Appendix L3

Integrated Weed Management Plan

HELIX Environmental Planning

Ocotillo Wind Energy Facility

Integrated Weed Management Plan

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OCOTILLO WIND ENERGY FACILITY
INTEGRATED WEED MANAGEMENT PLAN

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1.0 INTRODUCTION

This Integrated Weed Management Plan (IWMP) has been prepared for the Ocotillo Wind Energy Facility (OWEF) project. The preparation of this IWMP is a requirement of Mitigation Measure Veg-1d, as outlined in the project's draft environmental impact report/environmental impact statement (EIR/EIS).

This document provides a comprehensive, adaptive IWMP that covers the time prior to the start of construction activities through the life of the project. This plan summarizes the results of the preconstruction survey of invasive, non-native plant species for the entire proposed project work area; identifies non-native plant populations that occur or have potential to occur within the project area; describes pre-construction measures to limit non-native species proliferation within the work areas; specifies operation and maintenance requirements related to the control of non-native plants during construction; and outlines post-construction monitoring and adaptive management procedures for the most invasive non-native species. This IWMP is intended to be adaptive in order to not only control weed species that are already present within the work area, but also address the potential introduction of new weed species during both the construction period and the operations and maintenance period.

Invasive weeds threaten vegetation resources in that they can exclude native plants (including special status species occurring in the project area), alter habitat structure, increase fire frequency and intensity, decrease forage for herbivorous wildlife (including special status species), and decrease water availability for both plants and wildlife. Within this document, the term ―noxious weeds" represents non-native plants of concern to the California Invasive Plant Council (Cal-IPC) or the Bureau of Land Management (BLM). These species are of particular concern in wildlands because of their potential to degrade habitat and disrupt the ecological functions of an area (Cal-IPC 2006).

2.0 PROJECT DESCRIPTION

2.1 PROJECT BACKGROUND

The OWEF consists of construction, operations and maintenance (O&M), and decommissioning of up to a 356.5 megawatt wind energy facility within an approximately 12,484-acre project area near the town of Ocotillo, Imperial County, California (Figure 1). Facilities for the OWEF would consist of up to 155 wind turbine generators (WTGs), above-ground and below-ground electrical transmission/collection systems for collecting the power generated by each WTG, an electrical substation, interconnection switchyard, access roads, up to 3 meteorological towers, a biological monitoring observation tower, and an O&M building. The expected operation life of the OWEF is at least 30 years consistent with the BLM right of way grant.

2.2 PROJECT LOCATION

The project is located almost entirely on BLM land within 4 U.S. Geological Survey 7.5-minute quadrangle maps: Carrizo Mountain, Coyote Wells, In-Ko-Pah Gorge, and Painted Gorge (Figure 2). The northern portion of the study area is generally situated north of Interstate 8 (I-8), from the Imperial/San Diego County border of its western edge to approximately 1.5 miles northeast of the town of Ocotillo on its eastern edge. The northern area includes several distinct features, including a portion of the I-8 Island, which is undeveloped rocky and hilly terrain between the eastbound and westbound lanes of I-8, Sugarloaf Mountain, and a portion of the San Diego and Arizona Eastern railroad tracks (Figure 2). County Route (CR) S2 bisects the northern project area, and I-8 passes through the southern portion of the northern project area. The southern area is much smaller than the northern area and the majority is south of State Route (SR) 98.

2.3 PROJECT SETTING

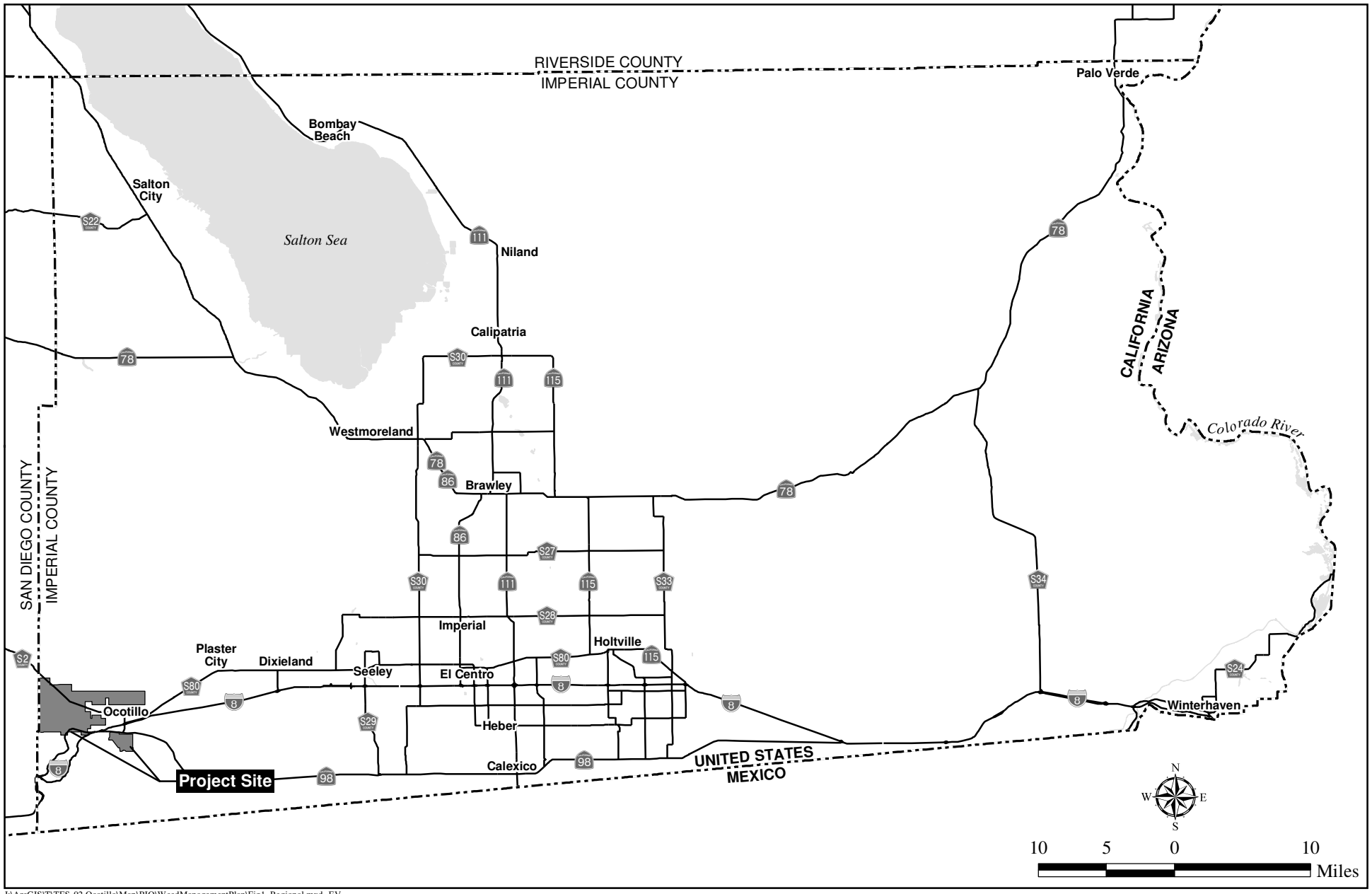
The project area is in the Yuha Desert, a sub-portion of the Colorado Desert region of the larger Sonoran Desert. The 7 million-acre Colorado Desert region extends from the border of the higher-elevation Mojave Desert in the north to the Mexican border in the south, and from the Laguna Mountains of the Peninsular Ranges in the west to the Colorado River in the east. The Yuha portion extends from the Jacumba Mountains in the west to the historic West Side Main Canal near El Centro, and from Plaster City in the north to south of Mount Signal in Mexico.

The project corridor is a designated BLM Limited Use Area in which all motorized vehicles are restricted to the use of marked, designated routes only. BLM dirt roads exist throughout the study area, and a dirt road occurs along the 500-kilovolt (kV) transmission line that traverses the middle of the study area running southwest to northeast. Illegal off-road vehicle (ORV) trails criss-cross portions of the study area, and some areas of the site are regularly used for camping, firearm activities, and ORV use. This area is also regularly patrolled by the U.S Border Patrol. Despite the above-mentioned usage, the majority of the study area is relatively undisturbed.

Vegetation within the project area consists of a variety of desert scrub habitat types. Several dry desert washes cut through this area, and run generally from west to east: Palm Canyon Wash cuts through the center of the northern part of the project area; Myer Creek Wash cuts through the southern portion of the northern part; a piece of Coyote Wash cuts through the northwest portion of the southern part; and several additional unnamed washes cut through the overall project area.

2.4 REGIONAL SETTING

Surrounding land uses include Anza-Borrego Desert State Park to the west and BLM land to the north, east, and west of the project. The Coyote Mountains Wilderness Area is located north of the study area, the Jacumba Wilderness Area is located south of the study area, and the Yuha Basin Area of Critical Environmental Concern occurs southeast of the project. The town of Ocotillo and several scattered residences outside of the town are located between the northern and southern portions of the overall project.



