utah juniper woodland and subalpine forest with increased elevation. The CSP Project alignment intermittently overlaps the Silver Canyon Creek corridor from the western margin of INF below approximately 7,100 feet amsl.

Wyman Canyon descends from over 10,000 feet amsl to the east, down a steep ravine with coarse rocky debris forming the underlying substrate for stream flow. Riparian woodland in Wyman Canyon is present intermittently in the canyon bottom above 8,200 feet amsl and more

or less continuously from 8,200 feet to 5,500 feet amsl, and is dominated by arroyo willow thickets, sandbar willow thickets, occasional water birch stands, and less common trees such as a narrow-leaved form of black cottonwood (*Populus trichocarpa*, Jim Morefield, personal communication regarding identification as P. trichocarpa and not P. *angustifolia*), yellow willow (*Salix lutea*), and mountain maple (*Acer glabrum*, not observed). Surrounding slopes above riparian vegetation support mountain big sagebrush, singleleaf pinyon pine (*Pinus monophylla*), curl-leaf mountain-mahogany (*Artemisia tridentata* subsp. *vaseyana*), little-leaf mountain-mahogany (*Cercocarpus intricatus*), little-leaf mock orange (*Philadelphus microphyllus*), and other shrubs and herbaceous species.

The three proposed Riparian Woodland planting palettes include observed dominant species in each watershed as well as associated shrubs and herbaceous species in Riparian Woodland vegetation.

Impacts to Riparian Woodland will be minimized to the maximum extent feasible due to a combination of impact avoidance methods, helicopter use, and careful siting of Project work activities, and topsoil salvaging and placement will be prioritized where soil is disturbed, see Section 3.

Table 6-7a Riparian Woodland Planting palette – Owens Valley

Scientific Name	Common Name	Growth Habit	Propagule Type	Number of Containers, Cuttings, or Pounds per Acre (Pure Live Seed)	Segment(s)
Populus fremontii	Fremont cottonwood	tree	cuttings	TBD	1, 3, 4
Salix gooddingii	Goodding's black willow	tree	cuttings	TBD	1, 3, 4
Salix laevigata	red willow	tree	cuttings	TBD	1, 3, 4
Salix lasiandra var. *lasiandra (S. lucida)*	yellow willow	tree	cuttings	TBD	1, 3, 4
Salix lasiolepis	arroyo willow	tree	cuttings	TBD	1, 3, 4
Ericameria nauseosa	rubber rabbitbrush	shrub	seed	3	1, 2, 3, 4, 5
Rosa woodsii subsp. *ultramontana*	interior wild rose	shrub	container	TBD	1, 2, 3, 4, 5
Salix exigua	sandbar willow	shrub	cuttings	TBD	1, 3, 4
Distichlis spicata	saltgrass	perennial grass	cuttings	TBD	1, 2, 3, 4, 5
Muhlenbergia asperifolia	scratchgrass	perennial grass	seed	1	3, 4
Sporobolus airoides	alkali sacaton	perennial grass	seed	2	1, 2, 3, 4, 5
Juncus balticus	Baltic rush	graminoid/rush	cuttings	TBD	1, 3, 4
Anemopsis californica	yerba mansa	perennial forb	cuttings or container	TBD	3

Note:
Planting palette is dependent on availability of seed and other propagules, as well as dominant vegetation at given restoration site

Table 6-7b Riparian Woodland Planting palette – Silver Canyon

Scientific Name	Common Name	Growth Habit	Propagule Type	Number of Containers, Cuttings, or Pounds per Acre (Pure Live Seed)	Segment(s)
Populus trichocarpa	black cottonwood	tree	cuttings	TBD	3
Salix lasiolepis	arroyo willow	tree	cuttings	TBD	3
Salix lutea	yellow willow	Tree	cuttings	TBD	3
Betula occidentalis	water birch	shrub	seed or cuttings	TBD	3
Ericameria nauseosa	rubber rabbitbrush	shrub	seed	3	3
Rosa woodsii subsp. *ultramontana*	interior wild rose	shrub	container	TBD	3
Salix exigua	sandbar willow	shrub	cuttings	TBD	3
Distichlis spicata	saltgrass	perennial grass	cuttings	TBD	3
Sporobolus airoides	alkali sacaton	perennial grass	seed	2	3
Juncus balticus	Baltic rush	graminoid/rush	cuttings	TBD	3
Anemopsis californica	yerba mansa	perennial forb	cuttings or container	TBD	3
Erythranthe cardinalis	scarlet monkeyflower	perennial forb	container	TBD	3

Table 6-7c Riparian Woodland Planting palette – Silver Canyon

Scientific Name	Common Name	Growth Habit	Propagule Type	Number of Containers, Cuttings, or Pounds per Acre (Pure Live Seed)	Segment(s)
Populus trichocarpa (narrow-leaved Wyman Canyon form)	black cottonwood	tree	cuttings	TBD	3
Salix laevigata	red willow	tree	cuttings	TBD	3
Salix lasiolepis	arroyo willow	tree	cuttings	TBD	3
Salix lutea	yellow willow	tree	cuttings	TBD	3
Betula occidentalis	water birch	shrub	seed or cuttings	TBD	3
Ericameria nauseosa	rubber rabbitbrush	shrub	seed	3	3
Rosa woodsii subsp. *ultramontana*	interior wild rose	shrub	container	TBD	3
Salix exigua	sandbar willow	shrub	cuttings	TBD	3
Distichlis spicata	saltgrass	perennial grass	cuttings	TBD	3
Carex nebrascensis	Nebraska sedge	perennial sedge	seed	1	3
Juncus balticus	Baltic rush	graminoid/rush	cuttings	TBD	3
Erythranthe guttata	common monkeyflower	perennial forb	container	TBD	3

6.1.1.8 Moist Meadow and Wetland Margins

Moist Meadow and Wetland Margins vegetation occurs in moist soils in meadows or near the margins of marshes, floodplains, and streams in Segments 1, 2, 3, and 4 of the CSP Project alignment. Dominant vegetation includes perennial forbs, grasses, rushes, and sedges. A total of 5 alliances and 6 associations of Moist Meadow and Wetland Margins vegetation overlap potential Project work areas and were characterized during the field surveys. These include:

Vegetation Alliance Common Name	**Association Name**
Alkali sacaton – scratchgrass – alkali cordgrass alkaline wet meadow	*Muhlenbergia asperifolia – Distichlis spicata* Provisional Association
Yerba mansa – Nuttall's sunflower – Nevada goldenrod alkaline wet meadows	*Anemopsis californica* Association
Ashy ryegrass – creeping ryegrass turfs	*Leymus triticoides* Association
Salt grass flats	*Distichlis spicata* Association *Distichlis spicata* – annual grasses Association
Baltic and Mexican rush marshes	*Juncus arcticus* var. *balticus* – (var. *mexicanus*) Association

The proposed Moist Meadow and Wetland Margins planting palette includes observed dominant and associated species in Moist Meadow and Wetland Margins vegetation.

Impacts to Moist Meadow and Wetland Margins will be minimized to the maximum extent feasible due to a combination of impact avoidance methods, helicopter use, and careful siting of Project work activities, and topsoil salvaging and placement will be prioritized where soil is disturbed, see Section 3.

Table 6-8 Moist Meadow and Wetland Margins Planting Palette

Scientific Name	**Common Name**	**Growth Habit**	**Propagule Type**	**Number of Containers, Cuttings, or Pounds per Acre (Pure Live Seed)**	**Segment(s)**
Anemopsis californica	yerba mansa	perennial forb	cuttings or container	TBD	1, 3, 4
Distichlis spicata	saltgrass	perennial grass	cuttings	TBD	1, 3, 4
Sporobolus airoides	alkali sacaton	perennial grass	seed	5	1, 3, 4
Elymus triticoides	alkali rye	perennial grass	cuttings	TBD	1, 3, 4
Muhlenbergia asperifolia	scratchgrass	perennial grass	seed	1	1, 3, 4
Juncus balticus	Baltic rush	graminoid/rush	cuttings	TBD	1, 3, 4

Note:
Planting palette is dependent on availability of seed and other propagules, as well as dominant vegetation at given restoration site

6.1.1.9 Freshwater Marsh

Freshwater Marsh vegetation occurs at the edges of streams, ponds, and lakes and within sloughs, swamps, marshes (fresh and brackish), and man-made ditches in Segments 1, 2, 3, and 4 of the CSP Project alignment. Dominant vegetation includes perennial grasses, sedges, and cattails. A total of 2 alliances and 3 associations of Freshwater Marsh vegetation overlap potential Project work areas and were characterized during the field surveys. These include:

Vegetation Alliance Common Name	**Association Name**
Hardstem and California bulrush marshes	*Schoenoplectus acutus* Association
Cattail marshes	*Typha* (*latifolia, angustifolia*) Association *Phragmites australis* subsp. *americanus* Association

6.1.1.10 USFS Landtype Association and Planting Palette Crosswalk

Table 6-9 provides an initial analysis of which planting palette(s) may be used in each USFS Landtype Association. Please note that in all cases plant materials (seeds and cuttings) collected within the Project area for propagation will be labeled indicating the watershed and elevation at which they occur (such as Owens Valley, Silver Canyon, Wyman Canyon) and plant palettes presented in this HRP will be refined during the plant material collection process to ensure restoration within the watershed, location, and elevation in which they occur, depending on existing dominant species

