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**APPENDIX J (REVISED OCTOBER 2011)**  
**SPECIAL STATUS SPECIES ASSOCIATED WITH**  
**BLM'S ALTERNATIVES IN THE SIX-STATE STUDY AREA**

(NOTE: THE AREA OF STUDY INCLUDED IN THIS REVISED APPENDIX INCLUDES THE ENTIRE DEVELOPMENT ALTERNATIVE AREA DESCRIBED IN THE DEC 2010 DRAFT SOLAR PEIS, WHICH IS AN EXPANDED AREA IN COMPARISON WITH THAT EVALUATED FOR THE DRAFT SOLAR PEIS. SEVEN PROPOSED SOLAR ENERGY ZONES THAT HAVE BEEN DROPPED FROM FURTHER CONSIDERATION THROUGH THE OCTOBER 2011 SUPPLEMENT TO THE DRAFT SOLAR PEIS ARE NO LONGER CONSIDERED IN THIS APPENDIX).

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1 (i.e., G1 or G2), because these species invariably have high state ranks as  
2 well.

3  
4 The sources of species status and distribution data are presented in Table M.12-1 in  
5 Appendix M. This information includes data provided by state natural resource agencies, BLM  
6 field offices, and regionwide gap analysis programs, as well as information provided by  
7 NatureServe (2010) and the USFWS.

8  
9 The approach used to compare the potential impacts of solar energy development on  
10 special status species within the areas available for development under each BLM alternative  
11 was based on the expected distribution or known occurrence of special status species within the  
12 area that would be available for leasing under the alternative. For the no action alternative, the  
13 analysis area consisted of approximately 99 million acres (400,000 km<sup>2</sup>); for the solar energy  
14 development program alternative, it was approximately 22 million acres (87,336 km<sup>2</sup>). (Note:  
15 For the December 2010 Draft Solar PEIS, only those species that were known to occur in the  
16 SEZ regions (i.e., within 50 mi [80 km] of the SEZ centers) were discussed in Appendix J  
17 because an expanded species analysis by alternative was identified too late during the  
18 preparation of the Draft Solar PEIS to be accommodated in that version of the appendix. For this  
19 Appendix J released with the Supplement to the Draft Solar PEIS in October 2010, the entire no  
20 action and development program alternative areas from the Draft Solar PEIS were evaluated, but  
21 the decrease in the development program alternative reflected in the Supplement (from  
22 approximately 22 million to 18.6 million acres [89,031 to 75,272 km<sup>2</sup>]) is not reflected in the  
23 species counts. Nonetheless, these revised species counts provide a good approximation of the  
24 number of species potentially affected under the development program alternative.

25  
26 For the SEZ program alternative evaluated in the Draft Solar PEIS, the analysis area  
27 consisted of approximately 677,400 acres (2,741 km<sup>2</sup>). This updated version of Appendix J  
28 evaluates the species present only in the 17 SEZs being carried forward as described in the  
29 Supplement to the Draft Solar PEIS. However, this version of Appendix J does not account for  
30 the reduced area of 8 of these 17 SEZs, so the analysis area is slightly larger than the  
31 approximately 285,000 acres (1,153 km<sup>2</sup>) presented as the SEZ program alternative area in the  
32 Supplement to the Draft Solar PEIS. Nonetheless, these revised species counts provide a good  
33 approximation of the number of species potentially affected under the SEZ program alternative.

34  
35 A summary of the total number of special status species that may occur in the alternative  
36 areas analyzed is presented in Table J.1-1, based on recorded observations or the presence of  
37 potentially suitable habitat. In total, there are 1,150 special status species that could occur in at  
38 least one of the alternative areas. A total of 774 species could occur in the solar energy  
39 development program alternative area. Of these species that could occur in the solar energy  
40 development program alternative area, 356 could occur in the SEZ alternative area. There are  
41 376 species that have the potential to occur in the no action alternative area only. Table J.1-2 lists  
42 the total number of special status species that could occur in the affected area of the proposed  
43 SEZs.

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**TABLE J.1-1 Special Status Species That May Occur in the Alternative Areas Analyzed in This PEIS**

Status <sup>a</sup>	No Action Alternative Area	Solar Energy Program Alternative Area	SEZ Alternative Area <sup>b</sup>
ESA—Endangered	119	71	13
ESA—Threatened	58	35	8
ESA—Proposed	3	2	0
ESA—Candidate	28	19	6
ESA—Under Review	36	33	27
BLM—Sensitive	653	419	145
State—Listed	420	311	75
Rare	1,084	722	344
Total <sup>c</sup>	1,150	774	356

- <sup>a</sup> Species status definitions are presented in the text.
- <sup>b</sup> Species counts done for the modified SEZ alternative with seven SEZs eliminated per the Supplement to the Draft Solar PEIS.
- <sup>c</sup> The total number of species within each alternative area does not equal the sum across status categories because many species have more than one status listing.

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**J.2 SPECIES LISTED, PROPOSED FOR LISTING, CANDIDATES FOR LISTING, OR UNDER REVIEW FOR LISTING UNDER THE ENDANGERED SPECIES ACT THAT MAY OCCUR IN ALTERNATIVE AREAS**

In total, there are 244 species listed as threatened or endangered under the ESA or that are candidates, proposed, or under review for listing under the ESA that may occur within the no action alternative area, 160 such species that may occur in the solar energy development program alternative area, and 54 such species that may occur in the SEZ alternative area (Table J.1-1). A summary of these species that may occur in the affected area of each proposed SEZ is shown in Table J.2-1. Note that some species with a known or pending status under the ESA may also be BLM-designated sensitive, state-listed, or rare.

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Consultation with the USFWS under Section 7 of the ESA is required for those species currently listed under the ESA; coordination with the USFWS should be conducted for those species that are candidates, proposed, or under review for listing under the ESA. Section 7 of the ESA requires all federal agencies to consult with the USFWS to ensure that agency actions are not likely to jeopardize the continued existence of listed species or result in destructive or adverse modification of critical habitat. The consultation process (also referred to as the Section 7 process) includes the development of a biological assessment (BA), which is a

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**TABLE J.1-2 Total Number of Special Status Species That May Occur in the Affected Area of Each Proposed SEZ**

State	SEZ	Total Number of Special Status Species That May Occur in the Affected Area
Arizona	Brenda	20
Arizona	Gillespie	29
California	Imperial East	35
California	Riverside East	70
Colorado	Antonito Southeast	38
Colorado	De Tilla Gulch	33
Colorado	Fourmile East	59
Colorado	Los Mogotes East	51
Nevada	Amargosa Valley	52
Nevada	Dry Lake	62
Nevada	Dry Lake Valley North	22
Nevada	Gold Point	21
Nevada	Millers	19
New Mexico	Afton	35
Utah	Escalante Valley	18
Utah	Milford Flats South	20
Utah	Wah Wah Valley	22

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document prepared to determine whether the proposed federal action is likely to adversely affect listed species, proposed species, or designated critical habitat. As a result of the BA and the consultation process, the USFWS will form a biological opinion formally stating whether or not the federal action is likely to jeopardize the continued existence of listed or proposed species or result in the destruction of adverse modification of critical habitat. Often, at the request of the USFWS, species that are not listed but are candidates or under review for ESA listing may be included in the BA for review.

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### **J.3 BLM-DESIGNATED SENSITIVE SPECIES**

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The BLM has established a policy, as specified in BLM Manual 6840, *Special Status Species Management* (BLM 2008), whose purpose is “to provide policy and guidance for the conservation of BLM special status species and the ecosystems upon which they depend on BLM-administered lands.” Objectives of the BLM special status species policy are to (1) conserve and/or recover ESA-listed species and the ecosystems on which they depend so that ESA protections are no longer needed for these species, and (2) initiate proactive conservation measures that reduce or eliminate threats to BLM-designated sensitive species to minimize the likelihood of and need for listing of these species under the ESA.

**TABLE J.2-1 Number of Species Listed under the ESA or Species That Are Candidates, Proposed, or under Review for ESA Listing That May Occur in the Affected Area of the Proposed SEZs**

State	SEZ	Listed Threatened	Listed Endangered	Proposed for Listing	Candidate	Under Review	Total <sup>a</sup>
Arizona	Brenda	0	0	0	1	1	2
Arizona	Gillespie	0	2	0	3	1	6
California	Imperial East	0	1	0	0	0	1
California	Riverside East	1	1	0	0	0	2
Colorado	Antonito Southeast	0	1	0	1	1	3
Colorado	De Tilla Gulch	0	1	0	1	1	3
Colorado	Fourmile East	0	1	0	1	0	2
Colorado	Los Mogotes East	0	1	0	1	1	3
Nevada	Amargosa Valley	7	5	0	0	16	28
Nevada	Dry Lake	1	3	0	1	6	11
Nevada	Dry Lake Valley North	1	0	0	0	0	1
Nevada	Gold Point	0	0	0	1	0	1
Nevada	Millers	0	0	0	1	2	3
New Mexico	Afton	0	2	0	1	0	3
Utah	Escalante Valley	1	0	0	1	0	2
Utah	Milford Flats South	1	0	0	1	0	2
Utah	Wah Wah Valley	1	0	0	1	3	5

<sup>a</sup> The total number of species that are in the affected area of the SEZs is 54. The column does not sum to 54 because some species occur in the affected area of more than one SEZ.

1 BLM special status species are “(1) species listed or proposed for listing under the ESA,  
 2 and (2) species requiring special management consideration to promote their conservation and  
 3 reduce the likelihood and need for future listing under the ESA, which are designated as sensitive  
 4 by the BLM State Director(s). All federal candidate species, proposed species, and delisted  
 5 species in the 5 years following delisting will be conserved as BLM-designated sensitive  
 6 species.” Each BLM state director maintains a list of sensitive species, and impacts on these  
 7 species would have to be considered in project-specific assessments developed before approval  
 8 of any activity that would affect listed or proposed species or critical habitat. In total, there are  
 9 653 BLM-designated sensitive species that may occur within the no action alternative area;  
 10 419 such species that may occur within the solar energy development program alternative area;  
 11 and 145 such species that may occur in the SEZ alternative area (Table J.1-1). A summary of the  
 12 BLM-designated sensitive species that may occur in the affected area of each proposed SEZ is  
 13 presented in Table J.3-1.  
 14  
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**TABLE J.3-1 Total Number of BLM-Designated Sensitive Species That May Occur in the Affected Area of Each Proposed SEZ**

State	SEZ	Total Number of BLM-Designated Species That May Occur in the Affected Area <sup>a</sup>
Arizona	Brenda	11
Arizona	Gillespie	15
California	Imperial East	15
California	Riverside East	27
Colorado	Antonito Southeast	17
Colorado	De Tilla Gulch	9
Colorado	Fourmile East	13
Colorado	Los Mogotes East	18
Nevada	Amargosa Valley	25
Nevada	Dry Lake	35
Nevada	Dry Lake Valley North	21
Nevada	Gold Point	16
Nevada	Millers	16
New Mexico	Afton	17
Utah	Escalante Valley	17
Utah	Milford Flats South	18
Utah	Wah Wah Valley	21

<sup>a</sup> The total number of BLM-sensitive species that are in the affected area of the SEZs is 145. The column does not sum to 145 because some species occur in the affected area of more than one SEZ.

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1 **J.4 STATE-LISTED SPECIES**

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3 For analyses presented in this PEIS, state-listed species were defined as those species  
4 considered to be protected by individual state regulatory statutes, as follows:

- 5  
6 • Arizona: Plant species that are protected under the Arizona Native Plant Law  
7 (AZDA 2010) or wildlife that are species of special concern (WSC).  
8  
9 • California: Plant and animal species that are listed as threatened or  
10 endangered under the California Endangered Species Act (CESA).  
11  
12 • Colorado: Plant and animal species that are protected under *Colorado Revised*  
13 *Statute* (CRS) 33-2-101.  
14  
15 • Nevada: Species that are protected under NRS 501 (animals) or 527 (plants).  
16  
17 • New Mexico: Plants that are listed under the Endangered Plant Species Act  
18 (*New Mexico Statutes Annotated* [NMSA] 1978 § 75-6-1) or wildlife that are  
19 listed under the Wildlife Conservation Act (NMSA 1978 § 17-2-37)  
20  
21 • Utah: The State of Utah does not maintain a separate list of state-regulated  
22 species; however, the Utah Division of Wildlife Resources (UDWR) publishes  
23 a list of “wildlife species of concern” that conveys no regulatory status.  
24

25 In total, there are 420 state-listed species that may occur within the no action alternative  
26 area; 311 such species that may occur within the solar energy development program alternative  
27 area; and 75 such species that may occur in the SEZ alternative area (Table J.1-1). A summary of  
28 the state-listed species that may occur in the affected area of each proposed SEZ is presented in  
29 Table J.4-1. Some state-listed species may also be federally listed under the ESA or as a BLM-  
30 designated sensitive species or considered to be a rare species.  
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33 **J.5 RARE SPECIES**

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35 For analyses presented in this PEIS, rare species were defined as those species that may  
36 be locally or regionally rare but that do not possess any state or federal regulatory status. This  
37 includes species identified by state resource agencies as species of concern, USFWS species of  
38 concern, and species with a state rank of S1 or S2, where S1 refers to a species that is critically  
39 imperiled in the state (e.g., fewer than 5 populations), and S2 refers to a species that is imperiled  
40 in the state (e.g., fewer than 20 populations). The inclusion of species with high state ranks also  
41 accounted for species with high global ranks (i.e., G1 or G2), because these species invariably  
42 have high state ranks as well.  
43

44 In total, there are 1,084 rare species that may occur within the no action alternative area;  
45 722 such species that may occur within the solar energy development program alternative area;  
46 and 344 that may occur in the SEZ alternative area (Table J.1-1). A summary of the rare species

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**TABLE J.4-1 Total Number of State-Listed Species That May Occur in the Affected Area of Each Proposed SEZ**

State	SEZ	Total Number of State-Listed Species That May Occur in the Affected Area <sup>a</sup>
Arizona	Brenda	10
Arizona	Gillespie	18
California	Imperial East	7
California	Riverside East	6
Colorado	Antonito Southeast	4
Colorado	De Tilla Gulch	3
Colorado	Fourmile East	2
Colorado	Los Mogotes East	4
Nevada	Amargosa Valley	19
Nevada	Dry Lake	18
Nevada	Dry Lake Valley North	8
Nevada	Gold Point	8
Nevada	Millers	5
New Mexico	Afton	10
Utah	Escalante Valley <sup>b</sup>	0
Utah	Milford Flats South <sup>a</sup>	0
Utah	Wah Wah Valley <sup>a</sup>	0

<sup>a</sup> The total number of state-listed species that are in the affected area of the SEZs is 75. The column does not sum to 75 because some species occur in the affected area of more than one SEZ.

<sup>b</sup> The State of Utah does not maintain a separate list of state-regulated species.

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that may occur in the affected area of each proposed SEZ is presented in Table J.5-1. Many species that are considered rare are also listed or are being considered for listing under the ESA, are considered BLM-designated sensitive species, or are state-listed.

## J.6 SPECIAL STATUS SPECIES INFORMATION

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This section presents information on all special status species that may occur in the alternative areas analyzed in this PEIS. Table J.6-1 lists each of these species, their current status, a brief habitat description, and their potential to occur within the areas available for development under the three BLM alternatives. (In Table J.6-1, species are listed in this order: plants, invertebrates, fish, amphibians, reptiles, birds, and mammals). Species accounts are presented for those species that may occur in the affected area of one or more of the proposed

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**TABLE J.5-1 Total Number of Rare Species That May Occur in the Affected Area of Each Proposed SEZ**

State	SEZ	Total Number of Rare Species That May Occur in the Affected Area <sup>a</sup>
Arizona	Brenda	18
Arizona	Gillespie	22
California	Imperial East	35
California	Riverside East	69
Colorado	Antonito Southeast	33
Colorado	De Tilla Gulch	30
Colorado	Fourmile East	58
Colorado	Los Mogotes East	48
Nevada	Amargosa Valley	49
Nevada	Dry Lake	60
Nevada	Dry Lake Valley North	20
Nevada	Gold Point	19
Nevada	Millers	17
New Mexico	Afton	30
Utah	Escalante Valley	16
Utah	Milford Flats South	18
Utah	Wah Wah Valley	20

<sup>a</sup> The total number of rare species that are in the affected area of the SEZs is 344. The column does not sum to 344 because some species occur in the affected area of more than one SEZ.

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SEZs and that are (1) listed, proposed, candidate, or under review for listing under the ESA; (2) designated by the BLM as sensitive; or (3) listed or protected by the state in which the affected area is located. Species accounts for rare species that do not have at least one of these statuses are not presented. The species accounts include information on the species' life history, ecology, listing history, and threats to conservation. Species accounts are presented by taxonomic group (plants [Section J.6.1], invertebrates [Section J.6.2], fish [Section J.6.3], amphibians [Section J.6.4], reptiles [Section J.6.5], birds [Section J.6.6], and mammals [Section J.6.7]) and alphabetically, by common name, within each taxonomic group.