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Regional Location Map

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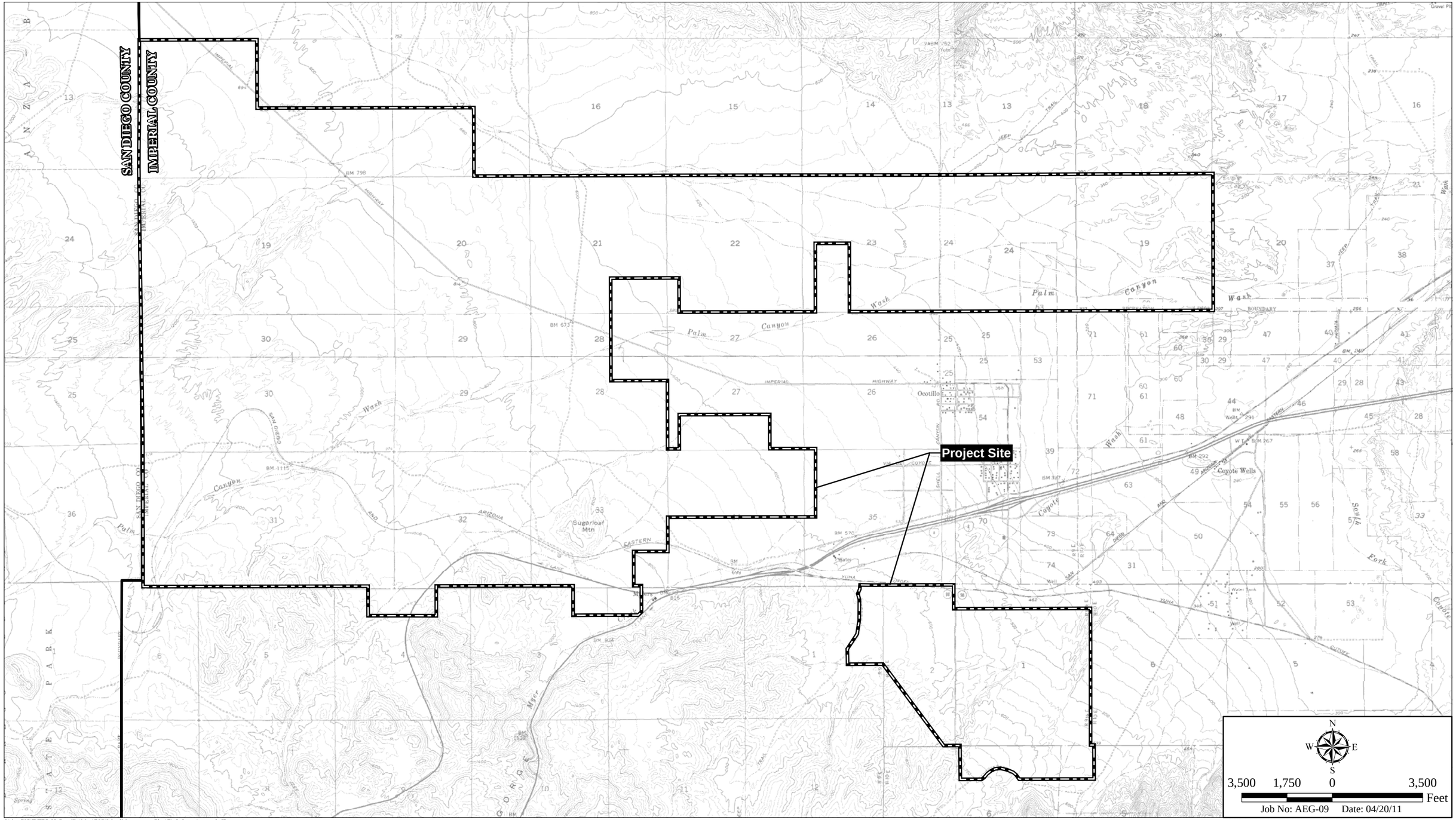
Figure 1



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Project Location Map

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Figure 2

Currently, there are 2 habitat management plans approved and being implemented by the BLM that have jurisdiction over the proposed project area. These include the California Desert Conservation Area (CDCA) Plan (BLM 1980, as amended), and the Flat-tailed Horned Lizard Rangewide Management Strategy (2003). Also, the site is adjacent to the Yuha Desert Management Area, which is located south of I-8.

3.0 PLAN GOALS

This Weed Management Plan is intended to comply with Mitigation Measure Veg-1d of the Draft EIR/EIS for the OWEF project, which specifies that the project will abide by non-native invasive weed control procedures developed in cooperation with the BLM and Imperial County during and after construction. Overall, the procedures will aim to minimize the introduction of new non-native species and limit the spread of target invasive weeds that already occur within the project work area.

Specifically, Plan goals include the following:

- Identify target invasive weeds that are known to occur within the project area and develop methods for controlling the spread of these species within the project limits.
- Present methods for reducing non-native species densities prior to the start of construction.
- Outline methods for reducing the potential introduction of new non-native species and the spread of existing invasive weed species within the project work area during construction.
- Develop a seed mix and installation protocol to increase native cover in areas that are temporarily disturbed during project construction.
- Specify methods for post-construction monitoring and maintenance of all temporary impact areas, access roads, and WTG sites to reduce potential long-term weed impacts resulting from project construction.

4.0 RESPONSIBLE PARTIES

4.1 PROJECT PROPONENT

Pattern Energy, through Ocotillo Express LLC (Proponent), will be responsible for funding and implementing this IWMP. The Proponent will be responsible for contracting with personnel qualified in the implementation, maintenance, and monitoring of non-native species, as described in this plan.

4.2 WEED CONTROL MANAGER

The Weed Control Manager (WCM) will be responsible for the day-to-day implementation of this plan beginning prior to the start of construction and continuing through the operations and maintenance period. They will submit regular reports on weed control activities to the Proponent and Restoration Specialist (RS), and will address any issues noted by the RS within 2 weeks, unless otherwise agreed with the RS and Proponent.

A WCM can be either an individual or an organization in which the person(s) actively managing the project meets the qualifications outlined below to the satisfaction of the Proponent.

- Have a B.S. or B.A. degree in ecology, botany, biology, landscape maintenance, range management, or related field.
- Have a Qualified Applicator License (QAL) and either have, or contract with, a State of California Pest Control Advisor (PCA) license for recommendations regarding appropriate pest control methodology.
- Have at least 5 years of experience in native habitat restoration in Southern California, preferably San Diego and Imperial Counties.
- Have demonstrated experience in non-native species control or in projects involving a similar skill set.
- Experience in identifying native and non-native plants from the Colorado Desert.

4.3 RESTORATION SPECIALIST

An individual will be designated by the Proponent and approved by the BLM as a RS, who shall serve as the field contact representative for the project. The Proponent will employ the RS for the life of the project and will be responsible for monitoring weed management activities beginning prior to the start of construction and continuing through the O&M period. Each successive RS will be approved by the BLM. The RS will have the authority to ensure compliance with the prevention and management measures set forth in this plan.

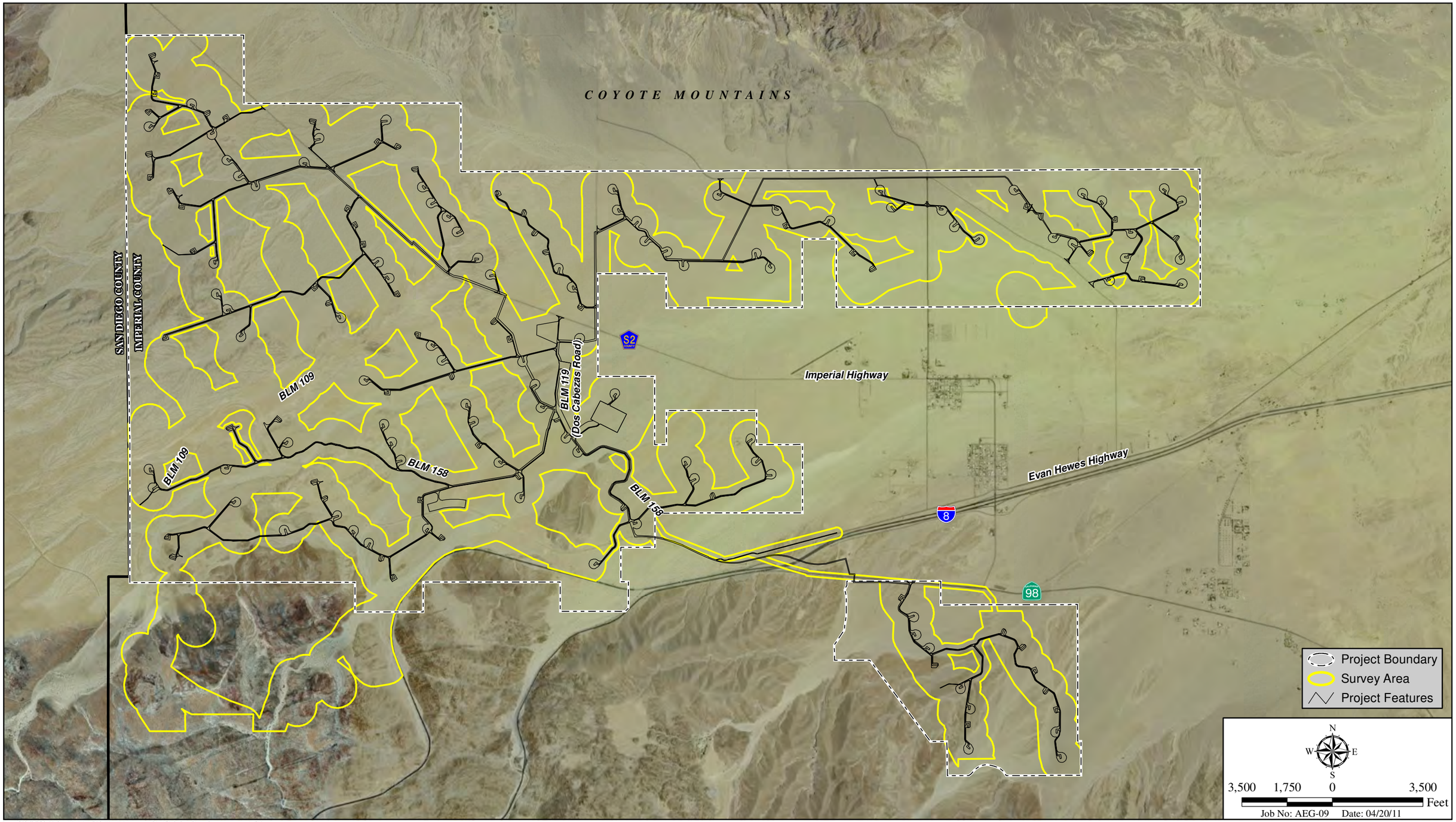
A RS will be familiar with native and non-native plants of the Colorado Desert. They will report any issues observed during monitoring to the Proponent and WCM, as appropriate, and coordinate with the WCM to ensure that any such issues are addressed in a timely manner.

5.0 PRE-CONSTRUCTION SITE STATUS

In order to determine appropriate weed management protocols, the extent of the existing non-native species populations were assessed based on previous surveys of the entire project area.

5.1 METHODS

HELIX Environmental Planning, Inc. (HELIX) biologists and subcontracted botanists inspected the entire project work area during spring and fall 2010 special status surveys (Figure 3). Survey



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Rare Plant Survey Area

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Figure 3

protocol consisted of walking meandering transects spaced at 100-foot intervals and noting all plant species observed. In addition, concentrations of Saharan mustard (*Brassica tournefortii*), the most abundant invasive weed, were mapped using Global Positioning Satellite (GPS) equipment. All other non-native species were present at substantially lower densities and their distributions were not mapped with a GPS, although general trends were noted.