Table 6-9 Planting Palette and USFS Landtype Association Crosswalk

USFS Landtype Association	**Planting palette**
Upper Wyman Limber-Bristlecone-Mt. Mahogany Woodland	Subalpine Forest (Bristlecone Pine Woodland, Limber Pine Woodland) – Dolomite Substrates Subalpine Forest (Bristlecone Pine Woodland, Limber Pine Woodland) – Silicate Substrates
Upper Wyman Limber-Bristlecone-Mt. Mahogany Woodland Upper Wyman-Cottonwood Alpine & Sagebrush	Aspen Groves
Southwest White Mts. Pinyon Pine Payson-Wyman Pinyon Pine	Singleleaf Pinyon – Utah Juniper Woodland
Upper Wyman Limber-Bristlecone-Mt. Mahogany Woodland Upper Wyman-Cottonwood Alpine & Sagebrush Deep Springs Xeric Shrubland	Mountain Sagebrush Scrub (High Desert Scrub)
Deep Springs Xeric Shrubland	High Desert Wash Shrubland
Deep Springs Xeric Shrubland Silver Canyon Xeric Shrubland	Saltbush – Alkali Scrub
Chalfant-Bishop Alluvium Upper Wyman-Cottonwood Alpine & Sagebrush	Riparian Woodland – Silver Canyon Riparian Woodland – Wyman Canyon
Chalfant-Bishop Alluvium	Moist Meadows and Wetland Margins
Chalfant-Bishop Alluvium	Freshwater Marsh

6.1.2 Salvage of Native Plant Material

Salvaging of cacti will be conducted according to the guidance provided in Section 6.1.4 and salvaging of special-status plants will be conducted according to the guidance provided in Section 6.1.3. In addition, plant material will be salvaged, where feasible given staging and storage constraints, to be used for mulch.

The practice of applying vertical and/or horizontal mulching reduces wind erosion, traps seed, provides refuge sites for wildlife, and acts as a protective barrier. Vertical mulch derived from chipped or shredded woody material can be used to prevent high winds or flood events from moving the mulch off site. Horizontal mulch is appropriate for large pieces of mulch that would not be practical to bury, such as a dead Joshua tree or large pruned willow branches.

These mulching practices may be incorporated into restoration efforts. Materials for vertical or horizontal mulch may include rocks, boulders, and natural organic debris (e.g., shrub branches and other plant materials). Where appropriate, sites will be brushed prior to topsoil salvage to salvage native plant material for mulching purposes during restoration activities. Salvaged plant material will be temporarily stored in a designated storage location.

Following construction, SCE will determine the best locations to place the plant material on the restoration sites, with approval from the appropriate land management agencies. Woody plant material generated during vegetation removal operations may be preserved (windrowed) onsite as mulch for later use in soil rehabilitation of temporary disturbance areas. To the extent feasible, windrowed vegetation should be salvaged and kept intact for use as vertical mulch. Prior to use, windrowed vegetation may be chipped or shredded to a large particle size (1 to 3 inches). To prevent possible spread of non-native invasive species, only native material will be salvaged and reapplied to the restoration sites. To prevent fire hazards, all plant material stockpiling will be done in accordance with the Project-Specific Fire Management Plan.

6.1.3 Special-status Plant Species Restoration, Salvage, and Relocation

Nine special-status plant species were observed within Project work areas, as detailed in Table 3-3a. Of these, four species are annuals and will be restored using site-collected seed prior to construction: Nevada oryctes (*Oryctes nevadensis*), coyote gilia (*Aliciella triodon*), desert shredding primrose (*Eremothera boothii* subsp. *intermedia*), and small-flowered rice grass (*Stipa divaricata*). Two species are herbaceous perennials: Wheeler's chaetadelpha (*Chaetadelpha wheeleri*) and naked milkvetch (*Astragalus serenoi* var. *shockleyi*). One species is a special-status cactus, sagebrush cholla (*Grusonia pulchella*), and two species are shrubs: dwarf ninebark (*Physocarpus alternans*) and Bailey's greasewood (*Sarcobatus baileyi*).

The following subsections describe the methods that will be implemented prior to construction, during construction, and, where relevant, during the post-construction/restoration phase of the Project to facilitate avoidance, minimization, and/or mitigation of impacts to special-status plants, if required.

The only species of *Yucca* observed near the CSP Project alignment is western Joshua tree (*Yucca brevifolia*), which does not occur within Project work areas and will be flagged for avoidance during Project work activities. There will be no impacts to western Joshua tree as a result of this Project.

Salvaged special-status plant species will be monitored along with other mitigation plantings, as described in Section 8. Success standards for salvaged special-status plant species are

presented in Section 10.0, with adaptive management and contingency measures provided in Section 11.0.

6.1.3.1 Pre-construction Impact Analysis

Prior to the start of construction, an updated analysis will be conducted to determine the extent to which CRPR 1 and 2 and/or BLM Sensitive and USFS Species of Conservation Concern (SCC) plant species may be impacted by construction. The impact analysis will be conducted by intersecting the permanent and temporary disturbance areas with the local occurrences of special-status plants mapped in the study area. To the greatest extent possible given the data available, impacts will be quantified in terms of individual plants rather than occupied habitat area. For some species, however, it may not be feasible to count the number of individuals, particularly in the full extent of the local occurrence for the purpose of quantifying the percentage of individuals impacted.

6.1.3.1.1 Non-Federal Lands

On non-Federal land, where avoidance of CRPR 1 or 2 plant species is not feasible and the impacts are greater than 10 percent of the local occurrence[1], either by number of individual plants (if possible given available data) or by area of occupied habitat[2], the seed collection or salvage methods discussed below will be implemented. Among other instances, avoidance may be infeasible if individuals are located immediately adjacent to a pole identified for removal, or if large numbers of individuals are concentrated in an area where work cannot be avoided.

6.1.3.1.2 BLM-Administered Lands

On BLM-administered lands, per LUPA-BIO-PLANT-3, where avoidance of BLM Focus and BLM Special Status plant species is not feasible, impacts to suitable habitat for Focus and BLM Special Status plant species will be limited [capped] to a maximum of 1% of their suitable habitat throughout the entire LUPA Decision Area.

6.1.3.1.3 USFS-Managed Lands

On the INF, per SPEC-FW-STD 02, impacts on known and unknown occurrences of at-risk plants that would limit their persistence or recovery in the plan area will be avoided. If avoidance is not feasible, following temporary disturbance in suitable habitat, the area will be seeded with genetically appropriate native species (as described as a Potential Management Approach). The seed collection or salvage methods discussed below will be implemented. Among other instances, avoidance may be infeasible if individuals are located immediately adjacent to a pole identified for removal, or if large numbers of individuals are concentrated in an area where work cannot be avoided.

6.1.3.2 Pre-construction Survey

A pre-construction clearance survey will be conducted prior to the start of construction. The Construction Contractor and Qualified Biologists will cooperate to locate special-status plants expected to occur based on the analysis presented in this Plan, and to determine if impacts can be avoided. The Construction Contractor generally has some flexibility in where equipment is positioned in an approved disturbance area. The surveys will be conducted by Qualified

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1 A local occurrence is a population or group of populations separated by no more than 0.25 mile.

2 For the purpose of analysis, occupied habitat is defined as each mapped plant location and a 25-foot buffer for the cumulative results of all focused plant surveys conducted for the Project, current to the date of the analysis.

Biologists[3] using the current CNPS - CDFW botanical survey protocol (CDFW 2018), or other protocol mandated by a land management agency. The locations of each special-status plant or population will be recorded using a GPS-enabled handheld data collector. Particular effort will be made to verify the number of individual plants and record their precise locations where they occur inside Project disturbance areas, although this may be infeasible for some species. If construction proceeds at specific locations on a schedule that precludes seasonally appropriate pre-construction surveys and/or if drought conditions that affect the detectability of special-status plants, mitigation determinations will be based on the survey data from past surveys conducted for the Project.

Where special-status plants occur, it may be possible to position equipment to avoid the plants completely or to reduce the number of plants affected. The results of the pre-construction survey will inform additional impact analysis and avoidance and/or mitigation actions.

6.1.3.3 Avoidance Buffers and Monitoring

Prior to the start of construction, buffers of sufficient size to prevent direct or indirect disturbance from construction activities, erosion, inundation, or dust will be established around each CRPR 1 or 2 plant/population, each BLM Focus and BLM Special Status plant species, or USFS INF SCC plant species in or near a defined construction area.[4] Buffers will be established at the direction of a Qualified Botanist in cooperation with the Construction Contractor, to the extent feasible. The purpose of buffering is to facilitate avoidance of special-status plants, adjacent suitable soils, and presumed seed bank. The buffer area will be clearly staked, flagged, and signed for avoidance and maintained throughout the construction phase. The size of the buffer will depend upon the proposed use of the adjacent lands and the plant's ecological requirements (e.g., sunlight, shade, water availability, edaphic physical and chemical characteristics). For plants/populations in close proximity to construction activities, exclusion fencing (e.g., snow fence, silt fence) may be implemented at the discretion of the Qualified Biologist and biological monitoring may be conducted to ensure avoidance.

6.1.3.4 Proposed Mitigation Actions

As described above, avoidance is the first course of action. However, where avoidance is not feasible, and where the Project would impact a local occurrence of CRPR 1 or 2 and/or BLM S and USFS SCC plant species, seed collection and/or salvage methods will be implemented as described in the following sections. Among other instances, avoidance may be infeasible if individuals are located immediately adjacent to a pole identified for removal, or if large numbers of individuals are concentrated in an area where work cannot be avoided. In this instance, mitigation to avoid or minimize impacts to a sensitive plant colony should include the use of temporary matting or plating or modifying the equipment used to minimize impacts to the soil crust, seed bank, or dormant plants.