1 **TABLE J.6-1 Special Status Species Reviewed in the PEIS and Their Potential Occurrence in the Alternative Analysis Areas**

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants</i>						
Abrams' spurge	<i>Chamaesyce abramsiana</i>	CA-S1	Restricted to deserts of southern California. Inhabits sandy substrates within creosotebush scrub communities in the Mojave and Sonoran Deserts at elevations below 3,000 ft. <sup>c</sup>	×	×	×
Ackerman milkvetch	<i>Astragalus ackermanii</i>	NV-S2	Endemic to the Sheep and Pintwater Ranges of southern Nevada. Occurs in crevices and ledges of carbonate cliffs in the mixed shrub, sagebrush, and juniper woodland habitat communities at elevations between 4,000 and 6,200 ft.	×	×	×
Acuna cactus	<i>Echinomastus erectocentrus</i> var. <i>acunensis</i>	ESA-C; AZ-HS; AZ-S1	Endemic to Arizona and nearby Sonora, Mexico. Occurs on well-drained knolls, gravel ridges, and desert flats between major washes at elevations between 1,200 and 2,790 ft. Known to occur in the paloverde saguaro association of southwestern Arizona.	×	×	
Alamo beardtongue	<i>Penstemon alamosensis</i>	FWS-SC; NM-SC	Known from the Sacramento and San Andres Mountains in Doña Ana and Otero Counties, New Mexico, as well as the Hueco Mountains in El Paso County, Texas. Occurs on sheltered rocky areas, canyon sides, and canyon bottoms on limestone substrate. Elevations range between 4,300 and 5,300 ft.	×	×	×
Algodones Dunes sunflower	<i>Helianthus niveus</i> ssp. <i>tephrodes</i>	BLM-S	Primarily restricted to the Algodones Dunes in Imperial County, California. Inhabits desert sand dune habitats at elevations below 328 ft.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Alkali mariposa-lily	<i>Calochortus striatus</i>	BLM-S; FWS-SC; CA-S2; NV-S1	Restricted to wetlands in the western Mojave Desert. Inhabits alkaline seeps, springs, and meadows at elevations between 2,600 and 4,600 ft.	×	×	×
Alpine braya	<i>Braya humilis</i>	CO-S2	Occurs in slightly disturbed microsites that are within exposed slopes, solifluction lobes, and scree slopes that have calcareous soils of Leadville limestone or Manitou dolomite derivation. Elevation ranges between 11,400 and 12,800 ft.	×		
Altai chickweed	<i>Stellaria irrigua</i>	CO-S2	Occurs in mountain rills and scree above 8,200 ft. This species has a remarkably disjunct distribution where it is known only to occur in Colorado and Siberia.	×	×	×
Altered andesite buckwheat	<i>Eriogonum robustum</i>	BLM-S; NV-S2	Endemic to Nevada in Storey and Washoe Counties. Grows in dry, shallow, highly acidic soils on ridges, knolls, and steep slopes at elevations between 4,410 and 7,325 ft.	×		
Altered andesite popcornflower	<i>Plagiobothrys glomeratus</i>	BLM-S; NV-S2	Endemic to Nevada in Storey and Washoe Counties. Inhabits dry, shallow, acidic clay soils on ridges, knolls, and steep slopes in sagebrush, pinyon-juniper, and montane conifer zones at elevations between 4,850 and 6,650 ft.	×		
Amargosa beardtongue	<i>Penstemon fruticiformis</i> var. <i>amargosae</i>	BLM-S; CA-S2; FWS-SC	Primarily known from the Death Valley region of California and also adjacent western Nevada. Inhabits Mojave desertscrub communities at elevations between 2,600 and 4,600 ft.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Amargosa niterwort	<i>Nitrophila mohavensis</i>	ESA-E; BLM-S; CA-E; NV-P; NV-S1	Endemic to the Amargosa Valley in Inyo County, California, and Nye County, Nevada, where there are less than five occurrences near Carson Slough in the Amargosa Desert. It inhabits playas and alkaline wetlands near the Ash Meadows region. Elevation ranges between 1,390 and 2,460 ft.	×	×	×
American yellow lady's-slipper	<i>Cypripedium calceolus</i> ssp. <i>parviflorum</i>	CO-S2	Occurs in aspen groves, ponderosa, and Douglas fir forests with rich humus and decaying leaf litter. Soil substrates are sandy to loam. Prefers rocky north or east facing hillsides at elevations between 7,400 and 8,500 ft.	×	×	×
Angel trumpets	<i>Acleisanthes longiflora</i>	CA-S1	Restricted to California from a single occurrence in the Maria Mountains. Rocky, gravelly, loamy, or sandy calcareous, gypsiferous, or igneous-derived soils in deserts, grasslands, shrublands, or woodlands at elevations between 295 and 310 ft.	×	×	
Annual rock-nettle	<i>Eucnide rupestris</i>	CA-S2	Inhabits San Diego and Imperial Counties of southern California. Occurs on rock or talus slopes within Sonoran desertscrub and creosotebush scrub communities at elevations between 1,650 and 1,970 ft.	×		
Antelope Canyon goldenbush	<i>Ericameria cervina</i>	NV-S1	Known from Arizona, Nevada, and Utah. Occurs in rock crevices and talus in shadscale and Douglas-fir-bristlecone pine communities often on calcareous substrates; less commonly on ash flow tuff. Elevation ranges between 3,100 and 8,800 ft.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Aquarius milkvetch	<i>Astragalus newberryi</i> var. <i>aquarii</i>	BLM-S; AZ-S1	Endemic to Burro Creek in Mohave County, Arizona. Inhabits limey-clay soils in Sonoran desertscrub communities, primarily on BLM lands in the Clay Hills Area of Critical Environmental Concern (ACEC). Elevation ranges between 2,000 and 2,600 ft.	×	×	
Aravaipa sage	<i>Salvia amissa</i>	BLM-S; FWS-SC; AZ-S2	Range is south-central Arizona in shady canyons near streams in oak woodland or deciduous riparian woodland, at elevations between 1,500 and 5,000 ft.	×	×	
Aravaipa wood fern	<i>Thelypteris puberula</i> var. <i>sonorensis</i>	BLM-S; AZ-S2	Occurs in moist soils in shady canyon regions, riparian habitats such as riverbanks, seepage areas, and mesic meadow habitats. Elevation ranges between 2,220 and 4,500 ft.	×	×	
Arid tansy-aster	<i>Machaeranthera arida</i>	AZ-S1	Occurs in low sand dunes, alkaline flats, riverbanks, and sandy roadsides.	×	×	×
Arizona agave	<i>Agave arizonica</i>	AZ-HS	Range is central Arizona on open, rocky slopes and mesas in Sonoran desertscrub, chaparral, or juniper-grassland at elevations between 3,600 and 5,800 ft.	×	×	
Arizona cliffrose	<i>Purshia subintegra</i>	ESA-E; AZ-HS; AZ-S1	Endemic to central Arizona near Horseshoe Lake (Maricopa County), Cottonwood (Yavapai County), Burro Creek (Mohave County), and Bylas (Graham County) in rolling, rocky, limestone hills and slopes within the creosotebush-crucifixion thorn habitat. Elevation ranges between 2,100 and 4,000 ft.	×	×	
Arizona coralroot	<i>Hexalectris spicata</i>	BLM-S; NM-E; FWS-SC; NM-S2	Known from southern Arizona, New Mexico, Texas, and adjacent Mexico. Occurs in oak and pinyon-juniper woodland communities in areas of heavy leaf litter.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Arizona giant sedge	<i>Carex ultra</i>	BLM-S; AZ-S2	Occurs in shaded southeast-facing exposures of moist gravelly substrates near perennially wet springs and streams. Elevation ranges between 2,000 and 6,000 ft.	×	×	
Arizona hedgehog cactus	<i>Echinocereus triglochidiatus</i> var. <i>arizonicus</i>	ESA-E; AZ-HS; AZ-S2	Range is Pinal and Gila Counties in central Arizona. Inhabits areas with extensive rock cover, such as rugged, steep-walled canyons, boulder-pile ridges and slopes. Found among shrubby vegetation in Arizona desert grassland, and at elevations of 3,300 to 5,700 ft.	×	×	
Arizona phlox	<i>Phlox amabilis</i>	AZ-S2	Endemic to Arizona on open limestone-rocky slopes within pinyon-juniper woodlands and ponderosa pine-gambel oak communities. Elevation ranges between 3,500 and 7,800 ft.	×		
Arizona pholistoma	<i>Pholistoma auritum</i> var. <i>arizonicum</i>	CA-S1	Restricted to the Whipple Mountains in southeastern California. Inhabits creosotebush scrub and desertscrub communities at elevations between 900 and 2,700 ft.	×	×	
Arizona Sonoran rosewood	<i>Vauquelinia californica</i> ssp. <i>sonorensis</i>	BLM-S; AZ-S1	Known from the Ajo, Diablo, Mesquite, Sand Tank, and Santa Rosa Mountains in southwestern Arizona. Occurs on rocky slopes of hillsides and canyons on a variety of substrates. Associated with Sonoran Desert chaparral plant communities at elevations between 2,300 and 3,700 ft.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Arizona willow	<i>Salix arizonica</i>	CO-S1; AZ-HS; AZ-S2	Occurs in subalpine wet meadows, low-gradient stream banks, wet drainage ways, and cienegas typically within coniferous forest matrix. Sites often occur as narrow, linear strips associated with perennial water and are unshaded to partly shaded. Slopes are generally flat to moderate (< 9%) at elevations between 7,500 and 11,700 ft.	×		
Arkansas Canyon stickleaf	<i>Nuttallia densa</i>	CO-S2	Occurs in washes, naturally disturbed sites, and steep rocky slopes having pinyon-juniper, sagebrush, or mountain mahogany. Substrates are composed of granodiorite, gneiss, gravel, and scree at elevations between 5,800 and 7,200 ft.	×		
Ash Meadows blazingstar	<i>Mentzelia leucophylla</i>	ESA-T; NV-P; NV-S1	Endemic to the Ash Meadows region in Nye County, Nevada, where it is narrowly confined to spring-fed desert wetlands.	×	×	×
Ash Meadows buckwheat	<i>Eriogonum contiguum</i>	CA-S2; NV-S1	Known from the Mojave Desert of Inyo County, California, and Clark and Nye Counties, Nevada. Occurs on sandy to gravelly flats and slopes in association with creosote scrub and mesquite communities at elevations below 3,280 ft.	×	×	×
Ash Meadows gumplant	<i>Grindelia fraxinoprattensis</i>	ESA-T; NV-P; NV-S2	Endemic to the Ash Meadows region in Nye County, Nevada, where it is confined to saltgrass meadows along spring-fed desert wetlands.	×	×	×
Ash Meadows ivesia	<i>Ivesia kingii eremica</i>	ESA-T	Endemic to the Ash Meadows region in Nye County, Nevada, where it is confined to a single spring-fed wetland area with saline soils.	×	×	×

**TABLE J.6-1 (Cont.)**

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Ash Meadows sunray	<i>Enceliopsis nudicaulis corrugata</i>	ESA-T	Endemic to the Ash Meadows region in Nye County, Nevada, where it is confined to a single spring-fed wetland area with saline soils.	×	×	×
Ash-gray paintbrush	<i>Castilleja cinerea</i>	ESA-T	Endemic to the eastern end of the San Bernardino Mountains in southern California. Primarily found on pebble plains (dense clay soils, usually covered with a cobble pavement of quartzite). Also known from pine forests and dry sagebrush scrublands.	×	×	
Autumn buttercup	<i>Ranunculus aestivalis</i>	ESA-E; UT-S1	Endemic to Garfield County, Utah. Only two populations are known to occur in sedgegrass meadows associated with seeps and springs in the Sevier River Valley. Occurs at elevations near 6,500 ft.	×	×	
Autumn willow	<i>Salix serissima</i>	CO-S1	Occurs in marshes or fens associated with other Salix and Carex species. Elevation ranges between 7,800 and 9,300 ft.	×	×	×
Aztec gilia	<i>Gilia formosa</i>	NM-E; NM-S2	Restricted to San Juan County, New Mexico. Inhabits lower pinyon-juniper woodland-sagebrush rangeland or open arid Navajoan Desert between 5,800 and 6,200 ft in elevation.	×	×	
Aztec milkvetch	<i>Astragalus proximus</i>	CO-S2	Occurs in Rocky Mountain ponderosa pine woodland, Colorado Plateau pinyon-juniper woodland, intermountain-basins, semidesert shrub-steppe, and Rocky Mountain gambel oak-mixed montane shrublands at elevations between 5,400 and 7,300 ft.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Baja California ipomopsis	<i>Ipomopsis effusa</i>	CA-S1	Endemic to southern California in the southeastern Peninsular Ranges. Inhabits alluvial fan and sandy substrates within chaparral, creosotebush scrub, and Sonoran desertscrub communities at elevations below 330 ft.	×		
Baja navarretia	<i>Navarretia peninsularis</i>	BLM-S; CA-S2	Inhabits meadows and seeps in lower montane coniferous forests and pinyon-juniper woodlands at elevations between 4,900 and 7,550 ft.	×		
Baldwin Lake linanthus	<i>Linanthus killipii</i>	BLM-S; CA-S2; FWS-SC	Restricted to the region of Baldwin Lakes, San Bernardino County, California. Inhabits dry open areas with pinyon-juniper and red fir forest communities, including dry slopes, alkaline meadows, and pebble plains. Elevation ranges between 5,000 and 7,900 ft.	×		
Bare-stem larkspur	<i>Delphinium scaposum</i>	CA-S1	Restricted to the Whipple Mountains of southern California. Inhabits rocky substrates of juniper woodlands and grasslands at elevations between 890 and 3,450 ft.	×		
Barstow woolly sunflower	<i>Eriophyllum mohavense</i>	BLM-S; CA-S2; FWS-SC	Known only from the area surrounding Barstow, California. Inhabits sandy or rocky substrates associated with creosotebush scrub, chenopod scrub, and playas. Elevation ranges between 2,000 and 3,000 ft.	×	×	
Barton Flats horkelia	<i>Horkelia wilderae</i>	BLM-S; CA-S1; FWS-SC	Known from fewer than 10 occurrences in the Barton Flats area in San Bernardino County, California. Inhabits lower and upper montane coniferous forests at elevations between 5,900 and 9,800 ft.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Bartram stonecrop	<i>Graptopetalum bartramii</i>	BLM-S; AZ-SR; FWS-SC	Range is southern Arizona and Chihuahua, Mexico, at elevations of 3,650 to 6,700 ft. Inhabits cracks in rocky outcrops of canyons in shrub live oak-grassland communities along meandering arroyos.	×	×	
Bashful beardtongue	<i>Penstemon pudicus</i>	BLM-S; NV-S1	Endemic to Nevada in Nye County, at elevations between 7,500 and 9,000 ft. Grows in crevices, soil pockets, and rocky soils in volcanic outcrops, boulder piles, steep slopes, and drainage bottoms.	×		
Bear Lake buckwheat	<i>Eriogonum microthecum</i> var. <i>lacus-ursi</i>	BLM-S; CA-S1	Known from only one occurrence near Bear Lake in the San Bernardino Mountains. Inhabits Great Basin scrub communities and lower montane coniferous forests on rocky-clay outcrops. Elevation ranges between 6,550 and 6,900 ft.	×		
Bear Valley pyrrocoma	<i>Pyrrcoma uniflora</i> var. <i>gossypina</i>	BLM-S; CA-S2; FWS-SC	Known from fewer than 20 occurrences near Bear Valley, San Bernardino County, California. Inhabits moist meadows and seeps on pebble plain substrates at elevations between 5,250 and 7,500 ft.	×		
Bearded screwmoss	<i>Pseudocrossidium</i> <i>crinitum</i>	NV-S1	Known from only 12 occurrences in Nevada. Occurs on or near gypsiferous deposits and outcrops or limestone boulders, especially on east- to north-facing slopes of loose, uncompacted soil, often associated with other mosses and lichens at elevations between 1,300 and 2,300 ft.	×	×	×
Beautiful sedge	<i>Carex concinna</i>	BLM-S; CO-S1	Broadly distributed in boreal regions from Alaska to Colorado. In Colorado, the species is associated with cool, moist forests with mosses and well-drained soils at elevations between 8,000 and 10,500 ft.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Beaver Dam breadroot	<i>Pediomelum castoreum</i>	FWS-SC	Known from Arizona, California, and Nevada. Occurs in dry, sandy desert communities.	×	×	×
Big Bear Valley milkvetch	<i>Astragalus lentiginosus</i> var. <i>sierrae</i>	BLM-S; CA-S1; FWS-SC	Endemic to San Bernardino County, California, from the Big Bear Valley and Baldwin Lake region. Inhabits scrub habitats, meadows, pinyon-juniper woodlands, and montane coniferous forests on gravelly or rocky substrates. Elevation ranges between 5,900 and 8,500 ft.	×		
Big Bear Valley phlox	<i>Phlox dolichantha</i>	BLM-S; CA-S2; FWS-SC	Known from the Big Bear Valley in San Bernardino County, California. Inhabits openings in montane coniferous forests on pebble plain substrates. Elevation ranges between 5,900 and 9,800 ft.	×		
Big Bear Valley sandwort	<i>Arenaria ursina</i>	ESA-T; BLM-S; CA-S2	Located in pebble plains, which are dense clay soils, usually covered with a cobble pavement of quartzite. Occurs in sparsely vegetated openings in forests at elevations between 5,900 and 7,500 ft.	×		
Big Bear Valley woollypod	<i>Astragalus leucolobus</i>	BLM-S; CA-S2; FWS-SC	Endemic to San Bernardino County, California, from the Big Bear Valley. Occurs in open habitats, including pebble plains in yellow pine forest and sagebrush scrub at elevations between 6,600 and 7,800 ft.	×		
Bigelow onion	<i>Allium bigelovii</i>	AZ-SR; AZ-S2	Inhabits gentle slopes on open, dry rocky soil in grassland, chaparral, and Sonoran–Mohave desertscrub communities. Elevation ranges between 2,000 and 5,000 ft.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Bigelow's tansy-aster	<i>Machaeranthera bigelovii</i> var. <i>bigelovii</i>	AZ-S2	Regionally endemic, where it occurs at high elevations of the northeastern Sonoran Desert. Rangeland habitats include mountain brush, aspen, spruce-fir forest, montane grassland, and alpine meadow communities with dry granite gravel substrates. Known to occur at elevations between 7,000 and 8,528 ft.	×	×	
Birdbill day-flower	<i>Commelina dianthifolia</i>	CO-S1	Occurs in rocky soils at middle elevations in the shade of pines and junipers. Elevation ranges between 4,000 and 7,000 ft.	×		
Bitter hymenoxys	<i>Hymenoxys odorata</i>	CA-S2	Occurs in sandy substrates within riparian and Sonoran desertscrub communities. Also occurs within open flats, mesquite flats, ditches, and drainage areas and along roads and streams. Elevation ranges between 150 and 500 ft.	×	×	×
Black bog-rush	<i>Schoenus nigricans</i>	CA-S2	Endemic to California on alkaline or calcareous substrates within grasslands, marshes, springs, and swamps. Elevation ranges between 500 and 6,500 ft.	×	×	×
Black milkvetch	<i>Astragalus funereus</i>	BLM-S; FWS-SC; NV-S2	Known only from the Death Valley region of California and southern Nevada. There are only five occurrences of this species currently known. It inhabits gravelly-clay ridges and ledges on limestone or volcanic substrates at elevations between 4,200 and 6,900 ft.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Blaine fishhook cactus	<i>Sclerocactus blaneii</i>	BLM-S; NV-P; FWS-SC; NV-S1	Endemic to southeastern Nevada and southwestern Utah, where it occurs on alkaline substrates and volcanic gravels in valley bottoms. Elevation ranges between 5,100 and 5,300 ft. There are only three occurrences of this species currently known.	×	×	×
Blue giant hyssop	<i>Agastache foeniculum</i>	CO-S1	Occurs in mixed grass and tallgrass prairies, as well as moist woodlands, mesic meadows, lakeshores, and wet ditches.	×		
Blue sand lily	<i>Triteleopsis palmeri</i>	BLM-S; AZ-SR; AZ-S1	Known from few occurrences in Yuma County, Arizona. Inhabits Sonoran desertscrub communities and sand dunes at elevations between 250 and 1,660 ft. The species is not known to occur in the state of California.	×	×	
Blue-eyed grass	<i>Sisyrinchium demissum</i>	CO-S2	Occurs in moist areas, springs, stream banks, meadows, and forest seeps at elevations between 1,600 and 9,500 ft.	×	×	×
Blumer's dock	<i>Rumex orthoneurus</i>	AZ-HS; FWS-SC	Known in Arizona and New Mexico in wetlands with moist, organic soil adjacent to perennial springs or streams in canyons or meadows, and at elevations between 4,480 and 9,660 ft.	×	×	
Bodie Hills rockcress	<i>Boechera bodiensis</i>	BLM-S (CA, NV); NV-S2	Known only from higher elevations (6,725 to 11,600 ft) in a restricted geographical area within Nevada and California. Found on dry, open, rocky, slopes in Great Basin scrub, pinyon-juniper woodland, and subalpine lodgepole pine and whitebark pine forests.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Bodin milkvetch	<i>Astragalus bodinii</i>	CO-S2	Generally considered to occur in open forest clearings in association with aspen, pinyon-juniper, and ponderosa pine woodlands.	×	×	×
Booth's evening-primrose	<i>Camissonia boothii</i> ssp. <i>boothii</i>	CA-S2	Occurs in shrubby, open, or dry areas of Joshua and pinyon-juniper woodlands. Elevation ranges between 3,000 and 7,900 ft.	×	×	×
Brady pincushion cactus	<i>Pediocactus bradyi</i>	ESA-E; AZ-HS; AZ-S1	Known only in Marble Canyon in Coconino County, Arizona. Occurs in gravelly alluvium on gently sloping benches and terraces with specific soil characteristics, and with scattered low shrubs. Elevation is 3,400 to 5,200 ft.	×	×	
Brandegee's milkvetch	<i>Astragalus brandegeei</i>	BLM-S; CO-S1	Inhabits sandy or gravelly banks, flats, and stony meadows within pinyon-juniper woodlands. Substrates are usually sandstone with granite or occasional basalt. Elevation ranges between 5,400 and 8,800 ft.	×	×	×
Brandegee's wild buckwheat	<i>Eriogonum brandegeei</i>	BLM-S; CO-S1	Narrowly endemic to Chaffee and Fremont Counties in Colorado on the Dry Union and Morrison Formations. Occurs on outcrops with volcanic-derived (bentonite) soils. Often found on slopes as steep as 90%.	×	×	
Broadbeard beardtongue	<i>Penstemon angustifolius dulcis</i>	BLM-S; FWS-SC; UT-S2	Endemic to the Great Basin in Juab and Millard Counties, Utah. Occurs in saltbush, sagebrush, and juniper communities in sand dune habitats at elevations between 4,500 and 5,500 ft.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Broadfruit burreed	<i>Sparganium eurycarpum</i>	CO-S2	Occurs in mud, sand, or gravel of lowland marshes, shores, and ditches with neutral to alkaline waters. Tolerant of some desiccation.	×	×	
Broadleaf lupine	<i>Lupinus latifolius</i> ssp. <i>leucanthus</i>	AZ-S1	Occurs along streams and moist soils of streambeds, oak-cottonwood communities, mixed shrub, and ponderosa pine forest communities. Elevation ranges between 4,800 and 7,000 ft.	×	×	
Broad-leaved twayblade	<i>Listera convallarioides</i>	CO-S2	Occurs in rich humus in open woods to boggy meadows with cool, circumneutral soils at elevations below 8,500 ft.	×	×	×
Brown turbans	<i>Malperia tenuis</i>	CA-S1	Known from the Colorado Desert in southeastern California. Inhabits rocky hillsides, alluvium washes, sandy flats, and lava flats within Sonoran desertscrub and creosotebush scrub communities. Elevation ranges between 50 and 1,100 ft.	×	×	×
Bullfrog Hills sweetpea	<i>Lathyrus hitchcockianus</i>	NV-S2	Occurs in open, dry to slightly moist gravels of rocky drainage bottoms in canyons and on upper alluvial slopes, often at bases of boulders or canyon walls and climbing up through shrubs, in areas of volcanic tuff or carbonate rocks in the mixed-shrub, sagebrush, and pinyon-juniper zones.	×	×	×
Burgess' scale broom	<i>Lepidospartum burgessii</i>	BLM-S; NM-E; FWS-SC; NM-S1	Known from southern Otero County, New Mexico, and adjacent Texas. Occurs on stabilized gypsum dunes in Chihuahuan desertscrub and grassland communities. Elevations range between 3,500 and 3,700 ft.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Caespitose cat's-eye	<i>Oreocarya caespitosa</i>	BLM-S; CO-S2	Regionally endemic to Wyoming, Utah, Idaho, and Colorado. Restricted to rocky or chalky ridgetops in cushion plant communities at elevations between 6,400 and 10,000 ft.	×		
California barrel cactus	<i>Ferocactus cylindraceus</i> var. <i>cylindraceus</i>	AZ-SR	Inhabits gravelly or rocky hillsides, canyon walls, alluvial fans, and desert washes at elevations between 200 and 2,900 ft.	×	×	×
California dandelion (California taraxacum)	<i>Taraxacum californicum</i>	ESA-E; BLM-S; CA-S2	Endemic to the San Bernardino Mountains of southern California. Found along edges of moist meadows at elevations between 5,250 and 9,200 ft.	×	×	
California ditaxis	<i>Ditaxis serrata</i> var. <i>californica</i>	CA-S2	Sonoran desertscrub and creosotebush scrub communities at elevations between 100 and 3,300 ft.	×	×	×
California fan palm	<i>Washingtonia filifera</i>	AZ-SR; AZ-S1	Considered common in the state of California (not ranked); rare in Arizona where it is state-protected. Occurs in desert oases in isolated areas of the Sonoran and Mojave Deserts at elevations between 500 and 1,000 ft.	×	×	×
California jewel-flower	<i>Caulanthus californicus</i>	ESA-E; BLM-S; CA-E; CA-S1	Endemic to California. Occurs in sandy habitats of chenopod scrub, pinyon and juniper woodland, and valley and foothill grassland at elevations lower than 3,280 ft.	×		
California satintail	<i>Imperata brevifolia</i>	CA-S2	Occurs in chaparral, coastal sage scrub, creosotebush, desertscrub, mesic riparian scrub, and alkaline meadow and seep communities. Elevation ranges between 0 and 1,650 ft.	×	×	×