5.2 RESULTS

Of the 216 plant species that were documented during the 2010 plant surveys, 14 species were non-native. These species include Saharan mustard, prickly Russian thistle (*Salsola tragus*), nettle-leaf goosefoot (*Chenopodium murale*), prickly-lettuce (*Lactuca serriola*), jointed charlock (*Raphanus raphanistrum*), London rocket (*Sisymbrium irio*), red-stem filaree (*Erodium cicutarium*), athel tamarisk (*Tamarix aphylla*), puncturevine (*Tribulus terrestris*), and five annual grasses including Mediterranean schismus (*Schismus barbatus*), slender wild oat (*Avena barbata*), red brome (*Bromus madritensis* ssp. *rubens*), six-weeks fescue (*Vulpia bromoides*), and rattail fescue (*Vulpia myuros*; Table 1). The overall project area encompasses different landscape forms, soil types, and elevation/ moisture gradients. Non-native plant densities varied by species and localized habitat, although in general non-native vegetation was concentrated in sandy substrates while rocky areas typically had limited infestation.

Table 1
NON-NATIVE PLANT SPECIES OBSERVED WITHIN THE OWEF AREA DURING 2010 SURVEYS

Species Name	Common Name	Cal-IPC Rating	Federal Weed List	State Noxious Weed List	Project Risk Level
Avena barbata	slender wild oat		No	No	Low
Brassica tournefortii	Saharan mustard	High	No	No	High
Bromus madritensis ssp. *rubens*	red brome	High	No	No	Moderate
Chenopodium murale	nettle-leaf goosefoot		No	No	Low
Erodium cicutarium	red-stem filaree	Limited	No	No	Moderate
Lactuca serriola	prickly-lettuce		No	No	Low
Raphanus raphanistrum	jointed charlock		No	No	Moderate
Salsola tragus	prickly Russian thistle	Limited	No	No	Moderate
Schismus barbatus	Mediterranean schismus		No	No	Moderate

Table 1 (cont) **NON-NATIVE PLANT SPECIES OBSERVED WITHIN THE OWEF AREA DURING 2010 SURVEYS**					
Species Name	**Common Name**	**Cal-IPC Rating**	**Federal Weed List**	**State Noxious Weed List**	**Project Risk Level**
Sisymbrium irio	London rocket		No	No	Low
Tamarix aphylla	Athel tamarisk		No	No	Low
Tribulus terrestris	puncturevine		No	C List	Low
Vulpia bromoides	six-weeks fescue		No	No	Low
Vulpia myuros	rattail fescue	Moderate	No	No	Moderate

Cal-IPC Database

Five of the 14 observed species (Saharan mustard, red brome, rattail fescue, red-stem filaree, and prickly Russian thistle) are listed in the Cal-IPC Invasive Plant Inventory Database for the Sonoran Desert region (Cal-IPC 2006; Table 1); the remaining species are not included in this inventory database. The Cal-IPC rating system is based on a scoring of 13 criteria within 3 main categories: Ecological Impacts, Invasive Potential, and Ecological Distribution. Some plants for which current information suggests that the species does not have significant impacts on wildlands, or for which information is lacking to properly evaluate the species, are categorized as Evaluated But Not Listed. The remaining plants are assigned a rating of High, Moderate, or Limited risk for invasiveness, defined as follows:

- **"High** – These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.

- **Moderate** – These species have substantial and apparent—but generally not severe—ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.

- **Limited** – These species are invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic." (Cal-IPC 2006)

Saharan mustard and red brome are the only 2 species found within the OWEF to have a CalIPC rating of High for ecological impacts. Saharan mustard is the most abundant non-native species within the proposed project area and was the only species mapped with a GPS during the plant surveys. This species occurs in high densities at widely scattered locations (Figure 4), attesting to the fact that the existing population is well established. It occurs at higher densities in sandy substrate, particularly where there is a history of human and/or natural disturbances. Because it is already well established, this species currently poses the biggest threat to native vegetation resources in the analysis area. Widely scattered stands of red brome, typically consisting of less than 5 plants were noted in at least three vegetation types including Wolf's cholla, creosote bush-white bursage, and brittle bush scrubs. Although these vegetation types cover a significant portion of the proposed OWEF site, red brome does not comprise a significant constituent in the cover of any of these vegetation types; therefore, it does not currently appear to pose a serious threat to native vegetation.

Only 1 species had a CalIPC rating of Moderate - rattail fescue. This species was very rare in the proposed OWEF site and was only observed in a small handful of locations. This species does not appear to currently pose a threat to native vegetation. Two species had a rating of Limited for ecological impacts, red-stem filaree and prickly Russian thistle. Red-stem filaree is the third most common non-native species within the study area. This species is wide spread but at low densities, which suggests that it would not dominate over native desert vegetation and therefore, poses a lower threat within the project area than other non-native speciesprickly Russian thistle occurs in very low numbers in the OWEF site, and was only observed in 1 vegetation type, cheesebush scrub (Figure 4). Currently, this species does not pose a large threat to native vegetation. Additional information on all CalIPC species with a ranking of High or Moderate is provided in Appendix A.

Federal Weed List

The Federal Weed List (7 CFR 360; California Department of Food and Agriculture 2011a) specifies which plants, or their seeds and/or other plant parts, are defined by the U.S. government as a ―noxious weed" under the Federal Noxious Weed Act of 1974 (7 USC 2802(c)). Listed species can only be transported into or through the United States under a permit from the USDA Plant Protection and Quarantine programs, and under conditions that would not involve a danger of disseminating the weeds.

None of the observed non-native species is included on the Federal Weed List.

<u>California State Noxious Weed List</u>

Puncturevine is a C List _noxious weed' species in the California State Noxious Weed List - Section 4500 of the Food and Agriculture Code (California Department of Food and Agriculture 2011b). Plants are included on this list if they are considered ―noxious" according to Section 5004 of the Food and Agricultural Code. List C plants are defined as follows: A pest of known economic or environmental detriment and, if present in California, it is usually widespread. C-rated organisms are eligible to enter the state as long as the commodities with which they are associated conform to pest cleanliness standards when found in nursery stock shipments. If found in the state, they are subject to regulations designed to retard spread or to suppress at the

discretion of the individual county agricultural commissioner. There is no state enforced action other than providing for pest cleanliness (California Department of Food and Agriculture, 2011c). Only 1 individual of puncturevine was observed within the OWEF site (Figure 4), and this plant was immediately removed and appropriately disposed of. Given that it was observed on site, it is considered likely to show up again. Additional information on this species is provided in Appendix A.

None of the other observed species are state listed as noxious weeds.

Project Risk Level

Based on a species‘ rating by Cal-IPC, ranking on the federal or state weed lists, and their observed occurrence, distribution, and abundance within the study area during the 2010 plant surveys, HELIX subjectively categorized plants as having High, Moderate, or Low risk for existing and/or future invasion within the study area, as follows:

High: Cal-IPC rating as High for ecological impacts and currently abundant within the study area.

Moderate: Cal-IPC rating as Moderate or Limited for ecological impacts, or not listed by Cal-IPC but currently moderately abundant and common within the study area.

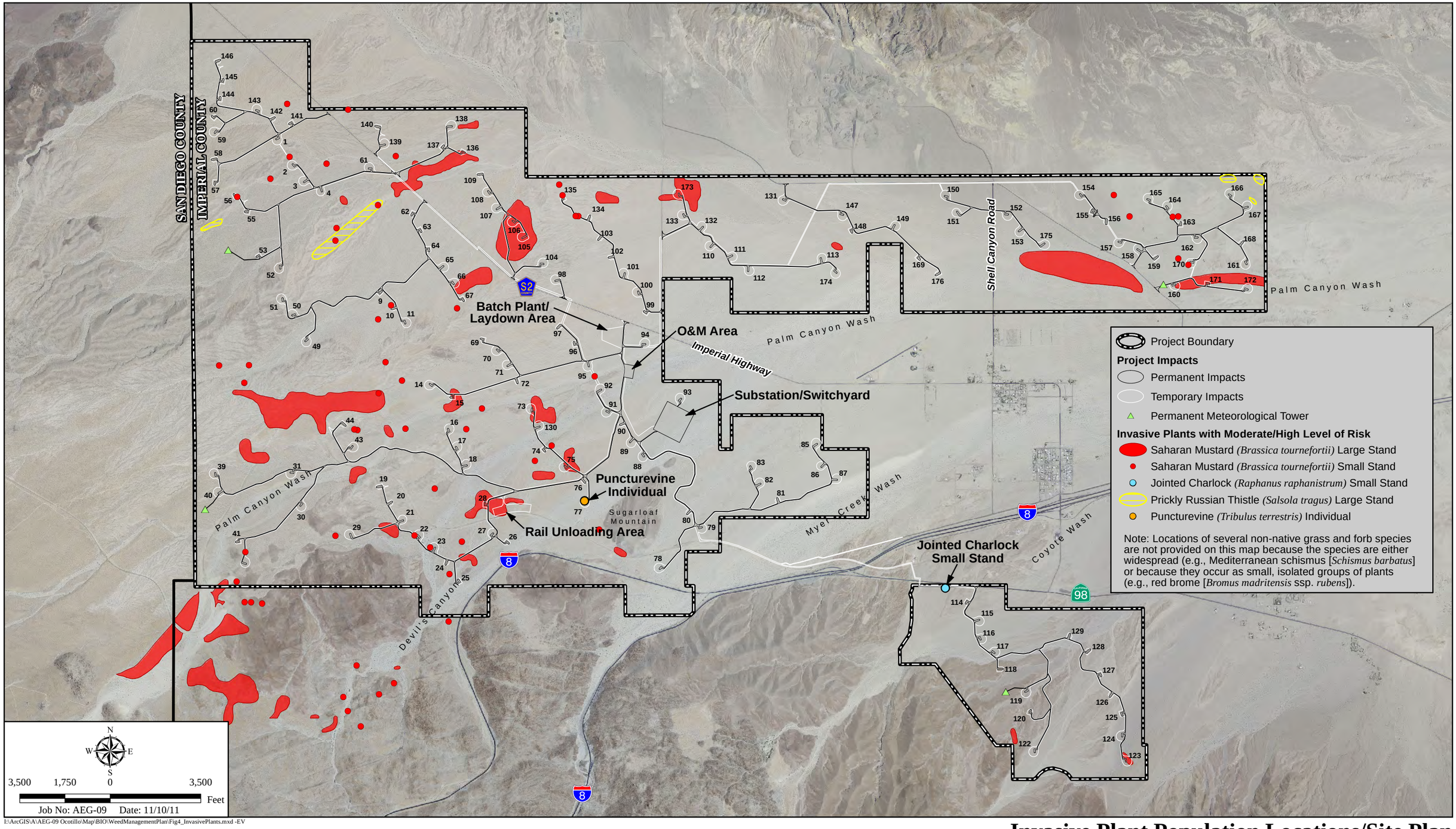
Low: Currently having limited distribution and abundance within the study area.