6.1.3.4.1 Seed Collection

For some of the special-status plant species covered by this Plan, including annuals, perennial herbs, and high elevation species that will be used for restoration, seeds and cuttings may be collected to ensure successful establishment of target species. The following annual species within Project work areas will be restored primarily from seed collection and sowing and/or

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[3] A Qualified Biologist is a biologist approved by the appropriate land management agency to conduct pre-construction surveys, pre-activity sweeps, biological monitoring and/or relocation/salvage activities for special-status plant and wildlife species and nesting birds.

[4] SCE notes that LUPA-BIO-PLANT-2 calls for an avoidance setback of 0.25 mile for all Focus and BLM Special Status Species occurrences. No such species are known along the CSP Project alignment. .

topsoil salvaging: Nevada oryctes, coyote gilia, and desert shredding primrose. The seed of some special-status herbaceous perennial species within Project work areas will also be collected prior to Project disturbance, as described below.

Prior to and during construction (if necessary and feasible), seed from special-status plant occurrences potentially impacted by the Project will be collected. Seed will be collected in such a manner as to not damage the parent plants. Only seeds (or fruit) that are ripe and readily detach from the plant will be collected. SCE may discretionarily collect up to 20 percent of recoverable seed per plant from plants within the same occurrence but outside the Project disturbance areas. To the extent possible, where seed collection is the primary method for salvage, seed collection activities will be scheduled during a time when seed production is at a maximum.

If grading is required within special-status perennial herb habitat, topsoil salvage and replacement will also be conducted, if feasible. Steep slopes, bedrock, and other factors may preclude topsoil salvage.

Collected seed will be incorporated into the planting palette that will be used in restoration of temporary disturbance and applied according to the Project's HRP. Seeds will only be applied to temporary disturbance areas within the occurrence that was the seed's original source and will not be introduced into other Project locations unless approved by the respective land manager.

6.1.3.4.2 Relocation

The special-status plants likely to be affected by the Project are within temporary disturbance areas and in sites where work is likely to occur over a period of less than 14 days. SCE will determine whether individual special-status plants warrant attempted relocation based on each plant's health, availability of suitable receptor sites, and the comparable viability of alternative salvage methods. Relocation of perennial herbs may be attempted; alternatively, seeds and/or cuttings may be collected and included in the restoration planting palette.

Impacted shrubs and subshrubs may also be replaced with plants cultivated from appropriately sourced seed in addition to salvage to increase likelihood of reestablishment of the impacted individuals.

Relocation of individual plants may include planting in temporary disturbance areas within the Project boundaries where work is complete or moving plants to suitable receptor sites outside the temporary disturbance areas, within the ROW. Receptor sites for any salvaged plants shall be in the nearest area of habitat for the species that is not likely to be subjected to future disturbances (whether Project-related, such as operation and maintenance activities; recreational impacts, such as off-highway vehicle use; etc.). Receptor sites will, to the extent feasible, match the microhabitat conditions (e.g., slope, aspect, soil characteristics, plant community) of each plant's original location.

Special-status plants identified for salvage and relocation will be tagged with a unique identifier, the north side of the plant will be marked, and species, size, location, and current health will be recorded. The health assessment will be based on the following guidelines:

- Good: Plant has primarily normal and healthy growth, less than 10 percent dead or yellowed leaves and tissue.
- Fair: Plant shows signs of stress but has primarily live growth, 10 to 40 percent dead or yellowed leaves and tissue.
- Poor: Plant shows signs of severe stress or disease, more than 40 percent dead or yellowed leaves and tissue.

In coordination with the Restoration Ecologist, SCE will determine if the salvaged plant will be relocated to a receptor site or held on site and re-planted in the original location. Ecological and microhabitat information, as well as salvage date and location, will be recorded for each plant/occurrence at the time of salvage to assist in mitigation success and assessment during restoration monitoring. Representative photographs will also be taken at each salvage location. The planting location will be recorded once the relocation effort is complete.

Individual plants will be extracted by hand or with heavy equipment (Bobcat, backhoe, tree spade, or similar as appropriate) to include a root mass extending approximately 12 inches around the base of each plant. For large cactus mats, the plants may need to be segmented and removed in pieces. Injured or cut roots will be treated with sulfur. Salvaged plants will be placed in temporary pots and stored on site under shade cloth, then replanted in approximately the original location after post-construction site stabilization treatments have been applied, generally within one week of the initial excavation.

Planting holes will be excavated to diameters approximately twice that of the root ball (but not deeper than the root ball, to avoid settling). Planting holes will be thoroughly moistened prior to placement of salvaged plants. During installation, care will be taken to minimize disturbance of the root system. The plants will be placed in the holes and loose native soil will be backfilled into the hole around the plant and firmly hand-packed around the root ball to eliminate any air pockets. Berms or basins may be constructed to aid in irrigation, but special care will be taken to avoid pooling of water around plant stems or settling of the stem/root union below grade. Plants will be watered immediately after installation with at least one gallon of water.

To increase survival probability and overall plant success, salvaged plants are not proposed to be harvested a second time for replacement onto the Project site during post-construction restoration.

Not all individuals may be suitable for salvage, and seed collection and nursery propagation may be considered as an alternative.

Special-status plant species that may be salvaged and relocated include Wheeler's chaetadelpha, naked milkvetch, sagebrush cholla, dwarf ninebark, and Bailey's greasewood. Salvaged plants will be monitored along with other mitigation plantings, as described in Section 8.

6.1.3.4.3 Nursery Propagation

To supplement salvaged plants and replace those that could not be salvaged, some special-status plants maybe grown from seed, bulbs/corms, or cuttings. Seeds, bulbs/corms, or cuttings from special-status plants in or adjacent to Project disturbance areas will be collected prior to construction. Native soil will also be collected and used in cultivation. The size and shape of the containers used for nursery propagation will match the plant’s rooting strategy (i.e., deep-rooted plants should be grown in tall pots to encourage more root development, while fibrous-rooted plants can be grown in shorter pots or as plugs). Any special-status shrubs grown in offsite nurseries will be planted in restored temporary disturbance areas in the fall after at least one year of nursery growth. All special-status plants will be planted within the occurrence location that was the original source of their seed, bulb/corm, or cutting. Replanting will generally occur in early spring (which will vary by location) to take advantage of warming temperatures and the initiation of seasonal growth. Planting and subsequent care and maintenance will follow the same procedures used for relocation of mature plants. If determined to be appropriate, plants may also be propagated in nurseries for the purpose of seed bulking, with the resulting seeds added to the restoration planting palettes as described in Section 5.1.1.

Roots or stems may be salvaged as a potential propagation technique for some species (i.e., woody stem cuttings or succulent stems). To ensure availability of material for mitigation and

adaptive management, vegetatively reproducing species may be held at a qualified plant conservation institution or native plant nursery where materials shall be increased through division or other propagation methods prior to onsite mitigation. Seeds, rhizomes, or container plants resulting from nursery propagation may be used as backup for additional mitigation if success standards are not met and to allow for “over planting” during initial restoration implementation ~~m~~ to increase the probability of success.

6.1.4 Cactus Salvaging and Relocation

This section outlines methods for the avoidance and minimization of impacts to cacti and yucca, cacti salvaging guidance, methods for relocation of cactus individuals when Project impacts are unavoidable, and maintenance, monitoring, and reporting if relocation occurs. These methods are consistent with Federal and State requirements, including the DRECP and state statutes and codes.

Seven species of cacti were observed within the CSP Project alignment: golden cholla (*Cylindropuntia echinocarpa*), Engelmann’s hedgehog cactus (*Echinocereus engelmannii*), Mojave king cup cactus (*E. mojavensis*), sagebrush cholla (*Grusonia pulchella*), beavertail cactus (*Opuntia basilaris*), plains prickly-pear (*O. polyacantha*), and Mojave fishhook cactus (*Sclerocactus polyancistrus*).

One species of *Yucca* was observed near but not within the CSP Project alignment: western Joshua tree (*Yucca brevifolia*). Western Joshua tree in Wyman Canyon is located outside of any identified work area. The western Joshua tree will not be impacted by Project activities, and buffers will be created to ensure impact avoidance. SCE will ensure there are no impacts to western Joshua trees as a result of this Project The western Joshua tree is currently a candidate species for listing status by CDFW as of August 2022; this species has no CRPR ranking.

Of these, two cactus species are included in the California Native Plant Society (CNPS) Rare Plant Inventory with a CRPR: sagebrush cholla (CRPR 2B.2) and Mojave fishhook cactus (CRPR 4.2), but only the sagebrush cholla has been observed within Project disturbance areas.

The following subsections describe the methods that will be implemented prior to construction, during construction, and during the post-construction/restoration phase of the Project to facilitate avoidance, minimization, and/or mitigation of impacts to cactus and yucca (impact avoidance for western Joshua tree, no other species of *Yucca* occur near Project work areas). Salvaged cacti will be monitored along with other mitigation plantings, as described in Sections 8 and 9. Success standards for salvaged cacti are presented in Section 10.0, with adaptive management and contingency measures provided in Section 11.0.

6.1.4.1 Project Design and Impact Minimization

The Project has been designed to minimize impacts to native habitats, including native vegetation communities with cactus and yucca, by incorporating previously developed and disturbed areas into the design and minimizing disturbance envelopes to the extent feasible. “Drive and crush” methods may also be implemented to the extent feasible to preserve native vegetation and native seed banks. “Drive and crush” may include overland travel over existing low-lying vegetation but may also incorporate trimming vegetation to ground level with root systems intact to facilitate vehicular access and flagging of special-status plant species and cacti for avoidance.