**TABLE J.6-1 (Cont.)**

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
California saw-grass	<i>Cladium californicum</i>	CA-S2	Occurs in alkaline, freshwater, and riparian habitats, including meadows, marshes, swamps, and seeps. Elevation ranges between 200 and 2,000 ft.	×	×	×
California snakewood	<i>Colubrina californica</i>	AZ-S2	Inhabits sandy desert washes, steep gullies, and rocky or gravelly slopes at elevations below 3,000 ft.	×	×	×
Canyonlands aletes	<i>Aletes latilobus</i>	BLM-S; CO-S1	Occurs in sandy soils in pinyon-juniper and desert shrub communities at elevations between 5,000 and 7,000 ft.	×		
Castetter's milkvetch	<i>Astragalus castetteri</i>	FWS-SC; NM-SC	Endemic to New Mexico from the Caballo and San Andres Mountains in Doña Ana and Sierra Counties. Occurs on dry, rocky slopes in montane scrub and open juniper woodland communities. Elevations range between 5,000 and 7,050 ft.	×	×	
Catalina beardtongue	<i>Penstemon discolor</i>	AZ-HS; AZ-S2	Endemic to southeastern Arizona. Inhabits bare rock in openings in pine forests, pine-oak woodlands, and oak woodlands at 4,400 to 7,200 ft in elevation.	×	×	
Cedar Breaks goldenbush	<i>Haplopappus zionis</i>	BLM-S; FWS-SC; UT-S2	Endemic to southwestern Utah in Garfield, Iron, and Kane Counties. Occurs in spruce-fir and ponderosa pine communities on limestone substrates at elevations between 8,000 and 10,000 ft. Known to occur only in Dixie National Forest, Cedar Breaks National Monument, and Bryce Canyon National Park.	×		
Chaparral sand-verbena	<i>Abronia villosa</i> var. <i>aurita</i>	BLM-S; CA-S2	Endemic to southern California. Inhabits chaparral desert sand dunes at elevations between 350 and 5,250 ft.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Charleston goldenbush	<i>Ericameria compacta</i>	NV-S2	Endemic to the Spring and Sheep Ranges in southern Nevada, where the species is known from 10 occurrences. Occurs on forested carbonate slopes and adjacent ridges and low outcrops within the subalpine and montane conifer communities at elevations between 2,850 and 11,300 ft.	×	×	×
Charleston pinewood lousewort	<i>Pedicularis semibarbata</i> var. <i>charlestonensis</i>	FWS-SC	Endemic to Nevada. A high-elevation species that is locally abundant except on steep slopes. Associated with <i>Cercocarpus ledifolius</i> , <i>Pinus monophylla</i> , <i>P. ponderosa</i> var. <i>scopulorum</i> , and <i>Populus tremuloides</i> var. <i>aurea</i> . Elevation ranges between 7,200 and 9,000 ft.	×		
Churchill Narrows buckwheat	<i>Eriogonum diatomaceum</i>	ESA-C; BLM-S; NV-P; NV-S1	Known only in the Churchill Narrows in Lyon County, Nevada. Inhabits dry, barren, and undisturbed areas on knolls, ridges, and small drainages at elevations just over 4,000 ft.	×	×	
Cienega Seca oxytheca	<i>Acanthoscyphus parishii</i> var. <i>cienegeensis</i>	BLM-S; CA-S1; FWS-SC	Endemic to San Bernardino County, California; known from approximately five locations. Inhabits pinyon-juniper woodlands and montane coniferous forests at elevations between 6,900 and 8,050 ft.	×		
Clarke phacelia	<i>Phacelia filiae</i>	BLM-S; NV-S2	Endemic to Nevada. Occurs on light-colored soils of calcareous sandstone, siltstone, tuffaceous claystone, and limestone substrates. Inhabits relatively flat areas or low knolls of valley floors, primarily above the playas and in the foothills of desert mountains within shadscale, blackbrush, and creosotebush scrub communities at elevations between 6,500 and 12,000 ft.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Clay-loving wild buckwheat	<i>Eriogonum pelinophilum</i>	ESA-E; CO-S2	Known in Delta and Montrose Counties, Colorado, in alkaline clay soils in salt desert shrub communities at 5,200 to 6,400 ft in elevation.	×		
Cliff milkvetch	<i>Astragalus cremnophylax</i> var. <i>myriorrhaphis</i>	BLM-S; AZ-SR; FWS-SC; AZ-S1	Known from the Buckskin Mountains in Coconino County, Arizona, where it grows in crevices on shallow soil on Kaibab Limestone at elevations of 6,200 to 7,900 ft.	×	×	
Clokey buckwheat	<i>Eriogonum heermannii</i> var. <i>clokeyi</i>	BLM-S; NV-S2	Endemic to Nevada in Clark and Nye Counties. Inhabits carbonate outcrops, talus, scree, and gravelly washes and banks in creosotebush-bursage, shadscale, and blackbrush communities at elevations between 4,000 and 6,000 ft.	×		
Clokey eggvetch	<i>Astragalus ophorus</i> var. <i>clokeyanus</i>	FWS-SC; NV-S2	Endemic to the Spring Mountains of southern Nevada. Occurs in dry to slightly moist open slopes, flats; or in drainages on gravelly soil derived from limestone or rhyolitic volcanics; in openings or under shrubs in ponderosa pine forests, pinyon-juniper woodlands, and burned areas. Elevations range between 5,400 and 9,000 ft.	×		
Clokey milkvetch	<i>Astragalus aequalis</i>	BLM-S; NV-S2	Endemic to the Spring Mountains of southern Nevada. Occurs on calcareous gravelly flats, hillsides, and open ridges, often sheltering under sagebrush ( <i>Artemisia</i> sp.), pine trees, or oak trees. Other common associates include Utah juniper ( <i>Juniperus osteosperma</i> ) and curl-leaf mountain mahogany ( <i>Cercocarpus ledifolius</i> var. <i>intermontanus</i> ). Elevation ranges between 6,000 and 8,400 ft.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Clokey mountain sage	<i>Salvia dorrii</i> var. <i>clokeyi</i>	BLM-S; FWS-SC	Endemic to the Spring and Sheep Ranges in southern Nevada, where the species is known from 19 occurrences. Occurs on shallow, rocky to gravelly carbonate soils of ridges, slopes, and drainages in pinyon-juniper, montane conifer, mountain mahogany, and subalpine conifer communities. Elevation ranges between 7,000 and 9,800 ft.	×		
Clokey paintbrush	<i>Castilleja martinii</i> var. <i>clokeyi</i>	FWS-SC	Restricted to California and Nevada. Inhabits pinyon-juniper woodland communities at elevations between 6,500 and 9,500 ft.	×	×	×
Clokey's cryptantha	<i>Cryptantha clokeyi</i>	BLM-S; CA-S1	Restricted to a few locations near Barstow, California. Occurs on Mojave desertscrub on sandy or gravelly soils at elevations between 2,625 and 2,950 ft.	×	×	
Clover's fishhook cactus	<i>Sclerocactus cloveriae</i> ssp. <i>brackii</i>	NM-E; NM-S1	Restricted to areas in the San Juan River valley, San Juan County, New Mexico. Inhabits sandy clay strata in sparse shadscale scrub at elevations between 5,000 and 6,400 ft.	×	×	
Clustered barrel cactus	<i>Echinocactus polycephalus</i> var. <i>polycephalus</i>	AZ-SR; AZ-S2	Occurs in the driest parts of the Sonoran and Mohave Deserts in western Arizona on rocky and gravelly slopes. Often found with creosotebush scrub or the periphery of pinyon-juniper woodlands. Elevation ranges between 230 and 1,120 ft.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Coachella Valley milkvetch	<i>Astragalus lentiginosus</i> var. <i>cochellae</i>	ESA-E; BLM-S; CA-S2	Endemic to Riverside County, California, where it is primarily known from the Coachella Valley. A disjunct population is also known from the Chuckwalla Valley. Occupies sandy areas in washes and sometimes on dunes in creosotebush scrub or in blown sand areas around valley margins. Elevation ranges between 160 and 2,130 ft.	×	×	×
Cochise pincushion cactus	<i>Coryphantha robbinsorum</i>	ESA-T; AZ-HS; AZ-S1	Rolling limestone slopes in transition zone between Chihuahuan desertscrub and semidesert grassland at elevations of 4,200 to 4,650 ft in Cochise County, Arizona. Also found in northern Sonora, Mexico.	×	×	
Colorado desert-parsley	<i>Lomatium concinnum</i>	BLM-S; CO-S2	Endemic to Delta, Montrose, and Ouray Counties in Colorado. Occurs in shrub communities dominated by sagebrush, shadscale, greasewood, or scrub oak at elevations between 5,500 and 7,000 ft.	×		
Colorado hookless cactus	<i>Sclerocactus glaucus</i>	ESA-T	Endemic to western Colorado in Delta, Garfield, Mesa, and Montrose Counties. Occurs on alluvial benches along the Colorado and Gunnison Rivers and their tributaries in saltbush or sagebrush flats, or on pinyon-juniper woodlands at elevations between 3,900 and 6,600 ft.	×		
Colorado larkspur	<i>Delphinium ramosum</i> var. <i>alpestre</i>	CO-S2; NM-S2	Inhabits meadows, aspen woodlands, and Artemisia scrub communities at elevations between 6,900 and 10,500 ft.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Colorado tansy-aster	<i>Machaeranthera coloradoensis</i>	CO-S2	Restricted to the Rocky Mountains of south-central Wyoming and western Colorado. Occurs on gravelly substrates situated in mountain parks, slopes, and rock outcrops, reaching dry tundra. Elevation ranges between 8,500 and 12,500 ft.	×	×	
Colorado wild buckwheat	<i>Eriogonum coloradense</i>	BLM-S; CO-S2	Narrowly endemic to the mountains of central Colorado. Occurs on alpine talus slopes on gravelly or sandy soils at elevations between 8,500 and 12,500 ft.	×		
Compact cat's-eye	<i>Cryptantha compacta</i>	BLM-S; FWS-SC; NV-S1; UT-S2	Known from southwestern Millard County and northwestern Beaver County, Utah, and eastern Nevada. Occurs in salt desert shrub and mixed shrub communities at elevations between 5,000 and 8,400 ft.	×	×	×
Coulter's goldfields	<i>Lasthenia glabrata</i> ssp. <i>coulteri</i>	BLM-S; CA-S2	Endemic to California from salt marshes, swamps, playas, alkaline sinks, and vernal pools at elevations below 4,000 ft.	×	×	
Coves' cassia	<i>Senna covesii</i>	CA-S2	Inhabits Sonoran Desert dry washes and slopes with sandy substrates within desertscrub and creosotebush scrub communities. Elevation ranges between 1,000 and 3,500 ft.	×	×	×
Crandall's rockcress	<i>Arabis crandallii</i>	BLM-S; CO-S2	Endemic to west-central Colorado in the Upper Gunnison Basin. Inhabits rocky or gravelly areas, including cliffs, talus slopes, and ridges on granite or limestone substrate at elevations between 6,500 and 10,500 ft.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Crandall's rockcress	<i>Boechera crandallii</i>	BLM-S; CO-S2	Regionally endemic to southwest Colorado and southwest Wyoming. Inhabits rocky or gravelly areas of cliffs, talus slopes, ridges, and ledges within cold desert, grassland, sagebrush, sagebrush-grassland, Utah juniper/mountain mahogany, pinyon-juniper woodland, and ponderosa pine forest communities.	×		
Creamy blazing star	<i>Mentzelia tridentata</i>	BLM-S; CA-S2	Inhabits Mojave Desert creosotebush scrub communities on rocky and sandy substrates at elevations below 3,900 ft.	×	×	×
Creeping milkvetch	<i>Astragalus troglodytus</i>	AZ-S2	Endemic to Coconino and Yavapai Counties in Arizona. Occurs in ponderosa pine forests, pinyon-juniper woodlands, chaparral communities, and grasslands. Elevation ranges between 4,260 and 8,100 ft.	×		
Currant milkvetch	<i>Astragalus uncialis</i>	BLM-S; FWS-SC; NV-S1; UT-S2	Regionally endemic to the Great Basin in Millard County, Utah, and Nye County, Nevada. Occurs in shadscale and bursage communities on alkaline limestone substrates at elevations between 4,500 and 6,000 ft.	×		
Cushenbury buckwheat	<i>Eriogonum ovalifolium</i> var. <i>vineum</i>	ESA-E; BLM-S; CA-S1	Restricted to a carbonate belt in the northeastern San Bernardino Mountains, San Bernardino County, California. Inhabits desert slopes, primarily in open areas on substrates derived from limestone or dolomite. Soils are typically powdery-fine, with little accumulation of organic matter and with numerous interspersed rocks. Elevation ranges between 4,600 and 7,875 ft.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Cushenbury milkvetch	<i>Astragalus albens</i>	ESA-E; BLM-S; CA-S1	A limestone endemic in San Bernardino County, California, primarily found on soils derived directly from decomposing limestone bedrock. Occurs on open, very rocky slopes at elevations between 3,300 and 6,500 ft. Inhabits Joshua tree woodland, Mojavean desertscrub, and pinyon and juniper woodland.	×		
Cushenbury oxytheca	<i>Acanthoscyphus parishii</i> var. <i>goodmaniana</i>	ESA-E; BLM-S; CA-S1	Restricted to a carbonate belt in the northeastern San Bernardino Mountains, San Bernardino County, California, and known from fewer than 20 occurrences. Inhabits pinyon-juniper woodlands on talus slopes at elevations between 3,900 and 7,875 ft.	×		
Cushion bladderpod	<i>Physaria pulvinata</i>	BLM-S; CO-S1	Endemic to Colorado and confined to shale outcrops. Known in San Miguel and Dolores Counties.	×		
Dainty moonwort	<i>Botrychium crenulatum</i>	BLM-S; CA-S2; NV-S1	Widely distributed throughout western North America in high-elevation montane habitats (between 4,150 and 11,200 ft). Aquatic/wetland-dependent, occurring in wet, marshy, and riparian areas, including wet meadows, edges of marshes, saturated soils of seeps, bottoms and stabilized margins of small streams, and wet roadside swales and ditches. Sites tend to be partly to heavily shaded and usually have a dense, diverse cover of forbs and graminoids. Dominant plant species may include spruce, alders, and dogwood.	×		
Dalhousie spleenwort	<i>Asplenium dalhousiae</i>	BLM-S; AZ-S1	Found in scattered locations in the Mule, Huachuca, and Baboquivari Mountains in Arizona on shady, rocky ravines in Madrean oak woodland. Elevation ranges from 4,000 to 6,000 ft.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Darwin rockcress	<i>Arabis pulchra</i> var. <i>munciensis</i>	CA-S1	Occurs on carbonate substrates along canyons, slopes, and washes. Elevation ranges between 3,600 and 6,800 ft.	×	×	×
Davidson sage	<i>Salvia davidsonii</i>	AZ-S2	Rocky substrates in canyons, and in moist soils on wooded slopes, often on bedrock. Elevation ranges between 1,600 and 9,500 ft.	×	×	×
Death Valley beardtongue	<i>Penstemon fruticiformis</i> ssp. <i>amargosae</i>	BLM-S; FWS-SC; NV-S2	Known only from the Death Valley region of California and southern Nevada. It inhabits Mojave desertscrub communities at elevations between 2,800 ft and 4,600 ft.	×	×	×
Death Valley mormon tea	<i>Ephedra funerea</i>	AZ-S1	Occurs on sandy, dry soils within upper, shrub-covered desert slopes and valley floors, fans, washes, rocky scrub areas, and sometimes on stabilized dunes in association with creosotebush scrub communities at elevations between 1,150 and 5,580 ft.	×	×	
DeBeque milkvetch	<i>Astragalus debequaeus</i>	BLM-S; CO-S2	Endemic to Colorado in Garfield and Mesa Counties. Found in pinyon-juniper woodlands and desert shrub on clay soils with sandstone.	×		
DeBeque phacelia	<i>Phacelia submutica</i>	ESA-C; BLM-S; CO-S2	Endemic to Colorado in Garfield and Mesa Counties. Inhabits barren, cracked clay soils, often on steep exposures.	×		
Debris milkvetch	<i>Astragalus detritalis</i>	BLM-S; CO-S2	Endemic to the Uinta Basin in Utah and Colorado. Found in rocky soils in pinyon-juniper and mixed desert shrub communities at elevations of 5,400 to 7,200 ft.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Degener's beardtongue	<i>Penstemon degeneri</i>	BLM-S; CO-S2	Endemic to south-central Colorado along the Arkansas River corridor. Found in open pinyon-juniper woodlands and montane grasslands with rocky soils at elevations between 6,000 and 7,000 ft. Grows in cracks of large rock slabs around the canyon rims.	×	×	
Desert ageratina	<i>Ageratina herbacea</i>	CA-S2	Known from the eastern Mojave Desert Mountains on rocky substrates along streams, slopes, ridges, and washes within pine, pine-oak, and juniper, pinyon-juniper woodlands. Elevation ranges between 5,000 and 7,200 ft.	×	×	
Desert bedstraw	<i>Galium proliferum</i>	CA-S2	Endemic to southern California on carbonate (limestone) substrates of rocky banks and ledges. Occurs within Joshua tree woodlands, creosotebush scrub, Mojave desertscrub, and pinyon-juniper woodland habitats at elevations between 3,900 and 5,150 ft.	×	×	×
Desert cymopterus	<i>Cymopterus deserticola</i>	BLM-S	Restricted to western Mojave Desert habitats with deep, loose, well-drained, fine to coarse sandy soils of alluvial fan basins. Often occurs in low sand dunes and on sandy slopes. Elevation ranges between 2,060 and 3,060 ft.	×	×	
Desert germander	<i>Teucrium glandulosum</i>	CA-S1	Restricted to the Whipple Mountains of the Sonoran Desert in southern California. Occurs on rocky slopes and canyons within creosotebush scrub and Sonoran desertscrub communities. Elevation ranges between 1,300 and 2,600 ft.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Desert night-blooming cereus	<i>Peniocereus greggii</i> var. <i>greggii</i>	BLM-S; NM-E; FWS-SC; NM-S1	Known from southern New Mexico and western Texas. Occurs in sandy to silty gravelly soils in desert grassland communities. Also found in gravelly flats and washes.	×	×	×