Based on these categories, HELIX determined that the 5 Cal-IPC listed species and 2 additional non-native species, Mediterranean schismus and jointed charlock, pose a Moderate to High level of risk for the project area (Table 1; Appendix A). Mediterranean schismus was considered to be a Moderate threat due to its widespread distribution within the study area – it appears to be invasive for the site. This grass is the second most common non-native species within the study area; it is particularly abundant in sandy substrate. The small size of this species and generally scattered concentrations limit its threat to native vegetation. Jointed charlock occurs in one location immediately adjacent to SR 98 (Figure 4), which suggests that it may have only recently been introduced to the proposed OWEF site. Given its location along a highway, it may prove invasive for the site.

The 7 remaining non-native species were observed in very low densities; some of these were also very limited in distribution.

6.0 WEED MANAGEMENT

This Weed Management Plan presents measures to lessen the potential for construction-related activities to result in the introduction of new non-native species, and the dispersal or increased abundance of existing non-native species. This Plan presents measures for all project phases: pre-, during, and post-construction.



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Invasive Plant Population Locations/Site Plan

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Figure 4

6.1 PRE-CONSTRUCTION WEED ABATEMENT

Weed control would be conducted prior to the start of construction only in the event that non-native species have started to produce fruits that would contribute to the seed bank. This would be conducted in areas where vegetation would be left in place. If vegetation is to be cleared and disposed of off-site, then weeding would not need to occur. One weed control event, targeting the 5 species with a Cal-IPC of High, Moderate, or Limited, will be conducted within 50-feet of the project features (i.e., turbine footings, project access roads, substation, staging areas, other temporary disturbance areas) prior to the start of construction. Treatment can be staggered to occur within the winter/early spring of the year that impacts would occur. At the same time, the remaining 9 species listed in Table 1 will be removed only within the project footprint (i.e., excluding the 50-foot buffer).

Weed control shall includemanual removal, and chemical control (methods are described in Section 6.4). Where manual methods are used, removed plant material will be properly disposed off-site. Only BLM approved herbicides shall be used. To this end, glyphosate and triclopyr, 2 herbicide chemicals found in several commonly used herbicides such as Roundup Pro, Aqua Neat (approved for use in wetland areas), and Tahoe 4E, have been recommended in Appendix A; however, the WCM may use other herbicides, as necessary, following BLM approval. The application of herbicides shall be in compliance with all state and federal laws and regulations under the direction of a PCA and implemented by a QAL. The WCM shall provide weekly status reports to the Proponent and RS updating them on the progress of the pre-construction weed control effort (Table 2). The RS shall monitor the site weekly to confirm that weed control is being properly executed and not damaging native vegetation (Table 2).

Table 2
WEED MANAGEMENT SUMMARY

PROJECT PHASE	WEED CONTROL MANAGER		DESIGNATED BIOLOGIST	
	Task	**Schedule**	**Task**	**Schedule**
Pre-Construction	Weed control	One time event (winter/early spring of the year when impacts occur); Provide weekly status reports until complete	Site inspection	Weekly site visits during treatment; Provide weekly monitoring memos during treatment
During Construction	Weed control	Twice per year (once in mid-winter, once in early spring *)	Regular monitoring	Once before and once after each maintenance event; Provide monitoring memos for each site visit

Table 2 (cont) **WEED MANAGEMENT SUMMARY**				
PROJECT PHASE	**WEED CONTROL MANAGER**		**DESIGNATED BIOLOGIST**	
	Task	**Schedule**	**Task**	**Schedule**
Operations and Maintenance Years 1-5	Weed control	Twice per year (once in mid-winter, once in early spring *)	Regular monitoring	Once before and once after each maintenance event; Provide monitoring memos for each site visit
Operations and Maintenance Years 6-10	Weed control	Once per year (early spring *)	Regular monitoring	Once before and once after the maintenance event; Provide monitoring memos for each site visit
Operations and Maintenance Years 11-30	Weed control	Once every other year (early spring *)	Regular monitoring	Once before and once after each maintenance event; Provide monitoring memos for each site visit

* Specific timing to be determined in coordination with the RS and will be based on the timing and quantity of rainfall levels.

6.2 WEED ABATEMENT DURING CONSTRUCTION

During and following completion of construction, the Proponent would abide by invasive weed control procedures outlined in this plan, including any modifications determined in future consultation with the BLM and Imperial County. The main issue during construction is that construction-related activities could introduce and/or spread non-native plants. This is most likely to occur when (1) materials (such as equipment, fill, or mulch) that have potential to transport seed are brought into a site, and (2) existing soils are disturbed, enabling fast-germinating, fast-growing, disturbance adapted species to proliferate.

To reduce the potential for the introduction and spread of non-native plants, the following control measures will be implemented:

- Train all field crew members on the importance of weed control;
- Minimize impacts to native vegetation;
- Use weed-free fill, gravel, etc.;
- Cover material, including soil, fill, and vegetation, securely during transport;
- Conduct work in areas of heaviest infestation either before seed is produced, or after work in less infested areas has already been completed;
- Minimize ground disturbance whenever possible;
- Stabilize disturbed soils with native seed and certified weed-free erosion control materials;

- Regularly clean all vehicles, equipment, and tools that will be used off of paved roadways and established site roads and inspect these items before they are allowed to go off-road;
- Store equipment, materials, and vehicles at specified work areas or construction yards; and
- Confine personal vehicles, sanitary facilities, and staging areas to a limited number of specified weed-free locations, not in the vicinity of weedy areas.

Construction Crew Training

The first step in managing weeds during the construction phase will be to ensure that all parties understand the potential environmental impacts posed by non-native vegetation and the weed control measures that will be implemented to limit the introduction and spread of these species. Crews will be notified that the deliberate introduction of invasive plants or animals into any portion of the work area is prohibited and will be educated in specific measures designed to reduce the potential for accidental introduction of non-native plants.

Minimizing Impacts to Native Vegetation

Impact footprints have been minimized during project design and these limits will be clearly delineated by the construction contractor. These measures will be important in minimizing the disturbance of existing native vegetation.

Minimizing Introduction of Non-native Vegetation

Accidental introduction of plants will be reduced by only using materials (e.g., straw wattles, mulch, gravel, fill, etc.) that are certified weed free and by securely covering all material with a potential to contain seed (e.g., soil, fill, vegetation) during transport. Whenever possible, work in weedy areas should be conducted either prior to seed production (generally in spring) or after work in less infested areas has been completed. Ground disturbance will be limited whenever possible to minimize creating conditions that favor non-native species. Areas that are disturbed will be protected, as needed, with erosion control materials that are certified weed free in accordance with the project‘s approved Stormwater Pollution Prevention Plan (SWPPP). A native seed mix will be applied to disturbed areas prior to the following rainy season to help facilitate native species re-establishment at the disturbed sites, in accordance with the project‘s Habitat Revegetation and Restoration Plan (HRRP; in preparation).

Vehicles and heavy equipment used for the completion, maintenance, inspection, or monitoring of ground disturbing activities will be washed and/or inspected to be free from soil and debris capable of transporting weed propagules. Any vehicle and/or heavy equipment entering the site for the first time shall be washed and/or inspected prior to entering the site. Due to the high number of vehicles during construction, vehicles that stay on established site roads will be allowed to enter and leave the site un-impeded. These on-road vehicles and equipment will be cleaned with power or high pressure equipment on a regular basis (at least once every 2 weeks) and may be subject to spot inspection by the Designated Biologist prior to entering or leaving the work site or project area. Vehicles that are used for off-road travel will be subject to weekly washing and inspection. Vehicles and/or equipment that leave the OWEF site and are used on

other sites shall be washed when they leave the OWEF site and prior to re-entering the OWEF site. Vehicles used for emergency response or fire suppression will be allowed to enter and leave the project site un-impeded, regardless of the whether they remain on-road or off-road. Cleaning efforts will concentrate on tracks, feet or tires, and on the undercarriage. Special emphasis will be applied to axles, frames, cross members, motor mounts, on and underneath steps, running boards, front bumper/brush guard assemblies, and around windshield wipers. Vehicle cabs will be swept out and refuse will be disposed of in covered waste receptacles. All tools(e.g., chainsaws, hand clippers, pruners, etc.) also will be washed at an off-site washing facility such as a car wash immediately before entering the work area. These tools will be inspected daily before use and any debris, seed, or other material shall be removed and securely disposed of to minimize distribution of plant propagules. To further safeguard against the introduction or spread of non-native plants, all vehicles, equipment, and tools will be stored on site at designated weed-free staging areas where non-native vegetation is removed on a regular basis prior to producing seed.

Documentation

To ensure that the above listed measures are implemented, a daily log will be maintained by the construction contractor(s) for all vehicle/equipment/tool washing; the log will include the date, time, location, type of equipment washed, methods used, staff present, and a signature of a responsible staff member. Logs will be available for the Proponent, WCM, DM, Biological Monitors, and resource agency personnel to review at any time and will be submitted by the construction contractor(s) to the Proponent on a monthly basis during the entire construction period.

Weed Control

Weed control shall be conducted by the WCM twice per year within the active construction area, once in mid-winter and once in early spring. The exact timing of the events will be determined in coordination with the RS and will be based on the timing and quantity of rainfall levels. During each weed control event, all 14 species listed in Table 1 will be removed from within the project footprint. The 5 species with a Cal-IPC rating also will be removed from within 50 feet of permanent project features to create a buffer area free of these invasives. Additional Cal-IPC rated species can be added to this list if they are observed in the future. Lastly, buffelgrass (***Cenchrus ciliaris***) will be added to this list if it is ever observed in the future, as this species has been known to invade other desert areas (see Appendix A for more information on this species).