6.1.4.1.1 Focused Surveys and Mapping

Prior to the start of construction, SCE will conduct focused surveys to inventory cactus and yucca individuals occurring in or immediately adjacent to the Project disturbance areas. The data will serve to identify the number of individual plants of each species that are suitable for transplant within each disturbance area, if necessary. The height and health status of each cactus that is suitable for transplant will be recorded.

6.1.4.1.2 Avoidance and Minimization

As described above, the Project has been designed to minimize impacts to native vegetation, including vegetation communities with cactus and yucca species, to the extent feasible. Western Joshua tree individuals of any size will be avoided and nearby individuals will be flagged for avoidance throughout construction. Based on the results of the preconstruction surveys, SCE will further work towards impact avoidance by coordinating with the Construction Contractor prior to the initiation of ground-disturbing activities to determine if impacts may be further reduced by modifying the disturbance areas and/or locating vehicles and equipment to avoid cactus and yucca.

For cactus and yucca plants (all species) within disturbance areas that can be avoided, avoidance buffers of an appropriate size will be clearly staked, flagged, fenced, and/or signed. The buffers will be maintained throughout the construction phase. The size of the buffers will vary depending on species, habitat, and type of construction disturbance.

6.1.4.2 Salvage and Relocation Approach

Where avoidance is not feasible, SCE will implement salvage and relocation (cacti only, all western Joshua trees will be avoided), as described in the following sections, depending on transplant suitability. The methods that follow will be implemented in coordination with a qualified Restoration Ecologist.

Salvage and relocation will be conducted as described below on BLM and USFS lands throughout the Project area. Salvage and relocation of non-special-status cactus species will not be conducted on non-federal lands. Salvage of special-status cactus (i.e., sagebrush cholla) are addressed in Section 5.1.3.

6.1.4.2.1 Health Assessments and Transplant Suitability

The ecophysiology of North American cactus was a principal subject of study during the first decades of the 20th Century, as summarized by McGinnies (1981). Cactus resist desiccation partly because they lack leaves and have a very small surface to mass ratio. Their cuticle is also thick, with stomata that close tightly during the day, open after dark, and respire at night to reduce moisture loss. Their root systems can also grow rapidly in response to increases in soil moisture, and rootlets also dieback readily, minimizing moisture loss caused by soil desiccation. Injuries, whether to the stem or root system of cactus, also callous quickly in the absence of fungi or other pathogens. Cactus are also rich in water and nutrients; their spines serve chiefly as defense mechanisms against herbivores.

Many of the physiological adaptations of cactus to desert environments also mean that they are relatively easy to transplant successfully if appropriate procedures are implemented. Rooted primarily in dry soils, cactus typically do not have the resistance to fungal pathogens possessed by most plants of more humid habitats. Thus, some of the procedures outlined herein anticipate the vulnerability of cactus to soil pathogens.

High survival rates following transplanting have been reported for a variety of cactus species, including *Echinocereus* spp., cholla (*Cylindropuntia* spp.), and opuntia (*Opuntia* spp.), which

establish well from individual joints and pads. These transplants can be especially advantageous in acting as “nurse plants,” as grown plants in relocation areas provide beneficial modifications to the microclimate, such as shading or wind protection, which can enhance establishment of seeded plant species (Kigel 1995).

For cactus plants that cannot be avoided, a health assessment will be conducted. Health categories will include dead, poor, fair, and good and will be based on the following criteria:

Good: live, green leaves and branches (no yellowing), new growth in season, no or little damage from pests and disease.

Fair: pest, drought, and disease damage may be present but not fatal (e.g., some yellowing). Plants in fair health have predominantly green stems.

Poor: mostly dead stems, plant shows signs of severe stress or disease.

Dead: the entire aboveground portion of the plant is dead.

Cacti ranked in good or fair health will be candidates for relocation. Cacti ranked in poor health or dead will not be considered for transplanting and will be stockpiled for use as vertical mulch.

Age, as measured by size (height) or number of stems of a potential cactus transplant, can also be a factor for success for cactus. Smaller (i.e., young) saguaro cacti (*Carnegiea gigantea*) have demonstrated transplant survival rates of 95 percent; larger (i.e., old) cacti are not as receptive to relocation (NRCS 2009). In contrast, survival is enhanced for larger individuals with multiple stems of some species of *Echinocereus* (Thomas et al. 2019). Therefore, during the health assessment, height or number of stems will also be documented for each plant to aid in transplant selection. The size parameters for salvaged cacti within the CSP Project alignment will be determined in consultation with the appropriate agency(ies).

6.1.4.2.2 Transplant Timing

Salvage of unavoidable candidate plants will occur prior to the start construction at each site. Seasonal considerations will be incorporated into the salvage effort when feasible, such as prioritizing the salvage of cacti during mild weather (e.g., spring). Periods of heavy rain will be avoided. If transplanting must occur during colder months or during rainfall periods, additional methods may be required to ensure successful transplantation (NRCS 2009).

6.1.4.2.3 Transplant Site Selection

The locations chosen to receive transplanted cactus individuals will be selected to maximize long-term survival of salvaged plants. Transplant sites will include sites where work is complete and/or where no impacts are anticipated, such as undisturbed margins of work areas or areas outside of but adjacent to the work area in undisturbed vegetation.

Transplant sites will be located within the SCE ROW or 100-foot buffer. When cactus individuals are transplanted outside of Project disturbance areas, the prospective transplant site will be evaluated to determine if any existing undisturbed cacti are present. Salvaged plants will not be planted in areas with existing high densities of cactus plants to avoid potentially jeopardizing success through over-competition for resources. Care will be taken to ensure that each transplant site is similar to the plant’s original location with respect to slope, soil, soil texture, vegetation community, and degree of sun exposure. A desktop analysis and field survey will be conducted prior to conducting transplanting activities to facilitate avoidance of jurisdictional features, rare plant occurrences, and other sensitive resources (e.g., cultural resources).

6.1.4.2.4 Transplant Preparation Methods

Cactus individuals eligible for salvage based on the evaluation criteria defined in Section 6.1.4.2.1 will be prepared as follows:

- Record the species, size, and current health of the plant
- Record the removal and transplant location with GPS coordinates and required microsite data
- Determine the transplant procedure to be used
- Transplant to adjacent site (preferred), or
- Hold on site or transplant to temporary nursery, then re-plant in original location
- Attach numbered flagging, pins, or other demarcation to identify each plant (tying flagging on the north side for clumps of plants, or for single barrel plants, tying the flag around the stem and locating the knot on the north side to maintain direction)
- Salvaged plants will be stored on site prior to transplanting. In most cases, survival of transplanted plants will be maximized by allowing the roots to heal (approximately 5 days)

For all salvaged plants, materials and tools that come in contact with plant tissue (e.g., burlap, shovels used for excavations) will be rinsed in a 10 percent bleach solution before use on another plant. During the period that plants are held to allow the roots to heal, the plants will be stored in locations that minimize risk of damage or theft. Examples of potential locations may be at the edge of work areas where adequate space is present or at nearby Project features with available space.

Cacti relocated from the shade canopy of adjacent vegetation will not survive direct sunlight and will sunburn (NRCS 2009). Shade cloth will be implemented during hot season transplanting, if drought stress is apparent or suspected. The shade cloth, either supported by a structure over the plant or placed directly on the plant, can be used to protect plants following transplanting until the root system recovers adequate function. Shading will be used during the first summer following transplanting, if needed.

Herbivore protection, such as exclusionary fencing, may be required if signs of herbivore damage is observed at the time of transplanting or during monitoring events.

6.1.4.2.4.1 *Echinocereus* Cactus Salvage

Two *Echinocereus* cactus species are present or have the potential to occur in Project disturbance areas. These species include Engelmann's hedgehog cactus and Mojave king cup cactus. The following is generally a two-person process, recommended to ensure successful transplantation of barrel-type cactus species:

- The plant will be excavated with enough soil mass to maintain a viable root system. Small cactus (under eight inches in height) may be excavated with a shovel, with a soil and root mass extending outward three to six inches beyond the base of the plant. Cactus larger than eight inches in height and width will be prepared by excavation of a 12-inch deep trench around the plant, approximately 12 inches from the base.
- Hand tools will be used to undercut the root mass to a point near where it can be detached. Lateral roots will be saved to the extent possible to help stabilize the transplant (NRCS 2009). The root mass will be wrapped in canvas or burlap, and if needed, the cactus will be stabilized with staking. Cactus will be removed by hand or

with hand tools and carts when possible. Large cactus individuals may require use of heavy equipment, such as an excavator, to lift them out of the trench.

- Immediately after removal from the trench, the root mass will be inspected. Damaged roots will be trimmed back and the root mass will be treated with sulfur to minimize infection risk. Excavated cactus individuals will then be stored on-site under shade cloth for several days, if needed, based on weather conditions, to allow root healing. Shade cloth will be supported by a framework to avoid entanglement with spines.
- After the root healing period, cactus individuals from short-term temporary disturbance areas will be replaced in approximately their original location after completion of construction activities and site stabilization actions. Replanting will require an excavation adequate to contain the root mass. Each cactus individual will be replanted with its original compass orientation (i.e., flagging side facing north), and the soil will be replaced and firmly packed and immediately watered. Watering will be adequate to saturate and compact the soil around the transplant; additional soil will be added as needed.

6.1.4.2.4.2 Cholla and *Opuntia* Salvage

Species of cholla and *Opuntia* are present or have the potential to occur in Project disturbance areas. These species include golden cholla, beavertail cactus, and plains prickly-pear. These species will be salvaged as intact individuals, if feasible, or through propagation of cuttings, a piece of a plant that is used in horticulture for vegetative (asexual) propagation.