Desert pincushion	<i>Coryphantha chlorantha</i>	CA-S1	Occurs on gravelly bajadas, limestone or dolomite rocky slopes associated with desertscrub communities within pinyon-juniper woodlands and Joshua tree woodlands. Elevation ranges between 148 and 7,875 ft.	×	×	×
Desert spike-moss	<i>Selaginella eremophila</i>	CA-S2	Gravelly or rocky slopes within creosotebush scrub and Sonoran desertscrub communities. Elevation ranges between 650 and 2,950 ft.	×	×	×
Desert wild-buckwheat	<i>Eriogonum deserticola</i>	AZ-S1	Locally common in southeastern California and western Arizona on deep, moving sand dunes and sandy flats within desertscrub communities at elevations below 650 ft.	×		
Diamond Butte milkvetch	<i>Astragalus toanus</i> var. <i>scidulus</i>	BLM-S; AZ-S1	Known only at the bases of Diamond Butte and Twin Buttes, with mixed desertscrub and scattered juniper and pinyon, in Mohave County, Arizona. Elevation range is 4,900 to 5,400 ft.	×	×	
Dolores River skeletonplant	<i>Lygodesmia doloresensis</i>	BLM-S; CO-S1	Known in Mesa and San Miguel Counties, Colorado, and Grand County, Utah. Occurs in juniper-desert shrub or juniper-grassland communities at elevations of 4,400 to 4,700 ft.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Duchesne buckwheat	<i>Eriogonum viridulum</i>	BLM-S; CO-S1	Occurs in Colorado and Utah in sandy or silty flats or clay slopes and hills in saltbush or sagebrush communities and pinyon-juniper woodlands at 4,600 to 6,600 ft in elevation.	×		
Duchesne milkvetch	<i>Astragalus duchesnensis</i>	BLM-S; CO-S1	Endemic to the Uinta Basin in Utah and Colorado. Inhabits sandy and gravelly pediments such as sandy mesas, or sandstone or shale outcrops of salt desert shrub and pinyon-juniper communities.	×		
Dudley Bluffs bladderpod	<i>Lesquerella congesta</i>	ESA-T; CO-S1	Endemic to the Piceance Basin in Rio Blanco County in Colorado. Occurs on barren white shale outcrops that have been exposed from downcutting of streams.	×		
Duncan's corycactus	<i>Escobaria dasyacantha</i> var. <i>duncanii</i>	NM-E; NM-S1	Inhabits limestone hills in desert at elevations between 3,300 and 5,400 ft.	×	×	
Dune sunflower	<i>Helianthus deserticola</i>	NV-S2	Known from Arizona, Nevada, and Utah. Dependent on sand dune communities where it occurs on dry, open, deep, loose sandy soils of aeolian deposits, vegetated dunes, and dune skirt areas, on flats and gentle slopes of all aspects, generally in alkaline areas. Elevation ranges between 1,325 and 4,900 ft.	×	×	×
Dwarf bear-poppy	<i>Arctomecon humilis</i>	ESA-E; UT-S1	Endemic to Washington County, Utah. Inhabits warm, open desert shrub communities on gypsiferous clay soils in the Moenkopi Formation. Occurs at elevations between 2,600 and 4,500 ft.	×	×	
Dwarf germander	<i>Teucrium cubense</i> ssp. <i>depressum</i>	CA-S2	Desert dunes, playas, riparian, creosotebush scrub, and desertscrub communities. Elevation ranges between 150 and 1,300 ft.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Dwarf hawkbeard	<i>Askellia nana</i>	CO-S2	Occurs on steep alpine scree and talus slopes at elevations between 10,000 and 14,000 ft.	×	×	×
Dwarf milkweed	<i>Asclepias uncialis</i> ssp. <i>uncialis</i>	BLM-S; CO-S2	Grows in level to gently sloping terrain, often at the base of escarpments or mesas. Elevation is between 3,920 and 7,640 ft.	×		
Eastwood evening-primrose	<i>Camissonia eastwoodiae</i>	BLM-S; CO-S1	Endemic to the Colorado Plateau and found in Utah and Colorado in mat-sagebrush, shadscale, blackbrush, and juniper communities between 3,900 and 5,900 ft.	×		
Eastwood milkweed	<i>Asclepias eastwoodiana</i>	BLM-S; FWS-SC; NV-S2	Endemic to Nevada from public and private lands in Esmeralda, Lander, Lincoln, and Nye Counties. Occurs in open areas on a wide variety of basic (pH usually >8) soils, including calcareous clay knolls; sand, carbonate, or basaltic gravels; or shale outcrops, generally barren and lacking competition. Frequently occurs in small washes or other moisture-accumulating microsites at elevations between 4,700 and 7,100 ft.	×	×	×
Eastwood monkey-flower	<i>Mimulus eastwoodiae</i>	BLM-S; CO-S1	Endemic to the canyonlands of Utah, Colorado, Arizona, and New Mexico. Grows in moist seeps and hanging garden communities in sandstone cliffs.	×		
El Dorado bedstraw	<i>Galium californicum</i> ssp. <i>sierrae</i>	ESA-E; BLM-S; CA-S1	Endemic to California with approximately 10 occurrences in El Dorado County. Inhabits chaparral, cismontane woodland, and lower montane coniferous forest at elevations between 320 and 1,920 ft.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Elko rockcress	<i>Boechea falcifruca</i>	BLM-S; NV-S1	Endemic to Nevada, in Elko County and in the Shoshone Mountains in Lander County. Inhabits sagebrush dominated, north-facing slopes.	×		
Emory's barrel-cactus	<i>Ferocactus emoryi</i>	AZ-SR; AZ-S1	Endemic to Arizona from the Sierra Estrella (Maricopa County) to the Organ Pipe Cactus National Monument and Papago Indian Reservation (Pima County). Occurs on rocky hills and sandy or rocky flats, including washes, alluvial fans, and mesas. Elevation ranges between 1,500 and 3,000 ft.	×	×	
Emory's crucifixion-thorn	<i>Castela emoryi</i>	CA-S2	Restricted to deserts of southern California and southwestern Arizona where it occurs at low densities. Inhabits slightly wet areas within Mojave desertscrub, nonsaline playas, creosotebush scrub, and Sonoran desertscrub communities. Preferred sites are described as being moist, having fine-textured alluvial bottomland soils, and associated with basalt flows. Elevation ranges between 295 and 2,200 ft.	×	×	×
Ephedra buckwheat	<i>Eriogonum ephedroides</i>	BLM-S; CO-S1	Known in Rio Blanco and Moffat Counties in Colorado, and Uintah County, Utah. Found in juniper and sagebrush-grass communities at 5,700 ft.	×		
Ewan's cinquefoil	<i>Potentilla glandulosa</i> ssp. <i>ewanii</i>	BLM-S; CA-S1	Known from only one occurrence in the San Bernardino Mountains in southern California. Inhabits montane coniferous forests near seeps and springs at elevations between 6,230 and 7,875 ft.	×		
Fendler's townsend-daisy	<i>Townsendia fendleri</i>	CO-S2	Inhabits sandy or rocky soils within desertscrub and pinyon-juniper woodlands. Elevation ranges between 3,900 and 7,900 ft.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Ferron milkvetch	<i>Astragalus musiniensis</i>	BLM-S; CO-S1	Known in Colorado and Utah on gullied bluffs, knolls, benches, and open hillsides in pinyon-juniper woodlands or desert shrub communities. Elevation is between 4,700 and 7,000 ft.	×		
Few-flowered ragwort	<i>Packera pauciflora</i>	BLM-S; CO-S1	Extensive range in North America where it grows in subalpine to alpine damp woods and meadows.	×		
Fickeisen plains cactus	<i>Pediocactus peeblesianus</i> var. <i>fickeiseniae</i>	ESA-C; AZ-HS; AZ-S1	Range is northern Arizona in Coconino, Mohave, and Navajo Counties. Inhabits ridgetops and benches with slight to moderate slope in gravelly soils at 3,985 to 5,940 ft.	×	×	
Fish Creek fleabane	<i>Erigeron piscaticus</i>	BLM-S; AZ-SR; FWS-SC; AZ-S1	Known only in central Arizona, in Maricopa and Graham Counties, at elevations of 2,250 to 3,500 ft. Inhabits moist, sandy canyon bottoms associated with perennial streams.	×	×	
Fish Slough milkvetch	<i>Astragalus lentiginosus</i> var. <i>piscinensis</i>	ESA-T; BLM-S; CA-S1	Endemic to California. Known from less than five occurrences in Inyo and Mono Counties. Inhabits alkaline playas at elevations between 3,700 and 4,265 ft.	×		
Fisher Towers milkvetch	<i>Astragalus piscator</i>	BLM-S; CO-S1	Known in Utah and Colorado. Habitat in Colorado is alluvial terraces along the Dolores River, in open areas with sandy soil.	×		
Five-flower rockdaisy	<i>Perityle quinqueflora</i>	FWS-SC; NM-SC	Known from southern New Mexico and western Texas. Inhabits crevices of limestone bluffs in high canyons and caprock at elevations between 5,000 and 6,000 ft.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Flagstaff beardtongue	<i>Penstemon nudiflorus</i>	AZ-S2	Endemic to Arizona. Occurs in dry ponderosa pine forests in mountainous regions south of the Grand Canyon. Elevation ranges between 5,000 and 7,375 ft.	×	×	
Flannel bush	<i>Fremontodendron californicum</i>	BLM-S; AZ-SR; AZ-S2	Known from Arizona and California. Occurs on well-drained rocky hillsides and ridges, in chaparral and pinyon-juniper and ponderosa pine woodlands. Occurs primarily on the dry, north slopes in canyons. Elevation ranges between 3,500 and 6,500 ft.	×	×	
Flat-seeded spurge	<i>Chamaesyce platysperma</i>	BLM-S; CA-S1	Recently observed from two separate occurrences in southern California and southwestern Arizona. Inhabits sandy substrates of desert dunes within Sonoran desertscrub communities at elevations below 650 ft.	×	×	×
Fragile rockbrake	<i>Cryptogramma stelleri</i>	BLM-S; CO-S2	Inhabits moist soils on shaded limestone cliffs at elevations greater than 7,000 ft and often in association with mosses.	×	×	×
Fremont's gentian	<i>Gentiana fremontii</i>	CA-S2	Restricted to disjunct locations in California and Colorado. Within California, the species inhabits wet meadows and seeps within red fir, lodgepole, and upper montane coniferous forests. Elevation ranges between 7,900 and 8,850 ft.	×		
Frisco buckwheat	<i>Eriogonum soledium</i>	ESA-UR; BLM-S; UT-S1	Endemic to the San Francisco Mountains in Beaver County, Utah. Occurs in sagebrush and pinyon-juniper communities on white limestone outcrops. Elevation ranges between 6,600 and 7,300 ft.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Frisco clover	<i>Trifolium friscanum</i>	ESA-UR; BLM-S; UT-S1	Known from the San Francisco and Beaver Lake Mountains in Beaver County, Utah. Occurs on volcanic gravels and limestone substrates in association with pinyon-juniper woodlands at elevations between 6,900 and 7,300 ft.	×	×	×
Gentner's fritillary	<i>Fritillaria gentneri</i>	ESA-E; BLM-S; CA-S1	Occurs in chaparral and cismontane woodland at elevations between 3,300 and 3,700 ft.	×		
Gentry indigo bush	<i>Dalea tentaculoides</i>	BLM-S; AZ-HS; FWS-SC; AZ-S1	Known in Arizona in Santa Cruz County, Pajarito Mountains, Sycamore Canyon, and in one site in Mexico. Occurs in areas of disturbance and along canyon bottom on cobble terraces with occasional flooding. Elevation is 3,600 to 4,580 ft.	×	×	
Giant Spanish-needle	<i>Palafoxia arida</i> var. <i>gigantea</i>	BLM-S; CA-S1	Occurs on desert sand dune habitats at elevations below 330 ft.	×	×	×
Gibben's beardtongue	<i>Penstemon gibbensii</i>	BLM-S; CO-S1	Endemic to an area of Wyoming, Colorado, and Utah; restricted to a particular soil type of sparsely vegetated shale or sandy-clay at elevations between 5,500 and 7,700 ft.	×		
Gierisch globemallow	<i>Sphaeralcea gierischii</i>	ESA-C; AZ-S1	Endemic to Washington County, Utah, and Mohave County, Arizona. Inhabits warm desert shrub communities between 2,400 and 4,260 ft.	×	×	
Gilman milkvetch	<i>Astragalus gilmanii</i>	BLM-S; NV-S1	Known from California and Nevada. Occurs on light-colored volcanic slopes in pinyon-juniper woodland communities at elevations between 5,400 and 6,000 ft.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Glandular ditaxis	<i>Ditaxis claryana</i>	CA-S1	Sandy substrates within desertscrub communities at elevations below 1,525 ft.	×	×	×
Glass Mountain coral-root	<i>Hexalectris nitida</i>	BLM-S; NM-E; FWS-SC; NM-S1	Known from southern New Mexico and western Texas. Inhabits deep canyons in litter and under oak trees at elevations near 4,300 ft.	×	×	×
Gold Butte moss	<i>Didymodon nevadensis</i>	BLM-S; NV-S1	Known from only Nevada and Texas. Occurs on or near gypsiferous deposits and outcrops or limestone boulders, especially on east- to north-facing slopes of loose, uncompacted soil. Typically associated with other mosses and lichens. Elevation ranges between 1,300 and 2,300 ft.	×	×	×
Golden barrel cactus	<i>Ferocactus cylindraceus</i> var. <i>eastwoodiae</i>	AZ-SR; AZ-S1	Endemic to central Arizona on gravelly or rocky hillsides, canyon walls, and wash margins. Elevation ranges between 1,200 and 4,000 ft.	×	×	
Golden bladderpod	<i>Lesquerella aurea</i>	FWS-SC; NM-SC; NM-S2	Restricted to the Jicarilla and Sacramento Mountains in south-central New Mexico. Occurs in open sites and bare areas of rocky limestone soil. Primarily known from montane coniferous forests at elevations between 6,500 and 9,000 ft.	×		
Golden blazing star	<i>Nuttallia chrysantha</i>	CO-S2	Barren slopes of limestone, shale, or clay at elevations between 5,120 and 5,700ft.	×		
Golden columbine	<i>Aquilegia chrysantha</i> var. <i>chaplinaei</i>	FWS-SC; NM-SC; NM-S2	Known from southern New Mexico and western Texas. Inhabits limestone seeps and springs in montane scrub or riparian canyon bottoms at elevations between 4,700 and 5,500 ft.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Golden columbine	<i>Aquilegia chrysantha</i> var. <i>rydbergii</i>	CO-S1	Occurs along montane streams or in rocky ravines at elevations between 5,500 and 6,000 ft.	×		
Goodding onion	<i>Allium gooddingii</i>	AZ-HS; FWS-SC; NM-E; NM-S1	Range is Arizona and New Mexico, where it grows on moist shaded canyon bottoms in climax mixed-conifer forests and spruce-fir zones at elevations of 7,000 to 11,300 ft.	×	×	
Good-neighbor bladderpod	<i>Lesquerella vicina</i>	BLM-S; CO-S2	Endemic to Montrose and Ouray Counties in Colorado. Grows in the ecotone between pinyon-juniper woodland and salt desertscrub at elevations between 6,000 and 7,200 ft. Often found in disturbed soils.	×		
Graham beardtongue	<i>Penstemon grahamii</i>	BLM-S; CO-S1	Occurs in a narrow range within Utah and Colorado on gravelly clay soils on semibarren knolls of white calcareous shale in pinyon-juniper woodland and desert shrubland.	×		
Gramma grass cactus	<i>Sclerocactus papyracanthus</i>	BLM-S	Known from southern Arizona, New Mexico, and western Texas. Occurs in pinyon-juniper woodlands and desert grasslands on sandy soils at elevations between 4,900 and 7,200 ft.	×	×	×
Grand buckwheat	<i>Eriogonum contortum</i>	BLM-S; CO-S2	Occurs in Colorado and Utah in shadscale and saltbrush communities between 4,200 and 5,000 ft in elevation.	×		
Grand Canyon century plant	<i>Agave phillipsiana</i>	AZ-HS; AZ-S1	Found only in Arizona near pre-Columbian habitation sites.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Grand Canyon rose	<i>Rosa stellata</i> ssp. <i>abyssa</i>	BLM-S; AZ-SR; FWS-SC; AZ-S2	Occurs on or near canyon rims or cliff tops at 4,500 to 7,540 ft in elevation in Coconino and Mohave Counties, Arizona.	×	×	
Grand Junction milkvetch	<i>Astragalus linifolius</i>	BLM-S	Endemic to the east base of the Uncompahgre Plateau and the Dolores River. Inhabits canyon sides between 4,800 and 6,200 ft in elevation.	×		
Grassy slope sedge	<i>Carex oreocharis</i>	CO-S1	Regionally endemic to the southern Rocky Mountains. Occurs on granitic soils on dry slopes at elevations between 7,200 and 10,800 ft.	×	×	×
Gray's Peak whitlow-grass	<i>Draba grayana</i>	CO-S2	Regionally endemic within the state of Colorado. Inhabits gravelly alpine slopes and fellfields at elevations between 11,500 and 14,000 ft.	×	×	×
Great Plains ladies'-tresses	<i>Spiranthes magnicamporum</i>	NM-E	Habitat is variable, but associated with calcareous soils along riverbanks and floodplains.	×	×	
Green spleenwort	<i>Asplenium trichomanes-ramosum</i>	CO-S1	Occurs on limestone and other basic rocks at elevations between 9,850 and 13,100 ft.	×		
Greene's milkweed	<i>Asclepias uncialis</i> ssp. <i>uncialis</i>	BLM-S; CO-S2	Occurs in small colonies scattered along the eastern edge of the southern Rocky Mountains in eastern Colorado. Plants are often found at the base of escarpments at elevations between 4,000 and 7,600 ft.	×	×	
Gunnison's milkvetch	<i>Astragalus anisus</i>	BLM-S; CO-S2	Endemic to west-central Colorado in the Gunnison River Basin. Associated with sagebrush shrubland systems on flat to rolling hills with well-drained clay soils at elevations between 7,000 and 10,000 ft.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Gypsum Valley cateye	<i>Cryptantha gypsophila</i>	BLM-S; CO-S1	Endemic to Colorado in Montrose and San Miguel Counties. Occurs in gypsum outcrops.	×		