6.3 WEED ABATEMENT DURING OPERATIONS AND MAINTENANCE

Following the end of construction, adaptive weed control measures will be implemented during the 30-year O&M phase to help prevent the expansion of non-native species as a result of construction-related ground disturbance, control the spread of existing populations of non-native species, and identify and address threats from new non-native species as they occur. During this period, weed abatement will be conducted as follows:

Years 1-5: All 14 species listed in Table 1, as well as any new Cal-IPC species rated Limited, Moderate, or High, and buffelgrass (if observed), will be removed from all active project features (i.e., turbine sites, access roads, etc.) and all revegetation areas. Cal-IPC rated species also will continue to be removed from within 50 feet of permanent site features. During this period, weed abatement will be conducted twice per year. The exact timing of the events will be determined in coordination with the RS and will be based on the timing and quantity of rainfall levels, but will generally coincide with the peak growing season – mid-winter through early spring.

Years 6-10: Plants rated as Limited, Moderate, or High by Cal-IPC and buffelgrass will be removed once per year from active project features. Weed abatement will be discontinued within the 50-foot buffers and revegetation areas.

Years 11-30: Weed control will be conducted every other year within all active project features for plants rated as Limited, Moderate, or High by Cal-IPC, and buffelgrass.

6.3.1 Maintenance

Maintenance will be conducted for the life of the project. The goal of the maintenance effort will be to reduce the populations of the 7 target species and to eradicate any newly introduced species before they have an opportunity to spread. Particular attention will be paid to all temporarily disturbed areas designated for revegetation. To this end, all 7 species will be removed from the within 50 feet of project features twice per year, once in mid-winter, following the first few rain events of the rainy season, and once again in spring, to remove any plants that establish from later rains or species adapted to later germination. The proposed schedule will be modified each year based on the timing and amount of rainfall and other environmental conditions, with the basic mandate that target species will be killed or removed before they produce seed. Any new species observed, or any species previously categorized as Low project risk level (Table 1) that increase in abundance, will be added to the target species list. The WCM will be responsible for coordinating maintenance events with the RS and communicating any observations that may require modifications to the maintenance program.

6.3.2 Monitoring

To help locate populations of target species, identify new species introduced into the project area, and ensure that maintenance is properly executed, the RS and Biological Monitor will monitor the site. Monitoring should focus on (1) areas where target invasive species have previously been observed and/or treated; (2) revegetation areas, (3) along roadways and access routes. Prior to each monitoring event, the target species list should be reevaluated to include new species that may have been introduced to the area over time and species that may be newly ranked by Cal-IPC as invasive. Monitoring will be conducted 4 times per year: before and after each maintenance event. The exact timing of these events will be coordinated with the WCM, based on annual rainfall and other environmental conditions. During the monitoring events, the RS will drive all access roads throughout the project area, inspecting the site at regular intervals (approximately every quarter of a mile). In addition, any areas where a dense infestation of non-native species was noted will be visited. All non-native species and their relative distribution and abundance will be noted using the following rating system:

1= A few, scattered populations containing few individuals.
2= A few, scattered populations containing a large number of individuals.
3= Moderate number of populations containing few individuals.
4= Moderate number of populations containing a large number of individuals.
5= Common but few individuals at any one location.
6= Numerous, dense populations.

This rating system will be modified, as needed, based on observed species distributions and densities. Areas of dense infestation will be mapped on an aerial photo of the site and provided to the WCM. As part of the monitoring effort, the effectiveness of control methods should be evaluated and this information used to refine control priorities, methods, and goals. This information can be useful for improving weed management practices and, in turn, may increase the overall quality of habitat within the project area. A memo summarizing observations and recommendations will be provided to the Proponent and WCM following each monitoring event.

6.4 WEED MANAGEMENT TOOLS

Weed management for this project will be conducted using an Integrated Pest Management (IPM) approach, balancing cost, effectiveness, and environmental risk in selecting the best treatment(s) to use for any given target species at any given location. BLM Manual 9015 Integrated Weed Management (BLM 1992), will be used as a reference. Methods that may be implemented as part of the weed management effort include (1) prevention (including revegetation of disturbed areas), (2) manual control, and (3) chemical control. Before selecting which method(s) to implement, the WCM will take into consideration factors including, but not limited to:

- species characteristics - annual vs. perennial, ability to re-sprout, propagation strategies;
- timing – both seasonal and species-specific;
- localized environment/habitat characteristics – presence of wetlands or sensitive species; and
- the degree and extent of the infestation.

For optimum results, multiple methods will likely need to be implemented either in concert, or over time.

6.4.1 Prevention

The most important steps in controlling non-native plants are to those that prevent non-native plants from getting into a site in the first place, combined with quickly detecting any plants that do establish before they can spread. The measures outlined in Section 6.2 above are designed to help prevent the introduction and spread of non-native plants, but for maximum effectiveness these measures need to be used in conjunction with monitoring for new or expanding non-natives and properly timed maintenance events to remove these plants. Finally, revegetating areas by seeding and/or planting with native species following the completion of any ground-disturbing construction or maintenance activities, also noted in Section 6.2, will jump-start the slower process of natural plant establishment. The re-establishment of native vegetation leaves less room for non-native plants to invade, or at least to dominate, an area.

6.4.2 Manual Removal

Once non-native plants are present, manual removal methods such as hand dethatching, pulling, excavating, or cutting can be used. Dethatching involves the removal of dead plant material from the soil surface, which has the benefits of (1) removing seed that may still be attached to the dead vegetation; (2) allowing seed already present in the soil, or applied to the site, to germinate more easily, and (3) increasing the effectiveness of subsequent herbicide applications. Manual removal includes the use of hand tools such as clippers, pruners, shovels, rakes, and hoes, as well as mechanical equipment such as weed-whips. Because it is highly selective, this type of control can minimize damage to existing native vegetation; however, it is also the most time-consuming and physically challenging. Manual removal is, therefore, best suited for small areas of infestation or in areas where non-native plants occur within sensitive habitat.

6.4.3 Chemical Control

Chemical control is often the fastest, least labor intensive method of killing established populations of non-native plants; however, the use of chemical herbicides comes with some risks to the environment and the applicator. Environmental risks include herbicide drift, volatilization, persistence in the environment, groundwater contamination, and harmful effects to fauna. To help minimize both environmental and personal risk, all herbicide use must be conducted under the direction of a professional pesticide applicator with either a Qualified Applicator License or a Pesticide Applicator License in the State of California. For this project, the applicator should be familiar with all safety and environmental regulations as well as be able to identify target non-native plant species. The project WCM is responsible for meeting these requirements and for approving any trained applicators that will be handling herbicides.

There are various methods for applying chemical control, including spraying and sponging the herbicide onto foliage. Different herbicides target specific plant types (e.g., grasses) and are designed for use in various environmental conditions. During herbicide application, measures to reduce impacts to adjacent or nearby native vegetation and special status species will be implemented. These measures include, but are not limited to the following: (1) only spraying herbicide during low-wind conditions, (2) using a sponge applicator during higher wind conditions, (3) not using herbicide within 2 feet of special status plants, 4) keeping vehicles on

permanent access roads to avoid crushing of plants and/or vegetation. Standard Operating Procedures for the use of herbicides have been developed by the BLM, as described in the BLM's Programmatic Final EIS (BLM 2007c). The Standard Operating Procedures listed in the Programmatic Final EIS will be implemented for this project and include, but are not limited to, the following:

- Complete vegetation treatments seasonally before pollinator foraging plants bloom.
- Time vegetation treatments to take place when foraging pollinators are least active both seasonally and daily.
- Design vegetation treatment projects so that nectar and pollen sources for important pollinators and resources are treated in patches rather than in one single treatment.
- Minimize herbicide application rates. Use typical rather than maximum rates where there are important pollinator resources.
- Use herbicides of low toxicity to wildlife, where feasible.
- Use spot applications or low-boom broadcast operations where possible to limit the probability of contaminating non-target food and water sources, especially non-target vegetation over areas larger than the treatment area.
- Use timing restrictions (e.g., do not treat during critical wildlife breeding or staging periods) to minimize impacts to wildlife.

The application method and herbicide type ultimately chosen should effectively kill the target non-native plant while minimizing the risks of harming non-target plants. Any chemical treatment will be consistent with BLM Manual 9011 (BLM 2007a), and the BLM's Record of Decision (ROD): Vegetation Treatments Using Herbicides (BLM 2007b), as supported by the Programmatic Environmental Impact Statement (PEIS) for Vegetation Treatments Using Herbicides (BLM 2007c). Any herbicide used on this project must be approved by the BLM.
All herbicides used for this project will contain marker dyes to make the herbicide visible wherever it is applied. This dye will allow the applicator to identify (1) which plants have been treated, thereby ensuring coverage of target plants and avoiding accidental re-treatment, (2) if drift is occurring, thereby preventing damage to native vegetation, and (3) any personal contamination, thereby facilitating rapid response.

6.5 SPECIFIC WEED MANAGEMENT MEASURES

Specific prevention and/or management measures for each non-native species observed, or with significant potential to occur, is outlined in Appendix A. The potential for impacts to other species as a result of the implementation of the IWMP is also assessed in Appendix A for each of the 9 weed species analyzed. The WCM will be responsible for updating these measures should conditions change with respect to the addresses species, or should other, previously un-addressed species appear within the project area.