Chollas grow with segmented stems that easily detach and fragment and larger plants often cannot be salvaged intact. However, chollas also readily root from the fragmented stem segments. Within Project disturbance areas, live cholla material will be salvaged and stockpiled for use as vertical mulch during restoration. Rooted chollas under three feet in height will be salvaged using methods described for *Echinocereus*. Larger chollas may also be salvaged with the root ball intact, although plant stems may be trimmed as cuttings if intact transplant cannot be achieved. If chollas fragment during the salvage attempt, the root ball will be planted and the stems will be scattered adjacent to the salvaged plant to provide an opportunity for regrowth.

Small *Opuntia* individuals may be salvaged using methods described for *Echinocereus* at the discretion of the Restoration Ecologist. *Opuntia* individuals that cannot be salvaged whole without substantial stem fragmentation will be salvaged as cuttings, with supportive methods used to encourage rooting and cutting survival.

Opuntia pads (i.e., cuttings) will be salvaged from each individual that cannot be salvaged. Three to five healthy pads from each opuntia will be removed at the node (the area where the pads attach to one another) and kept together throughout the salvage and transplant process. Cuttings will be dusted with sulfur and allowed to heal for approximately seven days. Cuttings will be planted as a group from the original plant, buried vertically to approximately half the depth of the pad with the cut side down. Pads will be watered after transplant. The location will be staked with the original plant's unique identification, as tagging separate pads will not be effective. Remaining opuntia material will be salvaged for use as vertical mulch during restoration.

6.1.4.2.5 Temporary Nurseries

Use of temporary nurseries will be avoided, as feasible. Temporary nurseries would require transplanting individual plants multiple times, which decreases the survival of salvaged plants. However, a temporary nursery may be considered if there is no suitable transplant location nearby. Some locations on the Project have high densities of cactus and the surrounding habitat may not support the addition of transplanted cactus from other areas. Therefore, if a suitable

location is not available in the adjacent habitat, or would not be available within a short period of time, a temporary nursery will be considered.

Temporary nurseries would be on site if adequate space with level ground and access is available at a nearby Project disturbance area, or if necessary, at the nearest Project staging yard. Temporary nurseries would consist of a raised bed with native soils if on site or clean sand if in a yard. Prior to the final transplant from the temporary nursery back into the transplant site, the health of the plant will be evaluated. Plants in poor condition will be used as vertical mulch, as their probability of survival if transplanted is low.

If feasible, plants held in temporary nurseries would be replanted in early spring. After removal of plants from temporary nurseries, the above-ground frame and soil would be removed. Native soils would be used in the recontouring of the site after construction is complete.

6.1.5 Topsoil Salvage, Storage, and Placement

The CSP project is a linear project with small work areas. The means of establishing native communities will prioritize preservation of soils within temporary use areas supporting native vegetation. Revegetation may be performed through application of native seed mixes and select use of native plants. Small disturbance areas may not require seed application and can be passively restored through effective weed abatement and soil stabilization.

The practice of salvaging and stockpiling topsoil is intended to preserve the microbial network within the soil and to retain the native seed bank and organic material important to nutrient cycles within the soil. This treatment is most appropriate at sites with native vegetation in which severe disturbance to the soil will occur, such as grading or excavating, and the protection of existing soil is not feasible. Many work areas within the White Mountains will be accessed by helicopter and will not be subject to severe ground disturbance.

SCE proposes to salvage, stockpile, and reuse soil in temporary impact areas where it is beneficial to do so and will clearly contribute to the successful establishment of the target vegetation communities and/or to support special-status species.

Potentially suitable sites for topsoil salvage shall meet the following criteria:

- Construction activities such as underground trenching, heavy grading, or other excavation activities where natural soil horizons are substantially disrupted
- Areas dominated by native species with low to no cover of non-native species
- Stockpile locations should be identified in safe locations and restricted to existing approved disturbance areas and in compliance with other environmental and visual restrictions.

Limiting factors for topsoil salvage:

- slopes greater than 25%
- sites with cultural resources where ground-disturbing activities are limited
- weed infestation areas

Salvaged topsoil shall be stored in compliance with the SWPPP requirements. If covering the topsoil pile is recommended to prevent soil migration, use of jute or other permeable erosion control materials is recommended to allow adequate oxygen to soil biota. All topsoil salvaging and topsoil replacement areas will be documented and monitored, with the perimeter of each area recorded, along with dominant species, using GIS data collection tools.

6.2 Container and Cutting Plant Materials

Habitat restoration will be primarily achieved through a combination of seeding where possible, coupled with appropriate use of container plants and/or cuttings for species that exhibit low germination rates under field conditions, especially at high elevations. Use of container plants at high elevations in the White Mountains, where the growing season may last only 6-10 weeks, may facilitate establishment of dominant woody plants in a timely manner. Plant species that may benefit from establishment from container plantings include bristlecone pine, limber pine, singleleaf pinyon pine, Utah juniper, and several species of high elevation shrubs such as littleleaf mockorange and small-leaf mountain-mahogany. The plant palette tables for different vegetation types in Section 6.1.1 identify suitable candidates for container plantings by habitat.

As described in Sections 6.1.2, 6.1.3, 6.1.4, and 6.1.5, salvage on native plant material and topsoil will also be implemented to restore native species and associated soil microbiomes.

6.2.1 Container Plant Cultivation

Container plants may be used for certain species that are unlikely to readily germinate under field conditions. Seeds or cuttings used for propagating nursery-grown container plantings must be acquired from locally-collected plant material within the appropriate seed transfer zones (USFS 2022) and may be collected prior to construction and delivered to a restoration nursery for cultivation, as described in Section 6.1.1.

The size and shape of the containers should match the plant's rooting strategy (i.e., deep-rooted plants should be grown in tall pots to encourage more root development, while fibrous-rooted plants can be grown in shorter pots or as plugs).

Container plants will be grown for a minimum period of four months in a greenhouse or under shade cloth and then conditioned in full sun for at least four months prior to planting. SCE will inspect all container plants prior to or upon delivery to verify that the plants are of the correct species and quantities, are visually free of weeds, pests and disease, and showing signs of healthy growth (e.g., no evidence of coiled roots), as determined by a visual field inspection upon delivery. Any plants that are not within these standards will be rejected.

Container plant installation is discussed in more detail in Section 6.5.2.

6.2.2 Cuttings Collection

Cuttings of shrub and tree species may be prepared to assist with plant establishment in restoration areas. Cuttings must be acquired from the appropriate seed transfer zones (USFS 2022). Cuttings may be used to propagate some species grown in a nursery to produce container stock if viable seed is not available. Unrooted cuttings of riparian species may be placed directly in the ground in restoration areas with moist substrates, based on guidance from the Restoration Ecologist.

Cuttings may be collected locally and prepared according to the following specifications. Cuttings generally should be harvested in the late winter months after the plants have entered dormancy and deciduous species have dropped leaves but before budding in early spring. Timing will be depending on location and elevation. Soaking of cuttings in water will occur immediately for select riparian species. Rooting hormones in the water may be used to increase the potential for establishment following transplantation. These guidelines apply to collection of cutting materials:

- Cuttings shall be placed in water until planting, any cuttings allowed to dry shall not be used, or cuttings may be collected and propagated at an approved and qualified nursery in containers from no more than 6 months prior to planting.
- Collect cuttings from healthy plants that are in a dormant state (riparian species).
- Collection should not exceed 25 percent in a single area, and no more than 25 percent of an individual plant shall be removed.
- Cuttings will be 1-5 feet in length and should range from 1-3 inches in diameter.
- Each cutting shall be cut one end square above a leaf bud and the cut the other end at a 45-degree angle.
- Trim any stems or leaves flush with the cutting.

Installation of cuttings is discussed in more detail in Section 6.5.3.

6.3 Post-construction Site Preparation

6.3.1 Removal of Debris

All restoration sites shall be free from trash and debris. SCE will make all reasonable efforts to remove trash and debris from every restoration site prior to installation and throughout the maintenance and monitoring period.

6.3.2 Non-native Plant Removal

Prior to seed and/or plant installation, SCE will as described in the IPMP, remove any non-native plants from the restoration site by hand-pulling, mechanical removal, and/or herbicide application. Plant materials containing viable seed shall be immediately bagged, removed from the site and disposed of at an approved location. Rhizomatous species will be treated with herbicide to ensure that plants cannot re-sprout, if herbicide use is approved by the appropriate agency. All herbicides shall be applied in a manner to minimize/avoid drift or transport of chemical away from target plants and in accordance with all state and federal regulations and manufacturer's instructions by a Licensed Qualified Applicator under the direction of a Pest Control Advisor (PCA). In riparian areas, only water-safe herbicides approved for use near water shall be used unless otherwise approved.

A weed control management approach referred to as "grow and kill cycles" may also be implemented at select sites as a component of site preparation. Grow and kill cycles is the management approach of using irrigation or natural rainfall to intentionally stimulate the germination of weed seeds within the restoration site. The germination and growth of weed seeds is followed by subsequent treatment and removal of the weedy material, often by herbicide application, conducted at the appropriate growth stage to achieve maximum kill of the unwanted plants. Grow and kill cycles contribute to the reduction of weed seeds present within the existing seed bank by extracting and eliminating the material prior to installation of native seed material. Depending on the conditions of the site, multiple grow and kill cycles may be implemented within a single growing season. On sites with temporary irrigation systems installed, grow and kill cycles can be implemented during the dry season as well.

6.3.3 Recontouring

If necessary, temporary impact areas that are disturbed by Project construction activities will be recontoured to restore the original land contour and slope grade of the adjacent areas to the

extent feasible to restore a natural appearance. Gravel or rock laid at temporary impact areas will be removed. Recontouring shall take place at the cessation of construction activities.