Gypsum wild-buckwheat	<i>Eriogonum gypsophilum</i>	ESA-T; NM-E; NM-S1	Endemic to Eddy County, New Mexico, in three known locations. Habitat is restricted to almost pure gypsum at elevations between 3,280 and 3,600 ft.	×	×	
Hairy stickleaf	<i>Mentzelia hirsutissima</i>	CA-S2	Patchy distribution in southern California. Occurs on washes, fans, or slopes having rocky or sandy substrates within Sonoran desertscrub and creosotebush scrub communities at elevations below 2,300 ft.	×	×	×
Hairy townsend-daisy	<i>Townsendia strigosa</i>	BLM-S; CO-S1	In Colorado, currently known to occur only on alluvial gravel substrates of the Lookout Mountain ACEC. Inhabits open sites, sands, shales, and clays with desertscrub, junipers, and pinyons at elevations between 4,900 and 6,500 ft.	×	×	
Halfmoon milkvetch	<i>Astragalus allochrous</i> var. <i>playanus</i>	CO-S1; CA-S1	Occurs on gravelly washes and sandbars of summer-dry streams at elevations between 2,600 and 4,000 ft. In California, known from the eastern Mojave Desert within desertscrub communities.	×	×	×
Halfring milkvetch	<i>Astragalus mohavensis</i> var. <i>hemigyris</i>	BLM-S; FWS-SC; NV-S2	Endemic to Nevada. Occurs on carbonate gravels and derivative soils on terraced hills and ledges, open slopes, and along washes within the creosotebush-bursage, blackbrush, and mixed-shrub habitat communities. Elevation ranges between 3,000 and 5,600 ft.	×	×	×
Hall fescue	<i>Festuca hallii</i>	CO-S1	Inhabits alpine tundra and dry subalpine grasslands at elevations between 11,000 and 12,000 ft.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Harrington beardtongue	<i>Penstemon harringtonii</i>	BLM-S	Endemic to Colorado in Grand, Eagle, Routt, Garfield, Pitkin, and Summit Counties. Grows on rocky loam in sagebrush flats with pinyon-juniper.	×		
Hartweg's golden sunburst	<i>Pseudobahia bahiifolia</i>	ESA-E; BLM-S; CA-E; CA-S2	Endemic to California where it occurs in clay, often acidic, within cismontane woodland and valley and foothill grassland.	×		
Harwood's eriastrum	<i>Eriastrum harwoodii</i>	BLM-S; CA-S2	Known from fewer than 20 occurrences in southern California. Occurs on desert dunes and other sandy habitats at elevations between 650 and 3,000 ft.	×	×	×
Harwood's milkvetch	<i>Astragalus insularis</i> var. <i>harwoodii</i>	CA-S2	Occurs in the Sonoran Desert of Arizona and California on sandy or gravelly substrates of desert dunes within desertscrub communities. Elevation ranges between 0 and 2,325 ft.	×	×	×
Helleborine	<i>Epipactis gigantea</i>	CO-S2	Wet gravelly and sandy stream shores and bars, seeps on sandstone cliffs, and, to a lesser extent, chaparral, marshes, hot springs, or riparian willow, box elder, and river birch woodlands. Elevation ranges between 4,800 and 8,000 ft.	×	×	×
Hess' fleabane	<i>Erigeron hessii</i>	NM-E; NM-S1	Endemic to the Mogollon Mountains in southwestern New Mexico. Inhabits andesitic dikes in otherwise rhyolitic rock; growing from bedrock cracks in open areas in upper montane to subalpine conifer forest at elevations between 9,500 and 10,200 ft.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Hitchcock bladderpod	<i>Physaria hitchcockii</i> var. <i>hitchcockii</i>	NV-S2	Restricted to the Sheep Range and Spring Mountains of southern Nevada and Table Cliff Plateau of Utah. Occurs on gravelly or rocky limestone substrates at elevations between 7,500 and 11,500 ft.	×		
Hohokam agave	<i>Agave murpheyi</i>	BLM-S; AZ-HS; FWS-SC; AZ-S2	Endemic to Arizona and Sonora, Mexico, on benches or alluvial terraces on gentle bajada slopes above major drainages in desertscrub communities. Elevation ranges between 1,300 and 3,200 ft.	×	×	×
Holmgren lupine	<i>Lupinus holmgrenianus</i>	BLM-S; NV-S2	Known only from the Death Valley region of California and southern Nevada. It inhabits dry desert slopes, washes, and valleys on volcanic substrates, sometimes in association with pinyon-juniper woodlands. Elevation ranges between 4,600 and 8,200 ft.	×	×	×
Holmgren milkvetch	<i>Astragalus holmgreniorum</i>	ESA-E; UT-S1	Endemic to Washington County, Utah, and Mohave County, Arizona. Inhabits warm desert shrub communities along Virgin River limestone cobble at elevations between 2,700 and 2,800 ft.	×	×	
Holy Ghost ipomopsis	<i>Ipomopsis sancti-spiritus</i>	ESA-E; NM-E; NM-S1	Endemic to one canyon in the upper Pecos River drainage of the southern Sangre de Cristo Mountains in San Miguel County, New Mexico. Inhabits dry, steep, west- to southwest-facing slopes in open ponderosa pine or mixed conifer forests at elevations of 7,730 to 8,220 ft.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Horseshoe milkvetch	<i>Astragalus equisolensis</i>	BLM-S; CO-S1	One known population along the Green River in Uintah County in Utah and also reported in Mesa County, Colorado. Grows in cracks and crevices on river terraces in sandy-gravelly or sandy-silty soils at elevations between 4,600 and 5,200 ft.	×		
House Range primrose	<i>Primula cusickiana</i> var. <i>domensis</i>	BLM-S	Endemic to the Great Basin in Millard County, Utah. Occurs in limestone crevices in the House Range at elevations between 8,500 and 9,000 ft.	×		
House Rock fishhook cactus	<i>Sclerocactus sileri</i>	BLM-S; AZ-SR; AZ-S1	Inhabits pinyon-juniper mesa tops in sandstone to sandy soils at elevations between 4,200 and 7,040 ft.	×	×	
Huachuca golden aster	<i>Heterotheca rutteri</i>	BLM-S; FWS-SC; AZ-S2	Only 11 locations in the United States, including Cochise, Pima and Santa Cruz Counties in Arizona. Grows in disturbed areas and level, open grassland at elevations of 4,500 to 6,500 ft.	×	×	
Huachuca groundsel	<i>Senecio multidentatus</i> var. <i>huachucanus</i>	AZ-HS; AZ-S2	Occurs on steep, rocky, high elevation (7,000 to 9,500 ft) mountain slopes and in canyon bottoms within pine-oak or mixed conifer forests.	×	×	
Huachuca milkvetch	<i>Astragalus hypoxylus</i>	BLM-S; AZ-SR; FWS-SC; AZ-S1	Range is Huachuca and Patagonia Mountains in Arizona at elevations of 5,300 to 6,100 ft. Inhabits open, limestone rocky clearings in oak-juniper-pinyon woodland.	×	×	
Huachuca water-umbel	<i>Lilaeopsis schaffneriana</i> var. <i>recurva</i>	ESA-E; AZ-HS; AZ-S2	Range is New Mexico, Arizona, and Sonora, Mexico. Occurs in cienegas or marshy wetlands between 2,000 and 6,000 ft in elevation, in Sonoran desertscrub, grassland, or oak woodland, and conifer forest.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Jackass-clover	<i>Wislizenia refracta</i> ssp. <i>refracta</i>	CA-S1	Known from the Mojave and northern Sonoran Deserts. Inhabits dunes, sandy washes, roadsides, and playas within creosotebush scrub, alkali sink, or desertscrub communities. Elevation ranges between 2,000 and 2,600 ft.	×	×	×
Jaeger beardtongue	<i>Penstemon thompsoniae</i> ssp. <i>jaegeri</i>	NV-S2	Endemic to southern Nevada, where it is known from 24 occurrences. Occurs on limestone soils of knolls and slopes, in drainages, and under conifers within pinyon-juniper through the subalpine conifer zones. Elevation ranges between 5,600 and 11,000 ft.	×	×	×
James' cat's-eye	<i>Oreocarya cinerea</i> var. <i>pustulosa</i>	CO-S1	Occurs in gypsum and sandy substrates within sagebrush, pinyon-juniper, oak mountain brush, and ponderosa pine communities at elevations between 5,400 and 8,500 ft.	×	×	×
Johnston's buckwheat	<i>Eriogonum microthecum</i> var. <i>johnstonii</i>	BLM-S; CA-S1; FWS-SC	Known from fewer than 10 occurrences in San Bernardino County, California. Inhabits subalpine coniferous forests on rocky substrates at elevations between 6,050 and 9,850 ft.	×	×	
Jones' blue star	<i>Amsonia jonesii</i>	BLM-S; CO-S1	Inhabits dry, open areas with clay, sand, or gravelly soils in desert-steppe, rocky gorges, and canyons, at elevations of 4,500 to 5,000 ft.	×		
Jones' cycladenia	<i>Cycladenia humilis</i> var. <i>jonesii</i>	ESA-T; AZ-HS; AZ-S1	Known in southeastern Utah and northern Arizona, in gypsiferous, sandy silty soil on clay hills that form the steep side slopes and bases of mesas in canyons at elevations of 4,390 to 6,000 ft.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Jones' globemallow	<i>Sphaeralcea caespitosa</i>	BLM-S; FWS-SC; NV-S2; UT-S2	Known from at least four occurrences in western Utah and six occurrences in eastern Nevada on federal and state lands. Occurs on Sevy dolomite calcareous soils in association with mixed shrub, pinyon-juniper, and grassland communities at elevations between 5,000 and 6,500 ft.	×	×	×
Kachina daisy	<i>Erigeron kachinensis</i>	BLM-S; CO-S1	Endemic to the Colorado Plateau and found in Utah and Colorado in low-elevation seeps and high-elevation sandstone outcrops in aspen and ponderosa pine communities. Elevation between 5,200 and 8,200 ft.	×		
Kaibab pincushion cactus	<i>Pediocactus paradinei</i>	BLM-S; AZ-HS; FWS-SC; AZ-S2	Known only on the Kaibab Plateau and House Rock Valley in Coconino County, Arizona. Occurs on level, gravelly soils of alluvial fans, valley bottoms, and ridgetops, at elevations between 5,000 and 7,200 ft.	×	×	
Kearney's blue-star	<i>Amsonia kearneyana</i>	ESA-E; AZ-HS; AZ-S1	Inhabits dry, open slopes at 4,000- to 6,000-ft elevation and dry washes at 3,600 to 3,800 ft within the South and Sycamore Canyons of the Baboquivari Mountains in Pima County, Arizona.	×	×	
Kearney's sumac	<i>Rhus kearneyi</i>	BLM-S; AZ-SR; AZ-S2	Range is Arizona and Baja California, Mexico, on arid slopes and along canyons and drainages at 1,000 to 2,000 ft in elevation.	×	×	
Keck's checkerbloom	<i>Sidalcea keckii</i>	ESA-E; BLM-S; CA-S1	Endemic to California where it occurs in cismontane woodland, and valley and foothill grassland. Elevation between 245 and 2,130 ft.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Kern mallow	<i>Eremalche kernensis</i>	ESA-E; BLM-S; CA-S1	Endemic to California in Kern and Tulare Counties. Inhabits chenopod scrub and valley and foothill grassland at elevations between 230 and 3,280 ft.	×		
Keystone Canyon thistle	<i>Cirsium arizonicum</i> var. <i>tenuisectum</i>	NV-S1	Restricted to California and Nevada. Occurs on rocky slopes, drainages, roadsides, and disturbed areas within Joshua tree woodland, Mojave desertscrub, pine-oak-juniper woodland, montane coniferous forests, and pinyon-juniper woodland communities. Elevation ranges between 4,900 and 9,200 ft.	×		
King's campion	<i>Gastrolychnis kingii</i>	CO-S1	Regionally endemic to Colorado. Occurs in spruce-fir, sedge, and alpine tundra communities at elevations between 10,800 and 11,300 ft.	×	×	×
Knowlton's cactus	<i>Pediocactus knowltonii</i>	ESA-E; NM-E; NM-S1	Endemic to San Juan County, New Mexico, near the Los Pinos River. Inhabits rolling, gravelly hills in a pinyon-juniper-sagebrush community at an elevation of 6,200 to 6,300 ft.	×	×	
Kofa barberry	<i>Berberis harrisoniana</i>	BLM-S; AZ-S1; CA-S1	Known from disjunct locations in southwestern Arizona and southern California. Known from only one occurrence in California in the Whipple Mountains. Occurs in deeply shaded places, such as alcoves in narrow steep-walled canyons on andesite and rhyolite soils. Elevation ranges between 2,450 and 3,925 ft.	×	×	
Kremmling milkvetch	<i>Astragalus osterhoutii</i>	ESA-E; CO-S1	Endemic to Grand County, Colorado, near a single creek. Grows through sagebrush on moderate slopes at 7,300 to 7,900 ft in elevation.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Kuenzler's hedgehog cactus	<i>Echinocereus fendleri</i> var. <i>kuenzleri</i>	ESA-E; NM-E; NM-S1	Endemic to southern New Mexico from the Capitan, Guadalupe, and Sacramento Mountains. Occurs primarily on gentle, gravelly to rocky slopes and benches on limestone. Also occurs in Great Plains grasslands, oak woodlands, and pinyon-juniper woodlands. Elevation ranges between 5,200 and 6,600 ft.	×	×	×
Lace-leaf rockdaisy	<i>Perityle ambrosiifolia</i>	BLM-S; AZ-S1	Occurs in fissures and crevices on cliffs near seeps and waterfalls above Eagle Creek and the San Francisco River in Greenlee County, Arizona. Elevation is 1,800 to 4,900 ft.	×	×	
Lahontan beardtongue	<i>Penstemon palmeri</i> var. <i>macranthus</i>	BLM-S; NV-S2	Endemic to Nevada along washes, roadsides, and canyon floors where moisture is available in summer. At elevations between 3,420 to 4,550 ft.	×	×	
Lane Mountain milkvetch	<i>Astragalus jaegerianus</i>	ESA-E; BLM-S; CA-S1	Endemic to the Mojave Desert in San Bernardino County, California, where it is known from fewer than 10 locations. Occurs on Coolgardie Mesa desertscrub habitats on granitic-sandy soils. Elevation ranges between 3,000 and 3,800 ft.	×		
Las Vegas bearpoppy	<i>Arctomecon californica</i>	NV-P; FWS-SC	Restricted to Arizona and Nevada. Occurs in open, dry, spongy or powdery, often dissected ("badland") or hummocked soils with high gypsum content, typically with well-developed soil crust, in areas of generally low relief on all aspects and slopes, with a sparse cover of other gypsum-tolerant species. Elevation ranges between 1,050 and 3,650 ft.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Las Vegas buckwheat	<i>Eriogonum corymbosum</i> var. <i>nilesii</i>	ESA-C; BLM-S; NV-S1	Restricted to southern Nevada, where the species is known from 15 occurrences, encompassing an area of less than 1,500 acres. Occurs on or near gypsum soils, in washes, drainages, or in areas of generally low relief. Elevation ranges between 1,900 and 3,850 ft.	×	×	×
Latimer's woodland-gilia	<i>Saltugilia latimeri</i>	BLM-S; CA-S2	Mojave desertscrub communities, pinyon-juniper woodlands, and washes on rocky or sandy substrates at elevations between 1,300 and 6,500 ft.	×	×	×
Lavin eggvetch	<i>Astragalus oophorus</i> var. <i>lavinii</i>	BLM-S; NV-S2	Range includes Douglas, Lyon, and possibly Mineral Counties in Nevada; also in California. Grows in open, dry, gravelly clay slopes in pinyon-juniper or sagebrush at elevations between 5,700 and 7,500 ft.	×	×	
Layne's ragwort	<i>Packera layneae</i>	ESA-T; BLM-S; CA-S2	California endemic that occurs in rocky chaparral and cismontane woodland at elevations between 650 and 3,280 ft.	×		
Leadville milkvetch	<i>Astragalus molybdenus</i>	CO-S2	Occurs on rocky slopes and turf hillsides at elevations between 11,400 and 13,200 ft. Substrates are typically limestone.	×	×	
Least moonwort	<i>Botrychium simplex</i>	CO-S1	Inhabits open habitats, including pastures, meadows, orchards, prairies, wetlands, fens, sand dunes, and in lake and stream-edge vegetation.	×	×	×
Leathery grape fern	<i>Botrychium multifidum</i>	CO-S1	Inhabits wet meadows, forest edges, lakeshores, stony lake margins, and trail sides at elevations between 6,300 and 11,500 ft. Sites are usually flat and open and have acidic soils that are seasonally wet.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Lee pincushion cactus	<i>Escobaria sneedii</i> var. <i>leei</i>	ESA-T; NM-E; NM-S2	Endemic to Guadalupe Mountains in Eddy County, New Mexico. Inhabits cracks in limestone in areas of broken terrain and steep slopes of Chihuahuan desertscrub at elevations between 4,000 and 5,000 ft.	×	×	
Lemmon fleabane	<i>Erigeron lemmonii</i>	ESA-C; AZ-HS; AZ-S1	Endemic to southern Arizona and found in only one location in Scheelite Canyon, Huachuca Mountains, in Cochise County. Inhabits crevices and ledges of west-, south-, and north-facing cliffs and on large boulders at the canyon bottom. Elevation is 6,300 to 7,300 ft.	×	×	
Lemon lily	<i>Lilium parryi</i>	BLM-S; CA-S2; FWS-SC	Inhabits wet soils of mountainous terrain, generally in forested areas between 5,000 and 9,000 ft in elevation. Usually found growing along shaded edges of streams, seeps, and boggy meadows.	×		
Lesser bladderwort	<i>Utricularia minor</i>	CO-S2	Inhabits shallow wetlands, including poor to extremely rich fens, freshwater marshes, beaver ponds, and enriched seeps at higher elevations corresponding to the Rocky Mountain Subalpine-Montane Fen and North American Arid West Emergent Marsh ecological systems. Preferred sites are inundated mudflats or areas with emergent vegetation.	×		
Ligulate feverfew	<i>Bolophyta ligulata</i>	BLM-S; CO-S2	Occurs in Colorado, Nevada, and Utah in salt desert shrub, serviceberry, rabbitbrush, Indian rice-grass, greasewood, galleta, black sagebrush, pygmy sagebrush, and pinyon-juniper communities between 5,600 and 7,000 ft in elevation.	×		