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Appendix A

NOXIOUS WEED SUMMARY

Appendix A
SUMMARY OF MOST NOXIOUS WEEDS WITHIN THE STUDY AREA*

Saharan Mustard (*Brassica tournefortii*)
Cal-IPC Rating: High

DESCRIPTION	CURRENT DISTRIBUTION IN THE PROJECT AREA	TREATMENT SCHEDULE	CONTROL OPTIONS			POTENTIAL IMPACTS ON NATIVE VEGETATION
			Prevention	Physical Control	Chemical Control	
Saharan mustard is an annual herb native to Mediterranean climates of North Africa, the Middle East, and southern Europe that has invaded the low elevation deserts of the southwest—southern Nevada, southern California, Arizona, New Mexico, and west Texas. It prefers sandy or gravelly soil, although it is also able to grow on alluvial fans and rocky hillsides. Unlike many invasives, this plant does not require disturbed soil to become established. This plant is a robust, fast-growing annual with a basal rosette of leaves and densely branching stems with stinging hairs (University of Nevada Cooperative Extension [UNCE] 2002). The basal rosette grows up to 3 feet in diameter. The erect stem can be 4–40 inches tall and very branched, forming a "tumbleweed" once the plant dries up and the stem breaks. Plants flower as early as December or January, immediately following the first winter rains and may set seed as early as February. The flowers are small and pale yellow. Each long fruit pod can contain up to 9,000 1 millimeter-wide seeds that have a very high germination rate. Saharan mustard forms dense stands that crowd out native annuals and shrub seedlings. It has a competitive edge with its early phenology, which allows it to establish roots and collect soil moisture before later-germinating native species can reach it. It appears that this plant may carry fire, especially when there are other low-growing invasive species (such as Mediterranean grass) present underneath.	Saharan mustard is widespread over the site, but varies in abundance. It is most abundant in sandy substrate, particularly where there is a history of human and or natural disturbances. The worst infestation of this species occurs at the western edge of the study area, adjacent to the railroad in the area mapped as upland mustard. It is also prevalent in the most of the white bursage scrub habitat, particularly adjacent to upland mustard and in Palm Canyon Wash. Small patches of Saharan mustard also occur elsewhere throughout the study area. This is the most abundant weed in the study area.	Winter: Locate areas of infestation. Mid-winter to late spring: Remove or treat all individuals prior to flowering.	Minimize the creation of new disturbed areas. Control of Saharan mustard along roadsides will help to prevent its spread to new areas. Avoid driving vehicles or walking through infested areas once this plant has gone to seed, especially following a rain event, as the mucilaginous coating on the seeds allow them to stick onto objects to be transported. Clean vehicles and equipment before entering the project site. Monitor yearly for new individuals.	Hand-hoeing seedlings or digging out small plants is an effective means of controlling this species in areas where the infestation is small and contained. It is especially effective if the invasion is new and a seed bank has not accumulated. Any physical removal should be conducted prior to the plant's producing seed. Any vegetative material should be bagged carried off-site, and disposed of in a responsible and legal manner to prevent the spread of weeds. Care should also be taken during transport of the materials to ensure they are secure (and do not, for example, fly out of the back of a truck). A site should be revisited in order to catch later-germinating plants, especially if there have been multiple rain events. Weed whipping is not recommended as the plants will simply continue to grow from the remaining portion of the plant (UNCE 2002). Plants growing in areas with lower mustard density often have more access to resources and subsequently produce a high number of seeds (Trader et al. 2006); therefore, even areas of apparently light infestation should be treated, when possible.	Saharan mustard is often the first winter annual to germinate in an area, making effective herbicide treatment possible while minimizing impacts to non-target species. According to the National Park Service (NPS), Saharan mustard can be controlled with glyphosate (1.5 lb/acre) (Mau–Crimmins et al. 2005), which kills fewer native forbs than Triclopyr and Chlorsulfuron (Sahara Mustard Consortium). Application of post-emergent herbicides should be done prior to the development of seed pods, which may still ripen following herbicide treatment (UNCE 2002). Refer to specific product labels for proper application rates and restrictions.	Saharan mustard was documented throughout the study area and was growing in close proximity to a number of other species, including several special status species (e.g., Wolf's cholla, Thurber's pilostyles, and brown turbans). Potential impacts to native plants would be avoided or minimized with the implementation of the following measures: (1) coordination with the Weed Control Manager on the timing of physical/chemical control, (2) using physical control for small patches of infestation, (3) using chemical herbicide during low wind conditions, (4) applying chemical herbicide with a sponge applicator when feasible/necessary, and (5) not spraying herbicide within 2 feet of sensitive species.

Red Brome (*Bromus madritensis* ssp. *rubens*)
Cal-IPC Rating: High

DESCRIPTION	CURRENT DISTRIBUTION IN THE PROJECT AREA	TREATMENT SCHEDULE	CONTROL OPTIONS			POTENTIAL IMPACTS ON NATIVE VEGETATION
			Prevention	Physical Control	Chemical Control	
Red brome is an annual grass native to southern Europe, northern Africa, and southwestern Asia; it is thought to have become established in California in the	Red brome is infrequent in the study area. It was noted in at least 3 vegetation types	Winter: Locate areas of infestation.	Minimize the creation of new disturbed areas. Control of this species along roadsides	Because it is an annual plant, manual removal of plants through pulling or hoeing can be effective, if done	Herbicide should only be applied prior to seed set. Glyphosate is an effective	Current impacts from this species on surrounding native vegetation are likely low given

mid 1800s and have become naturalized by the late 1800's (Brooks 2000). Its distinctive brushlike inflorescences are reddish purple at maturity. Because it is a prolific seed producer and colonizer, red brome can negatively impact habitat in several ways, including competition with native species for moisture, nutrients, and light; conversion of native plant communities to non-native grasslands; promotion of wildfires and alteration of fire regimes; and injury to native and domestic animals (Brooks 2000). This species emerges in early winter following rainfall but remains inactive until spring when rainfall and warmer temperatures stimulate growth and flowering. Plants growing in dry conditions may be less robust and have a more open panicle. It has become widespread in the Sonoran Desert (Van Devender 1997) and, although it is not typically a prolific invader in desert habitats, it can be abundant in moist microhabitats such as beneath perennial shrubs, around rocky outcrops, and along margins of roads and washes (Brooks 2000).	including Wolf's cholla, creosote bush-white bursage, and brittlebush scrubs. Although these vegetation types cover a significant portion of the site, red brome does comprise a significant constituent in the cover of any of these vegetation types. Stands of red brome typically consist of less than 5 plants and the stands are widely scattered.	Mid-winter to late spring: Remove or treat all individuals prior to flowering.	will help to prevent its spread to new areas. Avoid driving vehicles or walking through infested areas once this plant has gone to seed. Clean vehicles and equipment before entering the project site. Monitor yearly for new individuals.	before seeds mature. This is most feasible with small infestations as it is labor intensive. Any cut or pulled vegetative material containing inflorescences should be bagged, carried off-site, and disposed of in a responsible and legal manner to prevent the spread of weeds. Care should also be taken during transport of the materials to ensure they are secure (and do not, for example, fly out of the back of a truck).	herbicide for reducing populations of red brome. Refer to specific product labels for proper application rates and restrictions.	that this species occurs in widely distributed, small populations. Herbicide would be applied locally to the small stands, and physical control would also be limited.

Buffelgrass (*Cenchrus ciliare* [*Pennisetum ciliare*])
Cal-IPC Rating: None

DESCRIPTION	CURRENT DISTRIBUTION IN THE PROJECT AREA	TREATMENT SCHEDULE	CONTROL OPTIONS			POTENTIAL IMPACTS ON NATIVE VEGETATION
			Prevention	Physical Control	Chemical Control	
This large perennial bunchgrass from Africa and southern Asia was introduced in the 1940's to Arizona, Texas, and Sonora, Mexico as cattle forage and for erosion control. More recently it has spread rapidly in the Sonoran Desert, particularly in Arizona. It forms large dense colonies that exclude native vegetation and provide poor habitat for desert wildlife adapted to more open spaces. It spreads rapidly along roadsides and vacant lots, but can also be found throughout its current range in the Sonoran desert. Even during its growth period it has a low ignition threshold and provides a substantial amount of fuel that encourages hot, fast fires. This is particularly harmful in areas where fire would otherwise be rare and would not spread due to sparse native cover. Native species in these areas are not adapted to fire and are often irreparably damaged by it. Since buffelgrass can resprout and seed can survive fire while native vegetation does neither, burned areas often completely type convert from desert ecosystems into ones dominated by non-native vegetation. Both the fires themselves and the ensuing habitat conversion have huge negative impacts on native desert fauna.	Not currently observed within the project area; however, there is potential for its spread, particularly along roadsides and disturbed areas.	Spring: Locate areas of infestation. Spring/summer: Remove or treat all individuals prior to flowering.	Anyone conducting surveys for non-native vegetation within the project area must be familiar with this species so that it can be readily identified and targeted for control.	In large stands, removing flower heads can buy time until plants can be removed. Small plants can be readily pulled out by hand. Larger plants need to be dug out using a shovel or other tool. Any plant removal should be conducted such that any seed present is not further dispersed during the removal process (e.g., cut off flowering heads that contain seed prior to digging out the plant, immediately bag the inflorescence and the plant in an impermeable bag, etc.). If seed is observed underneath the plant, it can be swept up. Be sure to carefully dispose of the entire plant since seed can catch in the lower leaves. Care should also be taken during transport to ensure that collected material is secure (and does not, for example, fly out of the back of a truck).	For plants that are at least 50% green and actively growing, chemical treatment is an option. Glyphosate, an active ingredient in Round-Up™ has been successfully used to control buffelgrass (Arizona native plant society). Refer to specific product labels for proper application rates and restrictions.	No potential impacts are anticipated because this species has not been observed within the study area.

Buffalo grass grows to approximately 1.5 feet in height and 3 feet in width. The abundant flowering heads produce large numbers of wind dispersed seed, which can remain viable for several years. It is primarily a warm season grass, but below 3000 feet can grow and flower following any rain.						