6.3.4 Soil Decompaction

Soils in restoration areas that are compacted or become compacted as a result of Project construction activities (e.g., use of heavy equipment or large construction vehicles, repeated/regular driving on site) shall be loosened prior to seeding and/or planting. Appropriate locations for soil decompaction will be identified by SCE in consultation with the Restoration Ecologist. A penetrometer may be used to measure the compaction on adjacent reference sites to determine if decompaction is required. Decompaction shall occur prior to the restoration installation activities. Decompaction can be achieved by loosening the soil using a backhoe, equipment with ripping teeth, a disk harrow, or manually using shovels. The soil at rooting depth shall be loosened to a minimum depth of 12 inches unless otherwise specified by a SCE restoration specialist; loosening may need to occur at a greater depth depending on the existing soil conditions. The surface shall be left rough-textured with no clods or rocks greater than three inches in diameter. Following loosening, the soil shall be track walked or texturized to create a surface suitable for hydroseeding and planting. For some sites, decompaction may be limited by the SWPPP requirements.

6.3.5 Erosion Control BMPs

SCE will maintain erosion control best management practices (BMPs) within restoration sites in compliance with SWPPP requirements. To prevent sediment from leaving the restoration areas or rills from forming, SCE shall ensure that the proper remedial measures are in place. This may include hydroseeding, and/or installation of erosion control measures such as silt fencing, straw or coir wattles, hay bales, and jute netting. SCE will make every effort to integrate SWPPP treatments with restoration site preparation.

6.3.6 Soil Amendments

The use of soil amendments is not anticipated; however, if topsoil replacement is not possible, SCE may add organic soil amendments to improve nutrient holding capacity, soil structure, and root development under the guidance of the Restoration Ecologist, if consistent with the licensing/permitting documents. In addition, native plants with tolerance for specific conditions may be substituted for species in the current palette.

6.4 Irrigation System (Contingency)

Container stock installation requires an associated irrigation method to supply irrigation through the first one to three years. This may include the use of a water truck to water container plantings in small areas or installation of a temporary irrigation system.

Irrigation will be installed and tested prior to container plant installation and may include use of flood bubblers or drip emitters. In cases of very small or remote planting sites, gel water product, or hand watering using buckets may be used to irrigate container plants.

Irrigation frequency is discussed in Section 7.1.

6.5 Plant Installation

Plant installation methods, including seeding, container planting, cuttings installation, and plant protection are described in this section.

6.5.1 Seeding Methods

Seeding will be completed following site preparation activities and non-native plant abatement using the seed sourcing guidelines detailed in Section 6.1.1.

To the extent possible, seeding will be conducted when atmospheric moisture levels are high. Seeding would be accomplished through application of an appropriate seed mix via one of three techniques: imprint seeding, hydroseeding, or broadcast seeding. Seeding rates based on the seeding method will be incorporated into Site-based planning under the guidance of the Restoration Ecologist. For instance, broadcast seeding requires higher seeding rates than mechanical seeding.

The seeding method implemented at each restoration site will depend upon accessibility and size of the area to be seeded. Easily accessible areas will be seeded with the imprint seeding method, and/or hydroseeding method; smaller more remote and/or inaccessible areas will be broadcast seeded. These methods are described below.

6.5.1.1 Imprint Seeding

Imprint seeding may be used in mitigation sites that are large enough and accessible for the imprinting equipment and where the soils are neither too loose nor heavily compacted. Imprint seeding provides greater soil-to-seed contact and provides a pocket for water infiltration that protects and encourages germination. Imprinting is accomplished via a mechanical imprinter that is pulled behind a tractor or tracked vehicle and simultaneously spreads and buries seeds in V-shaped depressions. In appropriate soils, imprinting facilitates successful establishment of seed into the soil and eliminates the need for mulch, soil irrigation, and soil binding. Imprinting also increases rainwater infiltration, improves gas exchange between the soil and atmosphere, reduces erosion, and improves contact between seeds and soil water (Barnes, 1950; Gintzburger, 1987; Bainbridge 2007). Hard soils should be loosened using ripping shanks, or similar equipment, prior to imprinting to ensure that the troughs are deep enough to retain water. Wheat bran or similar binder should be mixed with seed to assist with uniformity of application rate. Where container planting is also planned, imprint seeding should take place prior to container planting. In lieu of an imprinting machine, dozer track walking perpendicular to the site contours may also be used to create seed “safe sites” prior to hand-broadcasting or hydroseeding.

6.5.1.2 Hydroseeding

The designated seeding areas should be seeded using the following hydroseed application methods. Where container planting is planned, preventative measures may be taken to avoid damage to container plants and cuttings such as covering plants to prevent them from being coated with hydroseed slurry, or damaged from hydroseeding spraying. The seed mix (quantity will vary based on habitat type and site-specific conditions) will be mixed with approximately 2,000 pounds per acre of long-strand wood fiber, a colorant, 150 pounds per acre of binder (adjust accordingly for slope), and sufficient water to allow the mix to be applied evenly over the restoration area. All hydroseeding mixing shall be performed in a clean tank, rinsed a minimum of three times (to ensure the removal of any residual seed) in a wash out area. The hydroseeder would be equipped with a continuous agitation and recirculation system to produce a uniform slurry and have the capacity to apply this slurry at a uniform and continuous rate.

Application of hydroslurry would comply with product specifications. The designated areas would be sprayed with the slurry in a sweeping motion and in an arced stream until a uniform coat is achieved, with no slumping or shadowing as the material is spread at the required rate. Any excessive mulch coating on plants would be removed. The seed slurry would be applied

within one hour of preparation as the viability of the seed could be compromised. A typical rate of application in arid California is 500 pounds per acre of wood fiber mulch for hydroseed-only sites and 1,500 to 2,000 pounds per acre of wood fiber mulch and a tackifier for the hydromulch method (Newton and Claassen 2003); however, the Restoration Ecologist will determine the specific rate of application on a site-by-site basis in consultation with the SWPPP consultant.

6.5.1.3 Broadcast Seeding

Broadcast seeding will generally be used where mechanical seeding is deemed infeasible because of substrate, location, or disturbance area size. In general, application of hand-broadcasted seed will be reserved for areas approximately 0.5 acre or less or where small amounts of seed are needed. However, greater quantities of broadcast seed are generally required for successful plant establishment compared with mechanical seeding methods.

Hand-seeded sites will be raked or harrowed before seeding to break up the surface and after to allow seeds to fall into crevices. Raking or other post-seeding treatment to lightly cover seed will also be completed to enhance germination likelihood, provide even distribution of seed, and reduce losses to granivores. This will also help retain moisture for germination. The seed material may be broadcast by hand or using a seed spreader. Hand seeding will be timed to occur in early spring, depending on location.

6.5.2 Container Planting

Container planting will occur prior to seeding activities when feasible. All container plants will be inspected prior to planting to ensure that they are healthy, free of weeds, pests, and disease, and the proper size. Container plants will be installed in areas determined to be feasible and appropriate by SCE. During transport from the nursery or storage facility to the planting site the plant material will be handled carefully, such as the plants shall not be dropped, tossed or otherwise “roughly handled.” Upon plant delivery, container plants shall be stored in a designated temporary storage location that is within a developed or disturbed area approved by SCE. Plants will be protected from herbivory, vandalism or theft, as well as maintained (watered) while they are in temporary storage for planting.

Plants will be arranged in a pattern that reflects the surrounding vegetation, and will vary depending on the species. Planting holes will be excavated to diameters approximately twice that of the root ball (but not deeper than the root ball, to avoid settling). Planting holes will be thoroughly moistened prior to placement of container plants. During installation of container stock, care will be taken to minimize disturbance of the root system while extracting the plants from their containers. The plants will be placed in the holes and loose native soil will be backfilled into the hole around the plant and firmly hand-packed around the root ball to eliminate any air pockets. For deep pots, soil will be backfilled and packed in lifts of a few inches at a time to discourage settling of plants. Berms or basins may be constructed to aid in irrigation, but special care will be taken to avoid pooling of water around plant stems or settling of the stem/root union below grade. Plants will be watered deeply immediately after installation.

All container plants and trees shall be planted in accordance with the following specifications:

- Plants shall be planted with the roots untangled and sides scarified to promote new root development, roots shall be protected from weather exposure during planting.
- Planting holes shall be augured and be no more than 1.5 times the diameter and 2 times the depth of the container species to be planted.

- Planting holes shall be backfilled 25 percent with excavated native soil and filled with water and allowed to drain completely prior to planting. Container plants must never be installed in planting holes with standing water; all water shall be allowed to settle and infiltrate through the soil prior to plant installation.
- Plantings shall be set in well-drained planting holes with the crown of the root ball approximately 0.5 inches above the backfilled soil. The soil around the planting shall be tamped down sufficiently to eliminate any air pockets in the soil.
- A basin around the planting shall be constructed by creating a berm above the existing grade approximately 24 inches in diameter around the planting.
- Each planting shall be sufficiently watered after installation so that water reaches the lower roots.

Some planted container stock may require protection against herbivory. Herbivore barriers made of chicken wire or a similar material that will prevent herbivores to chew through the barrier. Barriers will be a minimum of two feet above ground. The herbivory cages shall be inspected during each maintenance visit and removed when that herbivory will no longer compromise the health and establishment of the plantings. Herbivory caging will be removed before it hinders plant development and growth. If determined that there is a potential threat of subterranean root damage by small mammals, wire cages constructed of chicken wire may be installed into planting holes prior to planting.

Container stock installation requires an associated irrigation method to supply irrigation through the first year at a minimum. Irrigation will be installed and tested prior to container plant installation and may include use of flood bubblers or drip emitters. In cases of very small or remote planting sites, gel water product, or hand watering using buckets may be used to irrigate container plants.