**TABLE J.6-1 (Cont.)**

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Lime-loving willow	<i>Salix lanata</i> ssp. <i>calcicola</i>	CO-S1	Occurs on calcareous lakeshores at elevations near 12,000 ft.	×	×	
Limestone beardtongue	<i>Penstemon calcareus</i>	BLM-S; CA-S2	Inhabits Mojave desertscrub communities, pinyon-juniper forests, and Joshua tree woodlands on rocky carbonate substrates. Elevation ranges between 3,280 and 6,550 ft.	×	×	
Little bulrush	<i>Trichophorum pumilum</i>	BLM-S; CO-S2	Occurs in scattered sites in North America on calcareous ledges, gravels, shores, seepage areas, mines, and bogs.	×		
Little purple monkeyflower	<i>Mimulus purpureus</i>	BLM-S; CA-S2; FWS-SC	Inhabits wet meadows and seeps in upper montane coniferous forests on pebble plain substrates. Elevation ranges between 6,225 and 7,550 ft.	×	×	
Little San Bernardino Mountains linanthus	<i>Linanthus maculatus</i>	BLM-S; CA-S1	Known from fewer than 20 occurrences in southern California near Joshua Tree National Park. Inhabits desert dunes and sandy flats with creosotebush scrub and Joshua tree woodland communities at elevations less than 6,900 ft.	×	×	×
Littlefield milkvetch	<i>Astragalus preussii</i> var. <i>laxiflorus</i>	NV-S1	Endemic to the Lake Mead region of Arizona and Nevada and disjunctly in California. Occurs on alkaline clay flats and gravelly washes within shadscale and chenopod scrub communities at elevations between 2,300 and 2,450 ft.	×	×	×
Livemore fiddleleaf	<i>Nama dichotomum</i>	CO-S1	Specific habitat requirements for this species are largely unknown. Generally known to occur in plains and prairies. Occurs within the analysis area at elevations between 7,000 and 10,200 ft.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Lobed ground-cherry	<i>Physalis lobata</i>	CA-S1	Known from the northeastern Sonoran and southeastern Mojave Deserts. Inhabits decomposed granitic substrates within creosotebush scrub, alkali sink, desertscrub, and playas communities. Elevation ranges between 1,650 and 2,600 ft.	×	×	×
Lone Mesa snakeweed	<i>Gutierrezia elegans</i>	BLM-S; CO-S1	Endemic to Colorado on shale barrens in and around Lone Mesa State Park in Dolores County.	×		
Lone Mountain goldenhead	<i>Tonestus graniticus</i>	BLM-S; NV-S1	Endemic to Esmeralda County, Nevada. Occurs in crevices of granitic cliffs and outcrops on protected exposures (north to east aspects in deep canyons) in pinyon-juniper communities at elevations near 7,800 ft.	×		
Long-calyx milkvetch	<i>Astragalus oophorus</i> var. <i>lonchocalyx</i>	BLM-S; FWS-SC; NV-S2; UT-S1	Regionally endemic to the Great Basin in western Utah and eastern Nevada. Occurs in pinyon-juniper woodlands, sagebrush, and mixed shrub communities at elevations between 5,800 and 7,500 ft.	×	×	×
Longleaf sandpaper plant	<i>Petalonyx linearis</i>	AZ-S2	Known in southeastern California from the Mojave and Sonoran Deserts. Occurs on sandy or rocky canyons within creosotebush scrub communities at elevations below 3,300 ft.	×	×	
Long-stem evening-primrose	<i>Oenothera longissima</i>	CA-S1	Restricted to Inyo and San Bernardino Counties in California. Inhabits seasonally mesic desertscrub, creosotebush scrub, and pinyon-juniper woodland habitat. Elevation ranges between 3,300 and 5,500 ft.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Low feverfew	<i>Parthenium ligulatum</i>	BLM-S; NV-S1	Known in Colorado, Utah, and Eureka County, Nevada. Inhabits barren or semibarren outcrops in salt desert shrub, serviceberry, rabbitbrush, Indian rice-grass, greasebush, galleta, black sagebrush, pygmy sagebrush, and pinyon-juniper communities between 5,590 and 7,000 ft.	×		
Madrean ladies'-tresses	<i>Spiranthes delitescens</i>	ESA-E; AZ-HS; AZ-S1	Known only from four cienegas in southern Arizona. Grows in very dense vegetation of grasses and sedges within marshy wetlands or cienegas.	×	×	
Male fern	<i>Dryopteris filix-mas</i>	CA-S1	Known from the San Bernardino, White, and Inyo Mountains of California. Occurs on rocky cliffs and talus of granitic or igneous derivation within pinyon-juniper woodland and upper montane coniferous forest habitat. Elevation ranges between 7,900 and 10,000 ft.	×	×	
Mancos milkvetch	<i>Astragalus humillimus</i>	ESA-E; NM-E; NM-S1; CO-S1	Known in San Juan County, New Mexico, and Montezuma County, Colorado. Inhabits sandstone ledges or mesa tops, often in cracks or shallow pockets of sandy soils at elevations between 5,000 and 6,000 ft.	×	×	
Many-flowered gilia	<i>Ipomopsis multiflora</i>	CO-S1	Occurs on open sites, desert shrublands, and woodlands.	×	×	×
Many-stemmed spider-flower	<i>Cleome multicaulis</i>	BLM-S; CO-S2; FWS-SC	Populations exist in the San Luis Valley on saturated soils created by waterfowl management regimes on public lands.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Marble Canyon milkvetch	<i>Astragalus cremnophylax</i> var. <i>hevronii</i>	BLM-S; AZ-S1	Known on the rim of Marble Canyon in Coconino County, Arizona. Grows at 5,200 to 5,400 ft in elevation in Great Basin desertscrub habitat, on rim-rock benches at the canyon edge in crevices with shallow soil on Kaibab Limestone.	×	×	
Marble Canyon rockcress	<i>Sibara grisea</i>	BLM-S; FWS-SC; NM-SC	Known from southern New Mexico and western Texas. Occurs in rock crevices and at the bases of limestone cliffs in chaparral and pinyon-juniper woodland communities at elevations between 4,500 and 6,000 ft.	×	×	×
Marsh cinquefoil	<i>Comarum palustre</i>	CO-S1	Occurs on lakeshores, bogs, swamps, and stream banks in mucky, peaty soil.	×	×	×
Marsh-meadow indian-paintbrush	<i>Castilleja lineata</i>	CO-S1	Montane woodlands and meadows at elevations between 8,500 and 12,000 ft.	×	×	×
McDonald's rockcress	<i>Arabis macdonaldiana</i>	ESA-E; CA-E; CA-S2	Inhabits upper and lower montane coniferous forest at lower than 6,000 ft in elevation.	×		
McKelvey's agave	<i>Agave mckelveyana</i>	AZ-SR	Endemic to Arizona in dry scrubland between 3,000 and 6,000 ft.	×	×	
Meadow Valley sandwort	<i>Eremogone stenomeres</i>	NV-S2	Endemic to Nevada, where it is restricted to Clark and Lincoln Counties. Occurs on limestone cliffs at elevations between 2,950 and 3,950 ft.	×	×	×
Mecca-aster	<i>Xylorhiza cognata</i>	BLM-S; CA-S2	Restricted to the Indio Hills and Mecca Hills in Riverside County, California. Inhabits desertscrub on steep canyon slopes, at the bases of canyons, and in canyon washes at elevations below 1,300 ft.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Mesa Verde cactus	<i>Sclerocactus mesae-verdae</i>	ESA-T; NM-E; NM-S2; CO-S2	Known only from the Four Corners area of Colorado and New Mexico. Inhabits dry, low, exposed hills and mesas in the desert between 3,900 and 6,600 ft.	×	×	
Mescalero milkwort	<i>Polygala rimulicola</i> var. <i>mescalerorum</i>	BLM-S; NM-E; FWS-SC; NM-S1	Known only from the San Andres Mountains in Doña Ana County, New Mexico. Occurs in rock crevices in sandy limestone cliffs at elevations between 5,700 and 6,300 ft.	×		
Mingan's moonwort	<i>Botrychium minganense</i>	CO-S1	Inhabits dense forest to open meadow and from summer-dry meadows to permanently saturated fens and seeps, but most common in moist meadows and woodlands in association with riparian corridors. Recorded sites are often associated with old (>10 year) disturbances.	×	×	×
Mohave indigo bush	<i>Psoralea argophylla</i> var. <i>pubescens</i>	BLM-S; AZ-S2	Range is the Colorado River drainage of southern Utah and northern Arizona. Inhabits rocky clay knolls and talus under sandstone cliffs at 3,200 to 4,900 ft in elevation.	×	×	
Mohave thistle	<i>Cirsium mohavense</i>	AZ-S1	Restricted to wetland habitats in the Mojave Desert region; common at perennial springs. Found in moist canyons, stream banks, and poorly drained alkaline flats, seeps, and springs.	×	×	×
Mojave monkeyflower	<i>Mimulus mohavensis</i>	BLM-S; CA-S2; FWS-SC	Endemic to the western Mojave Desert in San Bernardino County, California. Inhabits gravelly banks of desert washes at elevations below 3,900 ft.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Mokiak milkvetch	<i>Astragalus mokiacensis</i>	BLM-S; NM-S1	Known only from the valleys and canyons of the Colorado and Virgin Rivers in northern Mohave County, Arizona, and eastern Clark County, Nevada. Occurs on sandy soils of bluffs, cliff terraces, gullied badlands, and disturbed areas along streams. Elevation ranges between 2,000 and 4,200 ft.	×		
Money wild buckwheat	<i>Eriogonum nummulare</i>	BLM-S; UT-S1	Occurs in western Utah and eastern Nevada on gravelly washes, flats, and slopes in saltbrush and sagebrush communities. Also known to occur in pinyon-juniper woodlands.	×	×	×
Mono County phacelia	<i>Phacelia monoensis</i>	BLM-S (CA, NV)	Range includes Esmeralda, Lyon, and Mineral Counties, Nevada, and California. Grows in alkaline, barren, or sparsely vegetated clay soils with low-intensity artificial or natural disturbances, such as road berms. Occurs in pinyon-juniper and mountain sagebrush zones at elevations between 5,920 and 9,055 ft.	×		
Mosquito plant	<i>Agastache cana</i>	FWS-SC; NM-SC	Known from southern New Mexico and western Texas. Occurs in rock crevices of granite cliffs or in canyon habitats at the lower edge of the pinyon-juniper zone. Elevations range between 4,600 and 5,900 ft.	×	×	×
Mottled milkvetch	<i>Astragalus lentiginosus</i> var. <i>stramineus</i>	NV-S1	Restricted to the lower Virgin River Valley in Mohave County, Arizona, and Clark County, Nevada. Inhabits sandy and gravelly flats and dunes at elevations between 2,000 and 3,000 ft.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Mount Charleston sandwort	<i>Eremogone congesta</i> var. <i>charlestonensis</i>	NV-S2	Restricted to southeastern California and southern Nevada. Occurs on sandy ridges at elevations between 7,200 and 10,000 ft.	×	×	
Mountain ball cactus	<i>Pediocactus simpsonii</i> var. <i>minor</i>	NM-E	Inhabits rocky soils of high valleys and mountainsides in grasslands and at edges of forests near timberline.	×	×	
Mountain bladder fern	<i>Cystopteris montana</i>	CO-S1	Inhabits moist, rich soil in closed-canopied spruce-fir forests at elevations between 9,000 and 11,000 ft.	×	×	×
Mountain whitlow-grass	<i>Draba rectifruca</i>	CO-S2	Occurs in openings in sagebrush ponderosa pine, aspen, spruce-fir, lodgepole pine, and moderately moist alpine meadow communities at elevations between 6,400 and 9,600 ft.	×	×	×
Mt. Dellenbaugh sandwort	<i>Arenaria aberrans</i>	AZ-S2	Endemic to Arizona. Occurs in pinyon-juniper, oak, and pine forests at elevations between 5,500 and 9,000 ft.	×	×	
Mt. Trumbull beardtongue	<i>Penstemon distans</i>	BLM-S; AZ-SR; FWS-SC; AZ-S2	Restricted to Shivwits Plateau in Mohave County, Arizona. Occurs in gravelly Kaibab limestone on mesa tops in pinyon-juniper woodlands, and on canyon slopes of Mohave desertscrub in Whitmore, Parashant, and Andrus Canyons. Elevation is 3,900 to 5,200 ft.	×	×	
Mud nama	<i>Nama stenocarpum</i>	CA-S1	Known from margins of freshwater wetlands in southern California, including lakes, streams, rivers, marshes, and swamps. Elevation ranges between 0 and 1,640 ft.	×	×	×
Mud sedge	<i>Carex limosa</i>	CO-S2	Inhabits sphagnum bogs, wet meadows, and shores at elevations below 6,500 ft.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Munz's cholla	<i>Opuntia munzii</i>	BLM-S; CA-S1; FWS-SC	Inhabits gravelly or sandy to rocky soils, often on lower bajadas, washes, and flats. Also occurs in hills and canyon sides. Occurs in Sonoran Desert creosotebush shrub communities at elevations below 3,280 ft.	×	×	×
Nachlinger catchfly	<i>Silene nachlingerae</i>	BLM-S; NV-S2	Endemic to Nevada in Elko, Nye, and White Pine Counties. Occurs in the subalpine conifer zone at elevations between 7,160 and 11,250 ft on dry, exposed crevices on steep slopes or cliffs.	×		
Narrow-leaf evening primrose	<i>Oenothera acutissima</i>	BLM-S; CO-S2	Endemic to the mountains of northeastern Utah and Colorado. Restricted to sandy and gravelly soils of arroyos, drainage channels, and depressions in meadows or rock crevices. Elevations ranges between 3,900 and 8,530 ft.	×		
Narrow-leaved cottonwood	<i>Populus angustifolia</i>	CA-S2	Occurs in upland riparian forest habitats at elevations between 3,900 and 5,900 ft.	×	×	×
Narrow-leaved psorothamnus	<i>Psorothamnus fremontii</i> var. <i>attenuates</i>	CA-S2	Occurs on volcanic substrates of slopes, flats, and canyons within Sonoran desertscrub communities at elevations between 1,100 and 3,000 ft.	×	×	×
Narrow-leaved yerba santa	<i>Eriodictyon angustifolium</i>	CA-S2	Restricted to the New York and Granite Mountains in California. Occurs in washes and slopes within pinyon-juniper woodland habitats at elevations between 4,900 and 6,200 ft.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Narrow-stem gilia	<i>Gilia stenothyrsa</i>	BLM-S; CO-S1	Known in Mesa and Rio Blanco Counties in Colorado and also in Utah. Inhabits open areas of hills of pinyon-juniper, salt desert shrub, sagebrush, and mountain-mahogany communities from 5,000 to 9,300 ft in elevation.	×		
Naturita milkvetch	<i>Astragalus naturitensis</i>	BLM-S; CO-S2	Known in Colorado, New Mexico, and Utah. Inhabits cracks and ledges of sandstone cliffs within pinyon-juniper woodland at elevations between 1,650 and 2,050 ft.	×	×	
Navajo mountain phlox	<i>Phlox cluteana</i>	AZ-S2	Known from the mountains along the Arizona-Utah border and adjacent northwestern New Mexico. Occurs in open ponderosa pine forests on flat to gentle mountain slopes with light to heavy shade. Elevations range between 6,000 and 10,400 ft.	×		
Needle Mountains milkvetch	<i>Astragalus eurylobus</i>	BLM-S; FWS-SC; NV-S2	Occurs on gravel washes and sandy soils in alkaline desert and arid grasslands at elevations between 4,250 and 6,250 ft.	×	×	×
Nevada dune beardtongue	<i>Penstemon arenarius</i>	BLM-S; FWS-SC; NV-S2	Endemic to western Nevada. Dependent on sand dunes or deep sand occurring on deep, loose, sandy soils of valley bottoms, aeolian deposits, and dune skirts, often in alkaline areas, sometimes on road banks and other recovering disturbances crossing such soils, in shadscale communities.	×	×	×
Nevada oryctes	<i>Oryctes nevadensis</i>	BLM-S; NV-S2	Range is Nevada and California in sand dunes or deep sand of washes and valley flats. Elevation is between 3,900 and 5,960 ft.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Nevada willowherb	<i>Epilobium nevadense</i>	BLM-S; FWS-SC; NV-S2; UT-S1	Known from eastern Nevada and western Utah. Occurs in pinyon-juniper woodlands and oak/mountain mahogany communities, on talus slopes and rocky limestone outcrops. Elevation ranges between 5,000 and 8,800 ft.	×	×	×
Nevin's barberry	<i>Berberis nevinii</i>	ESA-E; BLM-S; CA-E; CA-S2	Endemic to California in sandy or gravelly chaparral, cismontane woodland, coastal scrub, and riparian scrub. Occurs between 900 and 2,700 ft in elevation.	×		
New Mexico beardtongue	<i>Penstemon neomexicanus</i>	FWS-SC; NM-SC	Endemic to south-central New Mexico from the Capitan and Sacramento Mountains. Occurs on wooded slopes or open glades in ponderosa pine or other coniferous forests. Elevation ranges between 6,000 and 9,000 ft.	×	×	
New Mexico cliff fern	<i>Woodsia neomexicana</i>	CO-S2	Inhabits cliffs and rocky slopes usually on sandstone or igneous substrates. Elevations range between 7,875 and 11,500 ft.	×	×	×
New Mexico milkvetch	<i>Astragalus neomexicanus</i>	FWS-SC; NM-SC	Endemic to south-central New Mexico primarily from the Sacramento Mountains. Occurs on dry hillsides, pinyon-juniper woodlands, or ponderosa pine forests at elevations between 6,850 and 8,450 ft.	×	×	
New Mexico rock daisy	<i>Perityle staurophylla</i> var. <i>staurophylla</i>	BLM-S; FWS-SC; NM-SC	Endemic to south-central New Mexico. Occurs in crevices of limestone cliffs and boulders at elevations between 4,900 and 7,000 ft.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
New York Mountains cats'-eye	<i>Cryptantha tumulosa</i>	NV-S2	Known from California and Nevada. Occurs on gravelly or clay, granitic or carbonate substrates within Mojave desertscrub, creosotebush scrub, and pinyon-juniper woodland communities. Elevation ranges between 4,500 and 9,900 ft.	×	×	×
Nichol turk's head cactus	<i>Echinocactus horizontalonius</i> var. <i>nicholii</i>	ESA-E; AZ-HS; AZ-S2	Only three populations are known in Pima and Pinal Counties in Arizona, and one in Sonora, Mexico. In habitats with open vegetation, few trees, and scattered shrubs at elevations between 2,000 and 3,600 ft.	×	×	
Nodding rockdaisy	<i>Perityle cernua</i>	BLM-S; FWS-SC; NM-SC; NM-S2	Endemic to the Organ Mountains in Doña Ana County, New Mexico. Occurs on volcanic or igneous cliffs at elevations between 5,000 and 8,800 ft.	×	×	
North Park bugseed	<i>Corispermum navicula</i>	BLM-S; CO-S1	Endemic to the North Sand Dunes in Jackson County, Colorado.	×		
North Park phacelia	<i>Phacelia formosula</i>	ESA-E; CO-S1	Known in Jackson and Larimer Counties, Colorado. Grow on steep, sparsely vegetated, erodible slopes of ravines.	×		
Northern moonwort	<i>Botrychium pinnatum</i>	CO-S1	Inhabits grassy slopes, stream banks, and woodlands at elevations below 8,200 ft.	×	×	×
Northern twayblade	<i>Listera borealis</i>	CO-S2	In moist, rich humus of mossy spruce-dominant or mixed hardwood forests and swamps. Prefers banks of cold streams fed by melting snow with high acidic soils at elevations between 8,700 and 10,800 ft.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
One-leaflet torrey milkvetch	<i>Astragalus calycosus</i> var. <i>monophyllidius</i>	NV-S2	Known from Nevada and Utah. Utilizes areas having dry, ashy-sand, tuffaceous sediments in drainage bottoms and lower to upper slope and crest positions. Typically occurs on southern and western exposures within open juniper, big sagebrush communities. Elevation ranges between 5,350 and 7,500 ft.	×	×	
Orcutt's linanthus	<i>Linanthus orcuttii</i>	BLM-S; CA-S2; FWS-SC	Inhabits chaparral and lower montane coniferous forests in gravelly clearings and disturbed open areas. Elevation ranges between 3,280 and 6,550 ft.	×		
Orcutt's pincushion cactus	<i>Escobaria orcuttii</i>	NM-E; NM-S2	Inhabits cracks in limestone or in rocky soils of broken mountainous terrain in Chihuahuan desertscrub, desert grassland, and oak woodlands at elevations between 5,200 and 6,000 ft.	×	×	
Orcutt's woody-aster	<i>Xylorhiza orcuttii</i>	BLM-S; CA-S2	Inhabits Sonoran desertscrub, often in washes of desert canyons on rocky substrates. Also occurs on slopes and bottoms of ravines. Elevation ranges between 875 and 1,200 ft (265 and 365 m). Known only to occur in Imperial and San Diego Counties, California.	×		
Organ Mountains evening-primrose	<i>Oenothera organensis</i>	BLM-S; FWS-SC; NM-SC; NM-S2	Endemic to the Organ Mountains in Doña Ana County, New Mexico. Inhabits seeps, springs, and colluvium substrates in the bottom of drainages in montane scrub and pinyon-juniper woodland communities. Elevation ranges between 5,700 and 7,600 ft.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Organ Mountains giant-hyssop	<i>Agastache pringlei</i> var. <i>verticillata</i>	FWS-SC; NM-SC; NM-S2	Endemic to the Organ Mountains in southern New Mexico. Occurs on humus-covered volcanic talus and boulders at the bases of steep cliffs in coniferous woodlands. Elevation ranges between 5,900 and 7,500 ft.	×		
Organ Mountains paintbrush	<i>Castilleja organorum</i>	BLM-S; FWS-SC; NM-SC	Endemic to the Organ Mountains in Doña Ana County, New Mexico. Inhabits open to partly shaded montane slopes and rocky canyons in pinyon-juniper woodlands or montane coniferous forests at elevations between 7,000 and 8,000 ft.	×		
Organ Mountains pincushion cactus	<i>Escobaria organensis</i>	BLM-S; NM-E; FWS-SC; NM-S2	Endemic to the Franklin and Organ Mountains in Doña Ana County, New Mexico. Inhabits granite and limestone substrates in desertscrub and pinyon-juniper woodlands at elevations between 4,400 and 8,530 ft.	×		
Organ pipe cactus	<i>Stenocereus thurberi</i>	AZ-SR	Endemic to Arizona and northern Mexico. Widespread in the Sonoran Desert, occurring on hills and bajadas below 3,700 ft. Found on south- to southeast-facing slopes on the Organ Pipe Cactus National Monument and elsewhere throughout the Sonoran Desert. Associated with upland Sonoran desertscrub plant communities.	×	×	
Orocopia sage	<i>Salvia greatae</i>	BLM-S; CA-S2	Inhabits creosotebush scrub communities and dry washes at elevations less than 2,600 ft.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Osterhout cat's-eye	<i>Oreocarya osterhoutii</i>	BLM-S; CO-S2	Endemic to the Navajo Basin and occurs in Colorado, Utah, and possibly Arizona. Occurs in dry barren areas with decomposed sandstone or in dry sandy soil in desert, blackbrush, mixed desert shrub, oak brush, salt bush, and pinyon-juniper communities at elevations between 4,500 and 6,600 ft.	×		
Ostler's ivesia	<i>Ivesia shockleyi ostleri</i>	BLM-S; FWS-SC; UT-S1	Endemic to the Wah Wah Mountains and Needle Range of western Beaver County, Utah. Occurs in pinyon-juniper and adjacent ponderosa pine woodland communities in crevices of quartzite outcrops at elevations between 6,500 and 8,000 ft.	×		
Ostler's pepper-grass	<i>Lepidium ostleri</i>	ESA-UR; BLM-S; UT-S1	Endemic to the San Francisco Mountains in Beaver County, Utah. Occurs in pinyon-juniper communities in crevices in limestone outcrops at elevations between 5,800 and 6,800 ft.	×		
Pagosa bladderpod	<i>Lesquerella pruinoso</i>	CO-S2	Primarily found in exposed gray clay barrens and Mancos slate or shale meadows with slopes of approximately 15% and a high level of disturbance at elevations between 6,890 and 8,800 ft.	×		
Pagosa skyrocket	<i>Ipomopsis polyantha</i>	ESA-C; BLM-S; CO-S1	Known from Archuleta County in Colorado, where it grows on rocky clay soils, typically where soil has been disturbed along roads, in the southern San Juan Mountains. Elevation is between 6,800 and 7,200 ft.	×		
Pahrump Valley buckwheat	<i>Eriogonum bifurcatum</i>	BLM-S (CA, NV); NV-S2	Range includes Clark and Nye Counties in Nevada; also in California. Inhabits barren, saline, or heavy clay soils on dry playa margins, shore terraces, and stabilized sand dunes at elevations of 2,300 to 2,800 ft.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Pahute green gentian	<i>Frasera pahutensis</i>	FWS-SC	Endemic to Nye County, Nevada, in montane habitats (elevations between 7,000 and 8,400 ft). Occurs on flat to very gentle slopes in relatively deep, stable, sandy or sandy-rocky soils on or near protected (wooded or north-sloping) exposures or on more open, south-sloping exposures at higher elevations, mostly derived from rhyolitic, granitoid, or andesitic parent materials within pinyon-juniper and lower montane scrub communities.	×		
Pahute Mesa beardtongue	<i>Penstemon pahutensis</i>	BLM-S; FWS-SC	Restricted to southeastern California and Nye County, Nevada, where it is locally abundant. Occurs in loose soil and rock crevices among boulders in pinyon-juniper woodlands and sagebrush shrubland at elevations between 5,400 and 7,500 ft.	×		
Pale blue-eye-grass	<i>Sisyrinchium pallidum</i>	BLM-S; CO-S2	Endemic to central Colorado in the Pike and San Isabel National Forests. Occurs in wet, poorly drained meadows, stream banks, and roadside ditches where water is available through the early growing season.	×		
Pale moonwort	<i>Botrychium pallidum</i>	CO-S2	Inhabits open exposed hillsides, burned or cleared areas, or old mining situations at elevations between 9,800 and 10,600 ft.	×	×	×
Palmer's mariposa-lily	<i>Calochortus palmeri</i> var. <i>palmeri</i>	BLM-S; CA-S2; FWS-SC	Occurs in moist to wet meadows or on moist grassy knolls. Also found along creeks or swales and within chaparral, pinyon woodlands, and pine forest communities. Elevation ranges between 3,280 and 7,850 ft.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Panamint Mountains bedstraw	<i>Galium hilendiae</i> ssp. <i>carneum</i>	NV-S1	Restricted to southeastern California and western Nevada. Occurs on rocky or gravelly substrates of rocky slopes or open flats within Mojave desertscrub and pinyon-juniper woodlands at elevations between 4,000 and 11,200 ft.	×	×	×
Parachute penstemon	<i>Penstemon debilis</i>	ESA-C; BLM-S; CO-S1	Endemic to Garfield County, Colorado, where it grows on oil shale outcrops at elevations between 7,800 and 9,200 ft.	×		
Paradox breadroot	<i>Pediomelum aromaticum</i>	BLM-S; CO-S2	Known in Arizona, Colorado, and Utah where it grows in adobe hills.	×		
Parish's alkali grass	<i>Puccinellia parishii</i>	BLM-S; CA-S1; AZ-HS; FWS-SC; AZ-S2; NM-E; NM-S1	Known in five sites in California, Nevada, Arizona, and New Mexico. Inhabits meadows, seeps, and moist areas near springs on alkaline soils at elevations between 2,300 and 7,350 ft.	×	×	
Parish's alumroot	<i>Heuchera parishii</i>	BLM-S; CA-S2	Inhabits alpine and lower montane coniferous forests on rocky carbonate substrates. Elevation ranges between 5,900 and 12,450 ft.	×		
Parish's brittle scale	<i>Atriplex parishii</i>	BLM-S; CA-S1; FWS-SC	Restricted to chenopod scrub, playas, and vernal pools in southern California. Occurs at elevations between 100 and 6,200 ft.	×	×	
Parish's checkerbloom	<i>Sidalcea hickmanii</i> ssp. <i>parishii</i>	BLM-S; CA-S1	Inhabits chaparral communities and montane coniferous forests at elevations between 3,280 and 8,200 ft.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Parish's club-cholla	<i>Grusonia parishii</i>	CA-S2	Inhabits silty, sandy, or gravelly flats, dunelets, and hills within Joshua tree woodlands, creosotebush scrub, and desertscrub communities. Elevation ranges between 100 and 5,000 ft.	×	×	×
Parish's daisy	<i>Erigeron parishii</i>	ESA-T; BLM-S; CA-S2	Endemic to California in Riverside and San Bernardino Counties. Restricted to carbonate substrates in the San Bernardino Mountains in southern California. Occurs on dry rocky slopes and outwash plains. Sometimes found on sites underlain by granite, usually with an overlying wash of limestone materials. Elevation ranges between 3,280 and 6,560 ft.	×		
Parish's desert-thorn	<i>Lycium parishii</i>	CA-S2	Regionally endemic in southeastern California, occurring on coastal sage scrub, creosotebush scrub, and Sonoran desertscrub communities. Elevation ranges between 1,000 and 3,300 ft.	×		
Parish's onion	<i>Allium parishii</i>	BLM-S; AZ-SR; AZ-S1	Known from western Arizona and southeastern California. Inhabits open rocky and sandy slopes in the Mohave Desert. Primarily known from the Kofa Mountains in Yuma County, Arizona. Elevation ranges between 2,720 and 2,900 ft.	×		
Parish's phacelia	<i>Phacelia parishii</i>	BLM-S; CA-S1; NV-S2; FWS-SC	Known from Arizona, California, and Nevada. An aquatic/wetland dependent species, occurring in moist to superficially dry, open, flat, mostly barren, salt-crusted silty-clay soils. Generally known to occur on valley bottoms, lake deposits, and playa edges. Often in close proximity to seepage areas surrounded by saltbush scrub vegetation. Elevation ranges between 2,200 and 5,950 ft.	×	×	×