Red Stem Filaree (*Erodium cicutarium*)
Cal-IPC Rating: Limited

DESCRIPTION	CURRENT DISTRIBUTION IN THE PROJECT AREA	TREATMENT SCHEDULE	CONTROL OPTIONS			POTENTIAL IMPACTS ON NATIVE VEGETATION
			Prevention	Physical Control	Chemical Control	
Red stem filaree is a non-native annual to biennial forb native to the Mediterranean region. It was likely introduced to California in the mid-1700's. This species favors well-drained clay, loam, or sandy soils, and is a rapid colonizer of disturbed sites (Howard 1992). This plant, which can grow up to 20 inches but is highly variable in size, contains hairy leaves with finely dissected, often toothed, lobes. The young leaves form a basal rosette, with older leaves growing up to 12 inches in height (Howard 1992). The plant contains one main taproot, usually about 3 inches long. The pink, 5-petaled flowers contain persistent flower styles, which are attached to the fruit at the base, are up to 2 inches long and coil at maturity. When moistened, these styles uncoil and can push the sharp-pointed seed up to 1-inch into the soil. Seeds can remain viable for many years, resulting in a potentially large seed bank (Howard 1992). Red stem filaree germinates in late fall, slows growth during the colder winter months, then rapidly grows, flowers, and produces fruits once the weather warms (Howard 1992).	Red-stem filaree is relatively widespread but occurs in low densities. It was observed in big galleta shrub steppe and four scrubs, including creosote bush-white bursage, and creosote bush-white bursage succulent, cheesebush, and brittle bush. Nowhere in the study area does this species dominant the landscape. It typically occurs in diffuse numbers. This is the 3rd most abundant weed in the study area.	Winter: Locate areas of infestation. Mid-winter to late spring: Remove or treat all individuals prior to flowering.	Minimize the creation of new disturbed areas. Clean vehicles and equipment before entering the project site. Monitor yearly for new individuals.	Hand pull or remove using hoes or other hand tools.	Glyphosate or triclopyr can be used to control this species. The latter herbicide is often more effective against woody or broad leafed species. Refer to specific product labels for proper application rates and restrictions.	Although widely distributed, this species currently has limited impacts on native vegetation due to its low numbers. If it spreads, its negative effects on native plant establishment and growth would likely increase. Measures to reduce potential impacts to native vegetation from the control of this species include the following: (1) coordination with the Weed Control Manager on the timing of physical/chemical control, (2) using physical control when feasible, (3) using chemical herbicide during low wind conditions, (4) applying chemical herbicide with a sponge applicator when feasible/necessary, and (5) not spraying herbicide within 2 feet of sensitive species.

Jointed Charlock (*Raphanus raphanistrum*)
Cal-IPC Rating: None

DESCRIPTION	CURRENT DISTRIBUTION IN THE PROJECT AREA	TREATMENT SCHEDULE	CONTROL OPTIONS			POTENTIAL IMPACTS ON NATIVE VEGETATION
			Prevention	Physical Control	Chemical Control	
Jointed charlock is an annual or biennial forb in the mustard family, native to Europe and Asia. It is now widely distributed in the U.S. in disturbed areas, particularly on loose soils. This plant grows to a height of 3 feet on hairy stems that become smooth with age. The initial, highly lobed leaves occur in a basal rosette. Older leaves are	Jointed charlock is known from one location, on the shoulder of Highway 98. Unlike the other non-natives that occur in low numbers on site, jointed charlock only occurs next to the road. This indicates it may have only recently become	Winter: Locate areas of infestation. Mid-winter to late spring: Remove or treat all individuals prior to flowering. Ideally, herbicide should be applied when plants are less than 6	Minimize the creation of new disturbed areas. Do not use this species in erosion control or other seed mixes. Clean vehicles and equipment before entering the project site. Monitor yearly for new individuals.	This plant can be pulled by hand or removed using hand tools prior to flowering.	Ideally herbicide, such as glyphosate or triclopyr, should be applied to young plants less than 6 inches tall. Refer to specific product labels for proper application rates and restrictions.	No impacts are anticipated at this time because of the limited distribution of this species. Herbicide would only be sprayed under low wind conditions, otherwise, herbicide would be applied with a sponge applicator or the plant would be

also highly lobed and hairy; the 4-petaled flowers are pale yellow; the plant has a single taproot. The long fruit pod has a distinctive ‗beak' at the tip. This plant grows during the winter and flowers during a wide window of time, from early spring to late summer.	established and its invasiveness cannot be ascertained. Therefore it is considered potentially invasive.	inches tall. After flowering has started, plants should be manually removed.				manually removed.
Prickly Russian Thistle (*Salsola tragus*) **Cal-IPC Rating: Limited**						
DESCRIPTION	**CURRENT DISTRIBUTION IN THE PROJECT AREA**	**TREATMENT SCHEDULE**	**CONTROL OPTIONS**			**POTENTIAL IMPACTS ON NATIVE VEGETATION**
			Prevention	**Physical Control**	**Chemical Control**	
Prickly Russian thistle is an invasive, bushy summer annual native to Eurasia and north Africa. It was introduced to the U.S. in the 1870's. It is frequent in agricultural areas, roadsides, and deserts; it is highly favored in disturbed sites. This species can grow to as much as 4 feet in height. Upper leaves have a sharp tip and each flower is subtended by 3 spine-tipped leaves, making this a prickly plant to handle, especially as it matures and dries. It is a prolific seed producer, with 1 plant having as many as 100,000 seeds. Prickly Russian thistle germinates and grows in several cycles, from late spring through summer, and flowers from mid-summer through early fall. When seeds mature, the entire plant breaks at ground level from its main taproot and ‗tumbles' along the ground with the wind, dispersing seed.	Prickly Russian thistle occurs in very low numbers in the study area. It was noted in one vegetation type: cheesebush scrub, but only rarely.	Late spring: Locate areas of infestation. Late spring/summer: Manual and chemical control will need to be conducted several times as new plants germinate.	Minimize the creation of new disturbed areas. Clean vehicles and equipment before entering the project site. Monitor yearly for new individuals.	Before flowering, young plants can be removed at ground level and left to die in situ. After flowering, plants should be broken off at the base of the plant, immediately bagged, and properly and legally disposed. During transport, care should be taken to prevent the dispersal of seed or any vegetative portion of the plant.	A post-emergent herbicide such as glyphosate can be effective if it is applied during the seedling stage of the life cycle. Refer to specific product labels for proper application rates and restrictions.	This species currently has limited impacts on native vegetation due to its restricted distribution. If it spreads, its negative effects on native plant establishment and growth would increase. Measures to reduce potential impacts to native vegetation from the control of this species include the following: (1) coordination with the Weed Control Manager on the timing of physical/chemical control, (2) using physical control as much as possible, (3) using chemical herbicide during low wind conditions, (4) applying chemical herbicide with a sponge applicator when feasible/necessary, and (5) not spraying herbicide within 2 feet of sensitive species.
Mediterranean Schismus (*Schismus barbatus*) **Cal-IPC Rating: None**						
DESCRIPTION	**CURRENT DISTRIBUTION IN THE PROJECT AREA**	**TREATMENT SCHEDULE**	**CONTROL OPTIONS**			**POTENTIAL IMPACTS ON NATIVE VEGETATION**
			Prevention	**Physical Control**	**Chemical Control**	
This annual grass is native to Eurasia and Africa. It was first documented as introduced to Arizona in 1926, but has since become widely established in the southwestern United States. It is particularly well adapted to sandy soils and rapidly establishes in roadsides, fields, and disturbed sites. A study conducted at Joshua Tree National Park in California found that the growth of this grass is enhanced by proximity to the common native desert shrub white	Mediterranean schismus is widespread over the site and occurs in many habitat types, including smoke tree woodland, badlands, and the following scrubs: creosote bush-white bursage, and creosote bush-white bursage succulent, cheesebush, white bursage,	Winter: Locate areas of infestation. Mid-winter to late spring: Remove or treat all individuals prior to flowering.	Minimize the creation of new disturbed areas. Clean vehicles and equipment before entering the project site. Monitor yearly for new individuals.	This species is difficult to control manually because of its small size; however, manual removal, with immediate bagging of the entire plant, is the appropriate method for plants that are already in flower.	Herbicide application results in high mortality if conducted prior to flowering (Steers and Allen, poster). Glyphosate can be used. Refer to specific product labels for proper application rates and restrictions.	This species is widespread throughout the study area and grows in close proximity to native vegetation, including several special status species (e.g., Wolf's cholla, Thurber's pilostyles, and brown turbans). This plant is small, and current impacts may be low; however,

bur-sage (*Ambrosia dumosa*) and that high schismus density may decrease the ability of bur-sage seed to become established (Rodriquez-Bouritica, 2009). Mediterranean schismus grows in small, tufted clumps, up to 11 inches tall. This plant has a shallow, fibrous root system. Germination occurs in early winter, then growth may slow until increased rainfall or warmer temperatures trigger the plant. This plant can grow rapidly from seedling to mature plant with fruits in as fast as 2 weeks.	creosote bush-brittle bush. It is most abundant in sandy substrate and uncommon elsewhere. It is the second most abundant weed in the study area.					its abundance could result in competition for water and may affect native seed germination and establishment. Potential impacts to native plants during control of this species would be avoided or minimized with the implementation of the following measures: (1) coordination with the Weed Control Manager on the timing of physical/chemical control, (2) using physical control for small patches of infestation, (3) using chemical herbicide during low wind conditions, (4) applying chemical herbicide with a sponge applicator when feasible/necessary, and (5) not spraying herbicide within 2 feet of sensitive species.
Puncture vine (*Tribulus terrestris*) **Cal-IPC Rating: None**						
DESCRIPTION	**CURRENT DISTRIBUTION IN THE PROJECT AREA**	**TREATMENT SCHEDULE**	**CONTROL OPTIONS**			**POTENTIAL IMPACTS ON NATIVE VEGETATION**
			Prevention	**Physical Control**	**Chemical Control**	
Puncturevine is typically found in disturbed places, roadsides, railways, cultivated fields, yards, waste places, and walkways. It grows best on dry sandy soils, but tolerates most soil types. It is intolerant of freezing temperatures. Once one of California's most troublesome weeds, puncturevine is currently controlled by stem weevil (*Microlarinus lypriformis*) and seed weevil (*M. lareynii*) introduced from Italy as biocontrol agents in 1961. This typically prostrate annual to perennial species grows radial stems up to 5 feet in diameter; its roots consist mainly of a deep taproot. The fruit consists of 4-5 nutlets, each of which has several sharp spines or horns, which have been known to puncture bicycle tires. This species germinates in the spring and summer. It has a prolonged flowering period, extending throughout the summer and is a prolific seed producer, making up to 5,000 seeds in a season on 1	One puncturevine plant was observed during all of the special status plant species surveys for the proposed OWEF. It was growing in a wash approximately 0.5-mile north of Interstate 8 and just west of Sugarloaf Mountain. This individual plant was collected and properly disposed of off site by the botanist that observed it in fall 2010.	Spring: Locate areas of infestation. Spring through Summer: Remove or treat all individuals prior to flowering.	Minimize the creation of new disturbed areas. Clean vehicles and equipment before entering the project site. Monitor yearly for new infestations.	Plants can be manually removed by cutting it off at the taproot. Any seeds dropped on the ground should be swept up. All cut vegetative material and seed should be bagged, carried off-site, and disposed of in a responsible and legal manner to prevent the spread of weeds. Care should also be taken during transport of the materials to ensure they are secure (and do not, for example, fly out of the back of a truck).	Glyphosate is an effective post-emergent herbicide for controlling this species (UC-IPM on line). Refer to specific product labels for proper application rates and restrictions.	No potential impacts from this species are anticipated in the near future because the only plant of this species that has been observed to date was removed. Even if more individuals are present, they are likely few in number and scattered in distribution and the removal of these plants would not likely have a negative effect on native vegetation.