6.5.3 Cuttings Installation

Planting of cuttings will occur prior to seeding activities when feasible. Cuttings will be planted at the appropriate time for each species utilized. For example, cuttings from riparian tree species will be obtained, prepared, and planted when trees are dormant. Cuttings will be provided with supplemental water following planting until the cuttings show signs of growth and/or establishment. Cuttings will be planted with similar density and composition as adjacent habitat. After initial preparations as discussed above, cuttings shall be installed following these specifications:

- Cuttings shall be planted in holes approximately 2 inches in diameter; with a minimum depth of two-thirds of the cutting length; all planting holes shall have vertical sides.
- Each hole shall then be partially backfilled with excavated soil material then saturated with water; this step shall be repeated until the hole is at least half backfilled.
- Once the water has absorbed into the soil, a cutting shall be inserted into the hole with the angled end in the ground. The cutting shall be installed so two-thirds of the cutting length is below ground with at least 3 leaf bud scars above the surface of the soil.
- The hole shall then be backfilled completely with excavated material and distributed evenly around the cutting, the backfill shall then be tamped down sufficiently to eliminate air pockets.
- After installation the cutting will be soaked at least twice to fully saturate the soil down to the base of the cutting and to assist with settling the cutting.

6.5.4 Plant Protection

Some plantings may be vulnerable to herbivory by rabbits, burros, deer, cattle, and/or other herbivores, and use of tree tubes, deer cages, or perimeter fencing may be considered for specific sites. In addition, some areas may be subject to offroad use and require plant protection, including but not limited to hard barriers, to protect vulnerable seedlings and plantings.

The installation of plant protection measures will be addressed on a case-by-case basis during the restoration planning phase of the Project.

7.0 Maintenance

Maintenance will begin with implementation of the restoration work at each of the Project's temporary disturbance areas and will continue for five (5) years or until success standards are met. Maintenance tasks may include supplemental watering, erosion control, and weed/pest abatement. Environmental conditions will be monitored, and adaptive measures may be applied as necessary.

7.1 Irrigation

topsoil replacement areas and seeded areas will generally rely on natural precipitation for seed germination. If the topsoil replacement area(s) or applied seed area(s) do not support successfully germinated native plants due to low seasonal precipitation, supplemental watering may be employed as a remedial action to promote plant establishment and growth so that the resulting restoration areas meets success standards. Supplemental watering may also be conducted in restoration areas where container plantings have been installed, if needed.

7.1.1 Supplemental Watering

The appropriate supplemental watering methodology will be decided on a case-by-case basis. Watering would be gradually reduced as the plants become established, except in case of severe drought, where prolonged lack of moisture might interfere with restoration area(s) meeting success standards.

The goal of irrigation is to supplement or mimic natural rainfall patterns to promote root systems to maximize survival and vigor. Irrigation may be used on sites where container plants or cuttings are installed, as well as in topsoil replacement areas and seeded areas. Irrigation and supplemental watering may be considered in conjunction with other restoration treatments on a site-by-site basis. Specific schedules and quantities of irrigation will depend on weather patterns and site conditions.

7.2 Weed Control

Weed control measures will be implemented during post-construction restoration where necessary in accordance with the IPMP. Control measures may include physical (hand-pulling, mechanical removal) and chemical (herbicide application) treatment methods. These control methods shall be dependent on the weed species, location of weeds, and the time of year that weed control operations occur.

7.2.1 Physical Methods

Physical/manual weed control methods may be appropriate in sensitive habitats, immediately around container plant basins, around germinating native species, and in areas where chemical methods are prohibited. Recommended physical control methods are as follows:

- Hand-pulling may be used to remove localized and discrete populations of herbaceous species prior to seed set. Cutting may be used to remove shrub and tree species. This method may require follow-up herbicide applications to kill the root system and prevent re-sprouting.

- Mechanical removal may be used to remove weed infestations from large areas where few or no native plant species are present. This method may use a mower, weed whacker, or tiller.

7.2.2 Chemical Methods (Herbicides)

Herbicides can be a very effective method in controlling weed species by killing or inhibiting plant growth. The appropriate chemical and method of application is based on the species, the degree of infestation, time of year, temperature, and environmental conditions. Only state, BLM-, and/or USFS-approved herbicides may applied with prior approval by BLM or USFS INF on federal land. In addition, herbicides will be used following USEPA label instructions, and applications will be performed in accordance with federal, state, and local laws and regulations. The environmental risks of using herbicides will be minimized by using marker dyes to make the herbicide visible in areas where it has been applied.

7.3 Plant Protection

Tree shelters or herbivory caging may be installed with plants during initial planting to provide protection from harsh environmental conditions and herbivores. Plant protective caging and tree shelters will be maintained during the maintenance and monitoring period. Maintenance may include repairs, replacement, installation of caging (if not initially installed) , and removal of plant protection if plants have outgrown the protective barrier. All tree shelters or herbivory cages, will be removed at the end of the monitoring period. Barriers, such as placement of large boulders to deter vehicle traffic, may be necessary to protect planting areas. The type and placement of these protective barriers will be developed in conjunction with the USFS or BLM on federal lands.

The installation of remedial plant protection measures will be addressed on a case-by-case basis during the maintenance phase of the Project.

8.0 Monitoring (excluding Special-status Plant Species and Cacti)

8.1 Monitoring

SCE will perform periodic monitoring to assess site stabilization and restoration progress at each restoration site. Assessments during monitoring may include seed germination observations, evaluation of restoration progress such as planting and salvaged plant survival and volunteer recruitment of native species, estimates of percent native and weed cover by species, and documentation and correction of any erosion problems. SCE may also evaluate other performance indicators, including the presence of significant disease or pest problems, signs of herbivory, and the need for remedial measures.

The monitoring period will commence after installation and will continue for five (5) years or until the success standards are met. Monitoring may consist of maintenance and performance monitoring. When the success standards are met, no further maintenance, monitoring, or remedial measures will be required.

8.1.1 Maintenance Monitoring

SCE will perform maintenance monitoring to assess the maintenance needs of the sites and progress in meeting success criteria. Planted sites will be monitored monthly during the growing season, and seeded sites will be monitored once every 3 months during the growing season. This frequency will be maintained for the first two years after construction is complete; thereafter, all sites will be monitored quarterly. Timing of all monitoring events is subject to weather and safe access considerations. Maintenance monitoring will be focused on the potential need for remedial actions to address problems that could influence plant growth and not on the success standards themselves. Maintenance monitoring will be conducted Project-wide in restoration areas, as well as at least one time in areas where drive-and-crush was implemented, to assess the need for remedial actions and develop continency plans, if needed. Remedial actions may be implemented in drive-and-crush areas if maintenance monitoring indicates that the level of disturbance from the Project precludes successful natural recovery.

The timing of visits may be adjusted based on the season (e.g., more weed growth occurs in spring and early summer, depending on location), restoration activity (i.e., container plant installation), access to the site, and the needs of the site. Assessments may include evaluation of soil conditions (i.e., moisture), container plant health, container plant growth, seed germination, irrigation system function or the need for supplemental watering, volunteer recruitment of native species, presence/absence of non-native plant species, presence of significant disease or pest problems, general site maintenance, and any erosion problems. Maintenance monitoring results will be communicated immediately to the Restoration Ecologist to ensure that issues are addressed in a timely manner, and adaptive management strategies will be implemented, if needed (see Section 11.0). Issues such as drought and the need for supplemental watering must be addressed so that success standards are met.

8.1.2 Performance Monitoring

SCE will perform performance monitoring . The specific timing will be intended to provide the most useful information on progress towards meeting restoration objectives and the success standards detailed in Section 10.0. Generally, the monitoring survey will occur in early to mid-summer, depending on location, after annual plants would have reached maturity but before senescence

and high summer temperatures. This timing allows estimates of the maximum level of annual and perennial ground cover and allows identification of most plant species. Monitoring for special-status species would occur in the appropriate season to identify and determine success.

The goal of performance monitoring is to evaluate the progress of the restoration site towards achieving success criteria, which are set relative to pre-Project disturbance (baseline) conditions as described in Section 5 above. An appropriate reference site will be selected for each vegetation type that is similar in vegetative composition as well as environmental parameters for sites that may not have baseline data and to account for seasonal fluctuations of vegetation cover and diversity due to weather or climate conditions.

Data collection may include general site conditions, native and nonnative plant percent cover representing amount of growth, bare ground cover, plant density, container and , salvaged plant survival, species richness, and photo documentation and/or aerial surveys. Height measurements may also be made for trees such as bristlecone pines. Data collected will be compared to baseline conditions or reference site conditions to assess progress in meeting success standards and determine if remedial actions are needed. In particular, the success standards for percent cover should be relative to baseline conditions. Baseline condition data may be modified based on reference site conditions over the monitoring period. For example, baseline data collected in drought conditions may be artificially low and may need adjustment relative to reference site data collected concurrently. Similarly, baseline conditions collected in a good rainfall year may need adjustment in extended drought conditions relative to reference site data collected concurrently. Drought conditions may require enhanced supplemental watering (see Section 7.1 and 8.1.1) so that success standards are met.

Vegetation cover data collection will generally follow the line-point intercept methods outlined in the Monitoring Manual for Grassland, Shrubland, and Savanna Ecosystems, Volume 1 (Herrick et al. 2017). Cover data will be collected along three transects at most sites. Very small sites will require modified design and additional transects may be added to large sites. Data will be collected at specific points along the line. The design will be modified to fit the size and shape of the restoration site. Cover data using the CDFW-CNPS Protocol for the Combined Vegetation Rapid Assessment and Relevé Field Form (CNPS 2019) methods may also be collected.