**TABLE J.6-1 (Cont.)**

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Parish's popcorn-flower	<i>Plagiobothrys parishii</i>	BLM-S; CA-S1	Known from Rabbit Springs in San Bernardino County, California. Inhabits Joshua tree woodlands on alkaline mesic soils at elevations between 2,600 and 4,900 ft.	×		
Parish's rockcress	<i>Arabis parishii</i>	BLM-S; CA-S2; FWS-SC	Endemic to the San Bernardino Mountains in southern California. Inhabits pinyon-juniper forests and montane coniferous forests on mostly pebble-clay substrates. Elevation ranges between 5,800 and 9,800 ft.	×		
Parish's yampah	<i>Perideridia parishii</i> ssp. <i>parishii</i>	CA-S2	Inhabits meadows, seeps, lodgepole forest, red fir forest, yellow pine forest, as well as upper and lower montane coniferous forests. Elevation ranges between 4,800 and 9,800 ft.	×		
Parry's crazy-weed	<i>Oxytropis parryi</i>	CO-S1	Inhabits gravelly, calcareous soil on exposed ridgetops in the alpine zone. Occurs within the analysis area at elevations between 8,200 and 10,200 ft.	×	×	×
Parry's spurge	<i>Chamaesyce parryi</i>	CA-S1	Restricted to the vicinity of Kelso, California. Inhabits desert dunes, creosotebush scrub, and Mojave desertscrub at elevations between 1,300 and 2,400 ft.	×		
Payson lupine	<i>Lupinus crassus</i>	BLM-S; CO-S2	Endemic to Montrose and Gunnison Counties in Colorado. Occurs in pinyon-juniper woodland on sparsely vegetated soil at elevations between 5,000 and 5,800 ft.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Peck sedge	<i>Carex peckii</i>	CO-S1	Inhabits calcareous soils on dry to mesic slopes in partial shade within rich, deciduous, or mixed deciduous-coniferous woodlands; open woods; bases of slopes; or full sun on exposed outcrops. Occurs at elevations below 6,600 ft.	×	×	×
Pecos sunflower	<i>Helianthus paradoxus</i>	ESA-T; NM-E; NM-S2	Inhabits saturated saline soils of desert wetlands at elevations between 3,300 and 6,600 ft.	×	×	
Pedate checker-mallow (bird-foot checkerbloom)	<i>Sidalcea pedata</i>	ESA-E; BLM-S; CA-E; CA-S1	Endemic to California in San Bernardino County. Known from fewer than 20 occurrences in the San Bernardino Mountains in southern California. Inhabits moist meadows and seeps on mesic soils and pebble plains at elevations between 5,900 and 8,200 ft.	×		
Peebles Navajo cactus	<i>Pediocactus peeblesianus</i> var. <i>peeblesianus</i>	ESA-E; AZ-HS; AZ-S1	Endemic to Arizona in the Little Colorado River watershed at 5,100 to 5,600 ft in elevation. Inhabits gravelly alluvium on gently sloping hills to flat hilltops, in desertscrub and grassland.	×	×	
Peirson's milkvetch	<i>Astragalus magdalenae</i> var. <i>peirsonii</i>	ESA-T; BLM-S; CA-E; CA-S2	Currently known to occur along the north and west flanks of the Algodones Dunes in California. Found on the slopes of mobile sand dunes in the Sonoran desertscrub plant community. It most often grows in conically shaped hollows on the leeward side of the dunes. Elevation ranges between 164 and 820 ft.	×	×	
Peirson's pincushion	<i>Chaenactis carphoclinia</i> var. <i>peirsonii</i>	BLM-S; CA-S1	Known only from the eastern Santa Rosa Mountains. Inhabits Sonoran desertscrub communities at elevations below 2,000 ft.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Penland beardtongue	<i>Penstemon penlandii</i>	ESA-E; CO-S1	Endemic to Grand County, Colorado, where it grows in alkaline clays containing selenium. Preferred habitat is runoff channels.	×		
Philadelphia fleabane	<i>Erigeron philadelphicus</i>	CO-S1	Inhabits disturbed sites, low prairies, and stream banks with open and moist conditions.	×	×	×
Piceance bladderpod	<i>Lesquerella parviflora</i>	BLM-S; CO-S2	Endemic to shale barrens in Rio Blanco, Garfield, and Mesa Counties, Colorado. Inhabits ledges and slopes of canyons in open areas of pinyon-juniper communities.	×		
Piceance twinpod	<i>Physaria obcordata</i>	ESA-T; CO-S1	Endemic to the Piceance Basin, Rio Blanco County, Colorado. Found in white oil-shale.	×		
Pima indian mallow	<i>Abutilon parishii</i>	BLM-S; AZ-SR; FWS-SC; AZ-S2	Mesic and riparian areas on hillsides, cliff bases, canyon bottoms, rocks and boulders, and washes. Elevation ranges between 1,720 and 4,900 ft.	×	×	
Pima pineapple cactus	<i>Coryphantha scheeri</i> var. <i>robustispina</i>	ESA-E; AZ-HS; AZ-S2	Inhabits ridges in semidesert grassland and alluvial fans in Sonoran desertscrub at elevations of 2,300 to 5,000 ft. Range is south-central Arizona and north-central Sonora, Mexico.	×	×	
Pine Hill ceanothus	<i>Ceanothus roderickii</i>	ESA-E; BLM-S; CA-S2	Endemic to California in El Dorado County. Occurs in chaparral and cismontane woodland at elevations between 800 and 2,070 ft.	×		
Pine Hill flannelbush	<i>Fremontodendron decumbens</i>	ESA-E; BLM-S; CA-S1	California endemic occurring in rocky areas of chaparral and cismontane woodland. Elevation ranges between 1,390 and 2,490 ft.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Pine Nut Mountains mousetails	<i>Ivesia ptyocharis</i>	BLM-S; NV-S2	Endemic to the Pine Nut Mountains, Douglas County, Nevada. Associated with springs, moist drainages, or ephemeral ponds at elevations from 6,990 to 8,550 ft.	×		
Pine Valley goldenbush	<i>Haplopappus crispus</i>	BLM-S; FWS-SC; UT-S2	Known only from the Pine Valley Mountains in Washington County, Utah. Occurs in ponderosa pine, spruce-fir, and aspen communities at elevations between 8,000 and 10,000 ft.	×		
Pink fairy-duster	<i>Calliandra eriophylla</i>	CA-S2	Occurs on sandy or rocky substrates in creosote and desertscrub communities. Elevation ranges between 390 and 4,900 ft.	×	×	×
Pinyon rockcress	<i>Arabis dispar</i>	CA-S2	Restricted to the southern High Sierra Nevada and northern San Bernardino Mountains east of the Sierra Nevada. Occurs on granitic and gravelly substrates on loose slopes or compact talus. Elevation ranges between 3,900 and 8,300 ft.	×		
Pioche blazingstar	<i>Mentzelia argillicola</i>	BLM-S; NV-S1	Endemic to Nevada. Occurs on dry, soft, silty clay soils on knolls and slopes with sparse vegetation consisting mainly of <i>Artemisia pygmaea</i> , <i>Eriogonum nummulare</i> , <i>Gutierrezia sarothrae</i> , and <i>Salvia dorrii</i> var. <i>dorrii</i> .	×	×	×
Plain thistle	<i>Cirsium inornatum</i>	FWS-SC; NM-SC	Known only from the Sacramento Mountains in southern New Mexico. Inhabits mountain meadows and roadsides at elevations above 7,500 ft.	×		
Plank's catchfly	<i>Silene plankii</i>	BLM-S; FWS-SC; NM-SC; NM-S2	Known from New Mexico and western Texas. Inhabits volcanic cliffs and rocky outcrops at elevations between 5,000 and 9,200 ft.	×		

**TABLE J.6-1 (Cont.)**

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Plummer's mariposa-lily	<i>Calochortus plummerae</i>	BLM-S; FWS-SC	Endemic to southern California. Inhabits chaparral, cismontane woodlands, coastal scrub, and montane coniferous forests on rocky substrates. Elevation ranges between 330 and 5,550 ft.	×		
Porsild's whitlow-grass	<i>Draba porsildii</i>	CO-S1	Moist to sometimes drier sites with rocky or gravelly substrates in limestone or shale talus, scree, and grassy meadows; along ridges and slopes; and in summits within the alpine zone at elevations between 9,600 and 13,000 ft.	×	×	×
Prairie violet	<i>Viola pedatifida</i>	CO-S2	Occurs in rocky sites within prairies, open woodlands, and forest openings at elevations between 5,800 and 8,800 ft.	×	×	×
Prairie wedge grass	<i>Sphenopholis obtusata</i>	CA-S2	Inhabits cismontane woodland, foothill woodland, stream banks, ponds, and mesic meadows and seeps. Elevation ranges between 990 and 6,500 ft.	×	×	×
Providence Mountains lotus	<i>Lotus argyraeus</i> var. <i>notitius</i>	BLM-S; CA-S1	Restricted to the Providence Mountains in San Bernardino County, California. Occurs in pinyon-juniper woodlands at elevations between 3,900 and 6,550 ft.	×		
Pueblo goldenweed	<i>Oonopsis puebloensis</i>	CO-S2	Occurs on barren shale outcrops in sparse shrublands or pinyon-juniper woodlands at elevations between 4,800 and 5,500 ft. Substrates are derived from the Smoky Hill Member of the Niobrara Formation.	×		
Purple-nerve cymopterus	<i>Cymopterus multinervatus</i>	CA-S2	Occurs on sandy or gravelly slopes within desertscrub, Joshua tree woodland, and pinyon-juniper woodland communities. Elevation ranges between 2,600 and 5,900 ft.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Pygmy pussypaws	<i>Calyptridium pygmaeum</i>	BLM-S; CA-S2	Endemic to the High Sierra Nevada and the San Bernardino Mountains. Inhabits dry sandy or gravelly soils in upper montane and subalpine coniferous forests. Elevation ranges between 6,230 and 11,475 ft.	×		
Railroad Valley globemallow	<i>Sphaeralcea caespitosa</i> var. <i>williamsiae</i>	BLM-S; NV-S2	Range is Nye County, Nevada.	×	×	
Red Hills vervain	<i>Verbena californica</i>	ESA-T; BLM-S; CA-T; CA-S2	Endemic to California. Known from 11 occurrences in the Red Hills in Tuolumne County. Inhabits mesic, usually serpentinite seeps or creeks within cismontane woodland and valley and foothill grassland at elevations between 850 and 1,310 ft.	×		
Red Mountain stonecrop	<i>Sedum eastwoodiae</i>	ESA-C; BLM-S; CA-S1	California endemic with four occurrences on Red Mountain in Mendocino County, at elevations near 2,000 to 4,000 ft. Inhabits lower montane coniferous forest.	×		
Remote rabbitbrush	<i>Chrysothamnus eremobius</i>	BLM-S; NV-S1	Endemic to Clark and Lincoln Counties, Nevada. Known from the Sheep and Pintwater Ranges on crevices or rubble of north-facing carbonate cliffs at elevations between 4,850 and 6,400 ft.	×		
Retrorse sedge	<i>Carex retrorsa</i>	CO-S1	Occurs in perennially wet areas, with a strong preference for banks along small channels, small to mid-size depressional wetlands, open mudflats at pond margins, and surface drying mud. Occurs at elevations between 5,000 and 10,000 ft.	×	×	×