plant.						
Rat-tail Fescue (*Vulpia myuros*) **Cal-IPC Rating: Moderate**						
DESCRIPTION	**CURRENT DISTRIBUTION IN THE PROJECT AREA**	**TREATMENT SCHEDULE**	**CONTROL OPTIONS**			**POTENTIAL IMPACTS ON NATIVE VEGETATION**
			Prevention	**Physical Control**	**Chemical Control**	
Foxtail fescue is a non-native annual grass native to Eurasia. Following its introduction in the early 1800's, it has become widespread from Alaska to southern Mexico and east to Nevada and Arizona (Howard, 2006). It is now a common, and often abundant, component of annual grasslands in these areas and is becoming more common further east. It can be the dominant grass on thin, dry, or sandy soils, where it often co-occurs with red brome and various species of filaree. It prefers open sites, old fields, and disturbed areas (Howard 2006). In particular, disturbance that opens bare ground favors this species. Rat-tail fescue has been used for short-term erosion control, particularly after fires (Howard 2006). This grass typically measures up to 18 inches in height it is distinguished by a 1 to 10-inch long _rattail' inflorescence consisting of a narrow panicle of many flowers with long awns (Howard 2006). These awns aid in seed dispersal. Although an annual species, rat-tail fescue may resprout within one growing season if a period of drought and plant die-back is followed by increased rainfall. It typically germinates in October, following the first few rains, grows intermittently during the cooler winter rainy season, and then increases growth as temperatures warm (Howard 2006).	Rattail fescue was scattered and very rare in the study area and was only observed in a small handful of locations.	Winter: Locate areas of infestation. Mid-winter to late spring: Remove or treat all individuals prior to flowering.	Minimize the creation of new disturbed areas. Do not use this species in erosion control or other seed mixes. Clean vehicles and equipment before entering the project site. Monitor yearly for new individuals.	Hand-pulling is an effective control measure for small populations of rat-tail fescue, if pulled prior to seed production. All cut vegetative material should be bagged, carried off-site, and disposed of in a responsible and legal manner to prevent the spread of weeds. Care should also be taken during transport of the materials to ensure they are secure (and do not, for example, fly out of the back of a truck).	Glyphosate can be used for reducing populations of rat-tail fescue. Refer to specific product labels for proper application rates and restrictions.	Few impacts to native plants from this species, or the control of this species, are anticipated due to its rarity within the study area.

* This list does not include all species that were observed on site. Excluded species were not included on CalIPC, federal, or state noxious weed lists and were considered to have no more than a low risk level for invasion within the study area. Although not observed on site, buffelgrass was included in this appendix because of its highly invasive nature in other desert areas.

Appendix B

HERBICIDES APPROVED FOR USE ON BLM LANDS

Appendix B
HERBICIDES APPROVED FOR USE ON BLM LANDS*
Updated September 30, 2010

ACTIVE INGREDIENT	STATES WITH APPROVAL BASED UPON CURRENT EIS/ROD & COURT INJUNCTIONS	TRADE NAME	MANUFACTURER	EPA REG. NUMBER	CA REG. **
Bromacil	AK, AZ, CA, CO, ID, MT, ND,	Bromacil 80DF	Alligare, LLC	81927-4	Y
Bromacil + Diuron	AK, AZ, CA, CO, ID, MT, ND,	Bromacil/Diuron 40/40	Alligare, LLC	81927-3	Y
Chlorsulfuron	AK, AZ, CA, CO, ID, MT, ND,	Alligare Chlorsulfuron	Alligare, LLC	81927-43	N
Clopyralid	AK, AZ, CA, CO, ID, MT, ND,	Spur	Albaugh, Inc.	42750-89	N
Clopyralid + 2,4-D	AK, AZ, CA, CO, ID, MT, ND,	Commando	Albaugh, Inc.	42750-92	N
2,4-D	AK, AZ, CA, CO, ID, MT, ND,	Agrisolution 2,4-D LV6	Agriliance, L.L.C.	1381-101	N
	AK, AZ, CA, CO, ID, MT, ND,	Weedone LV-6	Nufarm Americas Inc.	71368-11	Y
Dicamba	AK, AZ, CA, CO, ID, MT, ND,	Dicamba DMA	Albaugh, Inc./Agri Star	42750-40	N
	AK, AZ, CA, CO, ID, MT, ND,	Rifle	Loveland Products Inc.	34704-861	Y
Dicamba + 2,4-D	AK, AZ, CA, CO, ID, MT, ND,	Range Star	Albaugh, Inc./Agri Star	42750-55	N
NOTE: In accordance with the Record of Decision for the *Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement* (PEIS), the aerial application of this herbicide is prohibited.					

Appendix B (cont.)
HERBICIDES APPROVED FOR USE ON BLM LANDS*
Updated September 30, 2010

ACTIVE INGREDIENT	STATES WITH APPROVAL BASED UPON CURRENT EIS/ROD & COURT INJUNCTIONS	TRADE NAME	MANUFACTURER	EPA REG. NUMBER	CA REG. **
Diquat	AK, AZ, CA, CO, ID, MT, ND, NE,	Alligare Diquat	Alligare, LLC	81927-35	Y
Diuron	AK, AZ, CA, CO, ID, MT, ND,	Diuron 80DF	Agriliance, L.L.C.	9779-318	N
	AK, AZ, CA, CO, ID, MT, ND,	Direx 4L	DuPont Crop Protection	352-678	Y
Fluridone	AK, AZ, CA, CO, ID, MT, ND,	Avast!	SePRO	67690-30	Y
Glyphosate	AK, AZ, CA, CO, ID, MT, ND,	Aqua Star	Albaugh, Inc./Agri Star	42750-59	Y
	AK, AZ, CA, CO, ID, MT, ND,	Glypro	Dow AgroSciences	62719-324	Y
Glyphosate + 2,4-D	AK, AZ, CA, CO, ID, MT, ND,	Landmaster BW	Albaugh, Inc./Agri Star	42570-62	N
Hexazinone	AK, AZ, CA, CO, ID, MT, ND,	Velpar ULW	DuPont Crop Protection	352-450	N
Imazapyr	AK, AZ, CA, CO, ID, MT, ND,	Imazapyr 2SL	Alligare, LLC	81927-23	N
	AK, AZ, CA, CO, ID, MT, ND,	Polaris	Nufarm Americas Inc.	228-534	Y
Imazapyr + Diuron	AK, AZ, CA, CO, ID, MT, ND, NE,	Mojave 70 EG	Alligare, LLC	74477-9-81927	N
Imazapyr + Metsulfuron methyl	AK, AZ, CA, CO, ID, MT, ND,	Lineage Clearstand	DuPont Crop Protection	352-766	N

Appendix B (cont.)
HERBICIDES APPROVED FOR USE ON BLM LANDS*
Updated September 30, 2010

ACTIVE INGREDIENT	STATES WITH APPROVAL BASED UPON CURRENT EIS/ROD & COURT INJUNCTIONS	TRADE NAME	MANUFACTURER	EPA REG. NUMBER	CA REG. **
Imazapyr + Sulfometuron methyl + Metsulfuron methyl	AK, AZ, CA, CO, ID, MT, ND,	Lineage HWC	DuPont Crop Protection	352-765	N
NOTE: In accordance with the Record of Decision for the *Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement* (PEIS), the aerial application of these herbicides is prohibited.					
Sulfometuron methyl	AK, AZ, CA, CO, ID, MT, ND,	SFM 75	Alligare, LLC	81927-26	Y
NOTE: In accordance with the Record of Decision for the *Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement* (PEIS), the aerial application of these herbicides is prohibited.					
Sulfometuron methyl + Chlorsulfuron	AK, AZ, CA, CO, ID, MT, ND,	Landmark XP	DuPont Crop Protection	352-645	Y
NOTE: In accordance with the Record of Decision for the *Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement* (PEIS), the aerial application of this herbicide is prohibited.					
Sulfometuron methyl + Metsulfuron methyl	AK, AZ, CA, CO, ID, MT, ND,	Oust Extra	DuPont Crop Protection	352-622	N
NOTE: In accordance with the Record of Decision for the *Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States Programmatic Environmental Impact Statement* (PEIS), the aerial application of this herbicide is prohibited.					

Appendix B (cont.)

HERBICIDES APPROVED FOR USE ON BLM LANDS*

Updated September 30, 2010

ACTIVE INGREDIENT	STATES WITH APPROVAL BASED UPON CURRENT EIS/ROD & COURT INJUNCTIONS	TRADE NAME	MANUFACTURER	EPA REG. NUMBER	CA REG. **
Tebuthiuron	AZ, CA, CO, ID, MT, ND, NE,	Alligare Tebuthiuron 80 WG	Alligare, LLC	81927-37	Y
Tebuthiuron + Diuron	AZ, CA, CO, ID, MT, ND, NE,	SpraKil SK-13 Granular	SSI Maxim Co., Inc.	34913-15	Y
Triclopyr	AK, AZ, CA, CO, ID, MT, ND,	Triclopyr 4EC	Alligare, LLC	72167-53-74477	Y
Triclopyr + 2,4-D	AK, AZ, CA, CO, ID, MT, ND,	Everett	Alligare, LLC	81927-29	Y
Triclopyr + Clopyralid	AK, AZ, CA, CO, ID, MT, ND,	Prescott Herbicide	Alligare, LLC	81927-30	Y

* Refer to the complete label prior to considering the use of any herbicide formulation. Label changes can impact the intended use through, such things as, creation or elimination of Special Local Need (SLN) or 24 (c) registrations, changes in application sites, rates and timing of application, county restrictions, etc.

** Just because a herbicide has a Federal registration, and is approved under the current EIS, it may or may not be registered for use in California. This column identifies those formulations for which there is a California registration.