Vegetation sampling will follow the methods outlined in the CDFW-CNPS Protocol for the Combined Vegetation Rapid Assessment and Relevé Field Form (CNPS 2019). In addition, photographs of the site will be taken from permanent photo monitoring stations facing the restoration area. The locations of the photo monitoring stations will be recorded using GPS.

8.1.3 Monitoring Schedule

A five (5)-year maintenance and monitoring period will commence following installation to track progress toward achieving success standards. For the five (5)-year monitoring program, maintenance monitoring will occur monthly in Year 1 (conditions permitting) and quarterly for Years 2-5 and will continue until the success standards are met. Following installation, data from the first performance monitoring event, which generally occurs every summer, will be in the As-Built report. The monitoring schedule is presented in Table 8-1.

Table 8-1 Monitoring Schedule

Restoration Phase	Frequency (per Calendar Year)	Duration
Installation period	Twice per month (directly follows completion of plant installation).	120 Days
Maintenance Monitoring Years 1 -3	Up to 20 events; timing may vary by year but should be scheduled to sufficiently assess weed occurrence, soil moisture, planting health and growth, natural recruitment, and presence of disease or pests.	Variable
Maintenance Monitoring Years 4 & 5	8 events; timing may vary by year but should be scheduled to sufficiently assess weed occurrence, soil moisture, planting health and growth, natural recruitment, and presence of disease or pests.	Variable
Performance Monitoring Years 1- 5	5 events; will typically occur in summer but may vary by year to optimize data collection and account for year-to-year variations in rainfall and/or other factors.	Variable

9.0 Monitoring (Special-status Species and Cacti)

SCE will implement a monitoring, maintenance, and reporting program to record implementation efforts for special-status species and cacti and to evaluate progress of the restoration efforts towards meeting the success standards set forth in this Plan. The purpose of monitoring and reporting is to document successes, failures, and remedial actions related to the effort. Monitoring the status and progress of this effort will allow for timely adaptive or remedial measures to increase the probability of success.

Monitoring and maintenance will begin at the commencement of the seeding, salvaging, and/or planting effort and will continue for up to 5 years, or until the success standards are met. When the success standards are met, no further maintenance, monitoring, or remedial measures will be required.

9.1 Monitoring

Seeded, salvaged, and/or planted special-status plant and cactus individuals will be monitored throughout the first year, beginning at the commencement of the seeding, planting, and/or salvage and relocation effort, to increase the rate of re-establishment and reproductive success. Performance monitoring will be conducted annually for up to five years, or until the success standards are met, or if directed otherwise by the appropriate agencies, following the schedule presented in Section 8.1.3.

Monitoring field work will be timed to allow a growing season following completion of transplanting (or previous monitoring effort) to occur and may be conducted concurrently with other monitoring surveys performed as required by this Plan. Monitoring will be conducted by qualified botanists with experience identifying native and non-native plants present in the Owens Valley, White Mountains, or nearby areas in the Great Basin. Performance monitoring frequency may be increased in response to observed conditions, such as unusually dry years or the potential need for remedial actions after the first year of maintenance.

Success standards for special-status plant and cactus individuals are outlined in Section 10.0..

9.2 Maintenance

Maintenance visits will be conducted approximately every 2-4 weeks in the first year but may be increased and/or extended in response to observed conditions, such as unusually dry years or the potential need for remedial actions after the first year of maintenance.

Seeded, salvaged, and/or planted special-status plant and cactus individuals will be monitored and maintained throughout the first year to increase the rate of re-establishment. For salvaged individuals or container plantings, depressions or small berms (depending on the species, size of plant, soil conditions, etc.) will be created at the base of each transplant to capture rain and irrigation water to better allow the soil to become and remain saturated. These watering basins may require maintenance over time.

Salvaged plantings or container plantings will receive one year of irrigation after planting and may require supplemental irrigation in Years 2 and 3, depending on natural precipitation. Irrigation can be conducted near sites with a permanent water source, and near permanent access roads, through the installation of a temporary system that can be fed by a water truck. Direct watering with a hose fed by a water truck may also be appropriate near access roads, if the process can be accomplished without damaging restored vegetation. In cases of very small

or remote transplant sites, gel water product, or hand watering using buckets may be used to irrigate the transplanted plants.

Hand watering with buckets or a hose will be used as described above to wet the upper 4 to 5 inches of soil once per month, based on soil moisture levels. During prolonged hot, dry weather, transplanted cacti will be watered approximately every 14 days. Additional supplemental watering to help the plants establish will be provided as needed and determined by the Restoration Ecologist.

Watering will be kept to a minimum during the winter dormancy period. Transplants will not be watered during rainy periods. Watering will then follow the seasonal guidelines above, and at the discretion of the Restoration Ecologist.

Watering often encourages weed proliferation in disturbed or treated areas. Therefore, when irrigation occurs, applications of irrigation water will not be widely broadcast (e.g., overhead spray) but will be restricted to individual transplant specimens as much as possible (e.g., manually directed from a bucket or hose).

Manual removal prior to the plants' production of seed will be used to control weeds at planting sites. Grasses can be controlled by removing the flower heads. However, species such as mustards must be removed entirely, along with the roots, if possible. Methods for weed control will be implemented in accordance with guidelines and specifications provided in the Project's *Invasive Plant Management Plan*, prepared under a separate cover.

10.0 Success Standards

The following performance standards are proposed to be used for restoration areas on the Project:

- Achieve 70 percent of native species cover, relative to the reference site with the same vegetation community.
- Evidence of natural recruitment of native plant seedlings documented within restoration areas.
- Salvaged and transplanted cacti survival will be monitored annually until this success standard is met for each respective species. Annual monitoring will be performed by conducting a census of each surviving transplanted cactus individual present in each restoration planting area. The transplanted cactus survival success standard is that 70% of the number of transplanted individuals of a given cactus species must be present in the combined restoration area(s) by the end of Year 5.
- Special-status species reproductive vigor will be monitored annually after seeding and/or planting until this success standard is met for each respective species. Annual monitoring will be performed by conducting a census of each reproductive surviving special-status species by planting area. Reproductive status includes production of buds, flowers, and/or fruits. Monitoring events will be timed to census flowering and/or fruiting individuals. The special-status species reproductive vigor success standard is that 50% of individuals of a given special-status species present in combined restoration area(s) will successfully produce reproductive structures at least once during the five-year monitoring period.
- Non-native foliar cover will not exceed non-native baseline cover. Any new introductions of invasive plants will be eradicated per the IPMP and in accordance with existing BLM and USFS regulations.
- Evidence of wildlife use.

These performance standards may be modified by the applicable land management agency. Restoration activities will continue until success standards are met. Adaptive management and contingency measures may be implemented if there are significant changes to the revegetated areas, if there is a failure to establish, or if restored areas are not on-track to meet success standards within the five-year maintenance period.. After five years, SCE will consult with the agencies to discuss options for restoration areas that have not met success standards.

11.0 Adaptive Management and Contingency Measures

Adaptive Management may be needed if there are significant changes to the restoration site(s) or if a site demonstrates a declining trend. As needed, SCE will implement Adaptive Management measures to facilitate success of the restoration site(s). Sites where current conditions do not reflect desired trends or are not stabilized may require remedial measures such as reseeding and/or replanting, supplemental watering, controlling invasive plant species, additional stabilization measures (e.g., erosion control blankets), regulation of human and/or wildlife access to the restoration site, or establishment of invasive weed populations (which will be eradicated per the success standards). Replacement or supplemental seeding will be representative of native plant species for the associated habitat area, provided in the seed palettes outlined in Section 6.1.1.

In the face of a *force majeure* event (e.g., flood, fire), or other event beyond SCE control, damages a restoration area within the monitoring period, SCE will assess adjacent areas and adjust success standards accordingly in coordination with the agencies.

12.0 Reporting

SCE will prepare annual reports and will notify the BLM, CPUC, and USFS when the restoration effort is complete.

12.1 Annual Monitoring Report

SCE will prepare and submit annual reports for a period of five (5) years post-construction, or until success standards are met. The annual report will provide a summary of site conditions, restoration treatments, maintenance activities, and the results of the qualitative and quantitative monitoring. It will also include a general discussion of the previous year's changes at the restoration sites, special-status plant establishment, effectiveness of off-highway vehicle (OHV) deterrents and signs of encroachment, grazing impacts, trash removal, and remedial actions.

The annual report will also outline the activities for the following year and may include a discussion of adaptive management and contingency measures (see Section 11). Additional annual monitoring reports may be required if success criteria are not met within the five-year monitoring period.

Annual reports will be submitted by SCE to the BLM, CPUC, and USFS as appropriate. Quantitative monitoring data and spatial data will be part of this report.

12.2 Notification of Completion

SCE will notify the BLM, CPUC, and USFS when the restoration effort is complete and success criteria have been met at sites. The notification would be submitted electronically and will be accompanied by a brief letter referencing the final annual report.

For sites that are unable to meet success criteria, SCE may request sign-off. For sites with disturbance outside SCE's control (e.g., vehicle use, livestock grazing, or land use conversion for non-Project purposes), it may not be possible to reestablish native vegetation. Some sites that have received all appropriate treatments and multiple years of adaptive management measures may not meet success standards. In these situations, the agencies (BLM, CPUC, State Water Resources Control Board [SWRCB], and USFS, as appropriate) may concur that additional efforts are not warranted and sign-off on these sites. The BLM and USFS must provide concurrence and sign off for restoration activities to cease on BLM and/or USFS lands.

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