**TABLE J.6-1 (Cont.)**

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Rhizome fleabane	<i>Erigeron rhizomatus</i>	ESA-T; NM-E; NM-S2	Inhabits nearly barren detrital clay hillsides with soils derived from shales of Chinle or Baca formations. Occurs most often on north- or east-facing slopes in open pinyon-juniper woodlands at elevations between 7,300 and 8,000 ft.	×	×	
Ripley biscuitroot	<i>Cymopterus ripleyi</i> var. <i>ripleyi</i>	FWS-SC; NV-S2	Restricted to southeastern California and western Nevada. A sand-dune-dependent species occurring on deep loose, sandy soils of stabilized dunes, dune skirt areas, aeolian deposits, and alluvial drainage areas at elevations between 4,400 and 6,000 ft.	×	×	×
Ripley's milkvetch	<i>Astragalus ripleyi</i>	BLM-S; CO-S2	Endemic to Conejos County, Colorado, and Taos and Rio Arriba Counties in New Mexico. In Colorado, the habitat is ponderosa pine, pinyon-juniper woodlands, and mixed conifer forest at elevations above 8,000 ft.	×	×	×
Roan Cliffs blazing star	<i>Mentzelia rhizomata</i>	BLM-S; CO-S2	Endemic to Garfield County, Colorado. Known from steep, shaley talus slopes of the Roan Plateau.	×		
Robison's monardella	<i>Monardella robisonii</i>	BLM-S; CA-S2	Known from fewer than 20 occurrences in Riverside and San Bernardino Counties, California. Inhabits pinyon-juniper woodlands at elevations below 4,900 ft.	×		
Rock phacelia	<i>Phacelia petrosa</i>	BLM-S; NV-S2	Known from Arizona, Nevada, and Utah. Occurs on dry limestone and volcanic talus slopes of foothills, washes, and gravelly canyon bottoms on substrates derived from calcareous material. Inhabits mixed desertscrub, creosotebush, and blackbrush communities at elevations between 2,500 and 5,800 ft.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Rock purpusia	<i>Ivesia arizonica</i> var. <i>saxosa</i>	BLM-S; NV-S1	Endemic to southern Nevada. It inhabits crevices of cliffs and boulders on volcanic substrates in pinyon-juniper communities at elevations between 4,900 and 6,900 ft.	×	×	×
Rock purslane	<i>Calandrinia ambigua</i>	AZ-S2	Limited distribution in California. Coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, valley and foothill grasslands, and margins of vernal pools. Elevation ranges from 0 to 1,425 ft. Populations in California have no federal or state status or rank.	×		
Rock sandwort	<i>Minuartia stricta</i>	CO-S1	Inhabits moist, granitic gravels, sedge meadows, heath, alpine, or arctic tundra. Elevation ranges from 300 to 12,500 ft.	×	×	×
Rockcress draba	<i>Draba globosa</i>	CO-S1	Occurs in Alpine meadows, granitic talus slopes, and rock crevices at elevations between 11,500 and 12,500 ft.	×		
Rock-loving aletes	<i>Neoparrya lithophila</i>	BLM-S; CO-S2	Endemic to south-central Colorado on igneous rock outcrops on north-facing cliffs and ledges. Found on north-facing cliffs and ledges within pinyon-juniper woodlands at elevations greater than 7,000 ft.	×	×	×
Rock-tansy	<i>Sphaeromeria capitata</i>	BLM-S; CO-S1	Occurs in Wyoming, Colorado, Montana, and Utah in dry, rocky hills at elevations between 4,900 and 7,800 ft.	×		
Rocky Mountain bladderpod	<i>Lesquerella calcicola</i>	CO-S2	Inhabits shale bluffs, limy hillsides, gypseous knolls and ravines, and various calcareous substrates at elevations between 5,000 and 7,500 ft.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Rocky Mountain blazing-star	<i>Liatris ligulistylis</i>	CO-S1	Occurs on dry, rocky slopes, rocky woodlands, gravelly ground in valleys, streamsides, prairies, and open moist sites.	×	×	×
Rollins' cat's-eye	<i>Oreocarya rollinsii</i>	BLM-S; CO-S2	Occurs in Colorado, Wyoming, and Utah on white shale slopes in pinyon-juniper woodlands and cold desert shrubland communities at 5,300 to 5,800 ft in elevation.	×		
Rollins' twinpod	<i>Physaria rollinsii</i>	CO-S2	Regionally endemic to approximately 1,439 mi <sup>2</sup> e in southwestern Colorado. Occurs on granitic talus, open knolls, limestone chiprock, steep slopes, clay banks, and sagebrush, and in close proximity to granite boulders.	×		
Rosy two-tone beardtongue	<i>Penstemon bicolor</i> ssp. <i>roseus</i>	BLM-S; FWS-SC	Known from Arizona, California, and Nevada. Occurs on calcareous, granitic, or volcanic soils in washes, roadsides, scree at outcrop bases, rock crevices, or similar places receiving enhanced runoff, within creosotebush-bursage, blackbrush, and mixed-shrub communities. Elevation ranges between 1,800 and 4,850 ft.	×	×	×
Rough angelica	<i>Angelica scabrida</i>	BLM-S; NV-S2	Endemic to the Spring Mountains in southern Nevada. An aquatic/wetland-dependent species occurring in moist, rocky calcareous drainages, canyon bottoms, or seepy or north-facing slopes over carbonate or sandstone rock in interior chaparral, mountain brush, and montane coniferous forest communities. Elevation ranges between 4,000 and 9,350 ft.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Rough dwarf greasebush	<i>Glossopetalon pungens</i> var. <i>pungens</i>	BLM-S; NV-S2	Endemic to the Spring and Sheep Ranges in southern Nevada, where the species is known from seven occurrences. Inhabits crevices of carbonate cliffs and outcrops, generally avoiding southerly exposures, within pinyon-juniper, mountain mahogany, and montane conifer communities. Elevation ranges between 4,400 and 7,800 ft.	×	×	×
Rough fringemoss	<i>Crossidium seriatum</i>	NV-S2	Known from only eight occurrences in Nevada. Occurs in sandstone and gypsiferous bluffs, outcrops, rock piles, and soils, often protected on the north or east sides of rocks or shrubs, or at bases of bluffs, in the creosotebush-bursage zone at elevations between 1,300 and 2,450 ft.	×	×	×
Roundleaf errazurizia	<i>Errazurizia rotundata</i>	BLM-S; AZ-SR; AZ-S2	Endemic to the Little Colorado River drainage in Coconino and Navajo Counties in Arizona. Also found in Maricopa County. Found on rocky hilltops and ledges with sandy or gravelly soils in the Great Basin desertscrub plant community. Elevation is 4,620 to 5,200 ft.	×	×	
Round-leaf four-o'clock	<i>Oxybaphus rotundifolius</i>	CO-S2	Restricted to barren shale outcrops in sparse shrublands or pinyon-juniper woodlands at elevations between 4,800 and 5,600 ft. Substrate derived from the Smoky Hill Member of the Niobrara Formation.	×	×	
Round-leaved filaree	<i>California macrophylla</i>	BLM-S	Found on clay substrates of valleys and foothill grasslands within montane woodland communities at elevations ranging between 50 and 3,950 ft.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Royal Gorge stickleaf	<i>Mentzelia densa</i>	BLM-S	Narrowly endemic to central Colorado in Chaffee and Fremont Counties. Occurs in dry open sites, such as washes, roadside ditches, and steep rocky slopes. Found on gravelly substrates at elevations between 6,000 and 7,200 ft.	×		
Sacramento groundsel	<i>Senecio sacramentanus</i>	FWS-SC; NM-SC	Known only from the Sacramento and White Mountains in southern New Mexico. Inhabits mountain meadows and aspen glades in lower and upper montane coniferous forests. Elevation ranges between 8,000 and 11,000 ft.	×	×	
Sacramento Mountain fleabane	<i>Erigeron rybius</i>	FWS-SC; NM-SC	Known only from the Sacramento and White Mountains in southern New Mexico. Inhabits mountain meadows and forest openings in lower and upper montane coniferous forests. Elevation ranges between 7,000 and 9,200 ft.	×	×	
Sacramento prickly-poppy	<i>Argemone pleiacantha</i> ssp. <i>pinnatisecta</i>	ESA-E; NM-E; NM-S2	Endemic to the Sacramento Mountains in Otero County, New Mexico. Inhabits loose, gravelly soils of open disturbed sites in canyon bottoms, on slopes, and along roadsides. Elevation ranges between 4,200 and 7,100 ft.	×	×	
Sacramento Mountains thistle	<i>Cirsium vinaceum</i>	ESA-T; NM-E; NM-S2	Endemic to the Sacramento Mountains in Otero County, New Mexico. Inhabits wet soils at springs, seeps, and along streams in meadows or forest margins at elevations between 7,500 and 9,500 ft.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Saguaro cactus	<i>Carnegieia gigantea</i>	CA-S1	Regionally endemic, found only in the Sonoran Desert. Occurs in low numbers along the Colorado River from the Whipple Mountains to Laguna Dam. Inhabits rocky substrates within Sonoran desertscrub and creosotebush scrub communities at elevations between 160 and 4,900 ft.	×	×	×
Saiya	<i>Amoreuxia gonzalezii</i>	AZ-HS; FWS-SC; AZ-S1	Found in the Santa Rita Mountains in Pima and Santa Cruz Counties in Arizona, where it grows on rocky limestone hillsides at elevations of 4,200 to 4,600 ft.	×	×	
Salt Spring checkerbloom	<i>Sidalcea neomexicana</i>	CA-S2	Occurs on alkaline or mesic substrates within riparian wetlands, marshes, springs, chaparral, coastal scrub, coniferous forest, desertscrub, and playas habitats. Elevation ranges between 50 and 5,000 ft.	×	×	×
San Benito evening-primrose	<i>Camissonia benitensis</i>	ESA-T; BLM-S; CA-S1	Endemic to California. Known only from the New Idria area in Fresno and San Benito Counties. Inhabits clay or gravelly chaparral, cismontane woodland, and valley and foothill grassland at elevations between 1,970 and 4,200 ft.	×		
San Bernardino aster	<i>Symphotrichum defoliatum</i>	BLM-S	Known primarily from the San Bernardino Mountains in southern California. Inhabits montane coniferous forests, moist meadows and seeps, marshes and swamps, and valley foothill habitats at elevations below 6,500 ft.	×		
San Bernardino blue grass	<i>Poa atropurpurea</i>	ESA-E; BLM-S; CA-S2	Inhabits edges of moist meadows and seeps in the San Bernardino, Palomar, and Laguna Mountains of southern California. Elevation ranges between 4,600 and 8,200 ft.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
San Bernardino gilia	<i>Gilia leptantha</i> ssp. <i>leptantha</i>	BLM-S; CA-S2	Known only from the San Bernardino Mountains in southern California. Inhabits lower montane coniferous forests on sandy or gravelly substrates at elevations between 4,900 and 8,500 ft.	×		
San Bernardino Mountains bladderpod	<i>Lesquerella kingii</i> ssp. <i>bernardina</i>	ESA-E; BLM-S; CA-S1	Occurs on dolomite substrates, typically on open, gentle to moderate slopes within pine-juniper woodlands and fir forests at elevations between 6,900 and 8,850 ft. Soils typically have little accumulation of organic material.	×		
San Bernardino Mountains dudleya	<i>Dudleya abramsii</i> ssp. <i>affinis</i>	BLM-S; CA-S2; FWS-SC	Restricted to the San Bernardino Mountains in southern California. Inhabits upper montane coniferous forests and pinyon-juniper woodlands on granitic, quartzite, or carbonate soils. Elevation ranges between 4,100 and 8,500 ft.	×		
San Bernardino Mountains monkeyflower	<i>Mimulus exiguus</i>	BLM-S; CA-S2; FWS-SC	Known only from the San Bernardino Mountains in southern California. Inhabits upper montane coniferous forests, seeps, and wet meadows on mesic clay substrates. Elevation ranges between 5,900 and 7,700 ft.	×		
San Bernardino Mountains owl's-clover	<i>Castilleja lasiorhyncha</i>	BLM-S; CA-S2; FWS-SC	Known primarily from the San Bernardino Mountains of southern California. Inhabits meadows, pebble plains, and upper montane coniferous forests at elevations between 4,275 and 7,875 ft.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
San Bernardino ragwort	<i>Packera bernardina</i>	BLM-S; CA-S2	Known from fewer than 20 occurrences in the San Bernardino Mountains of southern California. Inhabits open areas with coniferous forests, including wet meadows, dry rocky slopes, and pebble plains habitats. Elevation ranges between 5,900 and 7,550 ft.	×		
San Bernardino rockcress	<i>Arabis breweri</i> var. <i>pecuniaria</i>	BLM-S; CA-S1; FWS-SC	Known from only two extant locations in San Bernardino County, California. Inhabits rocky substrates in subalpine coniferous forests at elevations between 8,900 and 10,500 ft.	×		
San Diego ambrosia	<i>Ambrosia pumila</i>	ESA-E; BLM-S; CA-S1	Inhabits sandy loam or clay, often in disturbed areas in chaparral, coastal scrub, valley and foothill grassland, and vernal pools at elevations lower than 1,400 ft.	×		
San Joaquin Valley orcuttgrass	<i>Orcuttia inaequalis</i>	ESA-T; BLM-S; CA-E; CA-S2	Endemic to California. Inhabits vernal pools at elevations lower than 2,475 ft.	×		
San Joaquin woolly threads	<i>Monolopia congdonii</i>	ESA-E; BLM-S	California endemic that occurs in chenopod scrub, and sandy valley and foothill grassland at elevations lower than 2,600 ft.	×		
San Pedro River wild buckwheat	<i>Eriogonum terrenatum</i>	BLM-S; AZ-S1	Endemic to Arizona, where it is known in only two locations at elevations of 3,520 to 3,914 ft. In Pima County, it is restricted to clayey outcrops and in Cochise County, it occurs on eroded, clay slopes and flats.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
San Rafael milkvetch	<i>Astragalus rafaensis</i>	BLM-S; CO-S1	Endemic to the Navajo Basin. Inhabits banks of sandy, clay gulches, in pockets at the base of sandstone outcrops, or among boulders in dry watercourses. Elevation between 4,500 and 5,300 ft.	×		
Sand evening-primrose	<i>Camissonia arenaria</i>	CA-S2	Occurs on sandy washes and rocky slopes within Sonoran desertscrub communities at elevations below 3,000 ft.	×	×	×
Sand flat milkvetch	<i>Astragalus insularis</i>	AZ-S2	Known from Arizona and California. Inhabits desert dunes and sandy washes at elevations below 1,000 ft.	×		
Sand food	<i>Pholisma sonora</i>	BLM-S; AZ-HS; AZ-S1; CA-S2; FWS-SC	Inhabits Sonoran sand dune habitats at elevations below 650 ft.	×	×	×
Sand prickly-pear cactus	<i>Opuntia arenaria</i>	NM-E; FWS-SC; NM-S2	Known from southern New Mexico, western Texas, and northern Mexico. Inhabits sandy areas, particularly semistabilized sand dunes among open Chihuahuan desertscrub. Often associated with sparse cover of grasses. Elevation ranges between 3,800 and 4,300 ft.	×	×	×
Sandberg pincushion cactus	<i>Escobaria sandbergii</i>	FWS-SC; NM-SC; NM-S2	Known from the San Andres and Fra Cristobal Mountains in Doña Ana and Sierra Counties, New Mexico. Occurs on rocky limestone soils in Chihuahuan desertscrub and open oak and pinyon-juniper woodlands at elevations between 4,200 and 7,400 ft.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Sandhill goosefoot	<i>Chenopodium cycloides</i>	BLM-S; NM-S2	Known from south-central New Mexico as well as southern Colorado and western Texas. Inhabits open sandy areas, frequently along the edges of sand dunes.	×	×	×
Sandstone milkvetch	<i>Astragalus sesquiflorus</i>	BLM-S; CO-S1	Occurs in Colorado, Utah, and Arizona. Inhabits slickrock formations in mixed desert shrub, pinyon-juniper, and ponderosa pine or aspen communities at elevations between 4,800 and 10,000 ft.	×		
Sanicle biscuitroot	<i>Cymopterus ripleyi</i> var. <i>saniculoides</i>	BLM-S; FWS-SC	Endemic to Nevada. Occurs on loose, sandy to gravelly, often somewhat alkaline soils on volcanic tuff deposits and mixed valley alluvium within blackbrush, mixed-shrub, sagebrush, and lower pinyon-juniper communities. Elevation ranges between 3,150 and 6,700 ft.	×	×	×
Santa Cruz beehive cactus	<i>Coryphantha recurvata</i>	AZ-HS	Inhabits alluvial soils of valleys and foothills in desert grassland and oak woodland at elevations of 3,680 to 6,000 ft in southern Arizona and northern Sonora, Mexico.	×	×	
Santa Cruz striped agave	<i>Agave parviflora</i> ssp. <i>parviflora</i>	AZ-HS; FWS-SC	Range is northern Sonora, Mexico, and southern Arizona in Pima and Santa Cruz Counties. Occurs at middle elevations of mountains at 3,560 to 5,200 ft on open rocky or gravelly slopes and ridges, in desert grassland and oak woodland.	×	×	
Santa Fe cholla	<i>Opuntia viridiflora</i>	NM-E; NM-S1	Endemic to Santa Fe County, New Mexico. Inhabits gravelly rolling hills in pinyon-juniper woodlands at elevations between 5,800 and 7,200 ft.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Santa Rosa Mountains leptosiphon	<i>Leptosiphon floribundus</i> ssp. <i>hallii</i>	BLM-S; CA-S1	Endemic to the Santa Rosa Mountains of southern California. Inhabits Sonoran desertscrub and pinyon and juniper woodland communities at elevations between 3,280 and 6,560 ft.	×		
Scaly sandplant	<i>Pholisma arenarium</i>	BLM-S; AZ-HS; AZ-S2	Occupies a variety of habitats, including coastal and inland sand dunes, chaparral, and Sonoran and Mohave Desert habitats at elevations below 900 ft.	×	×	
Scheer cory cactus	<i>Coryphantha scheeri</i> var. <i>uncinata</i>	NM-E; NM-S1	Inhabits rocky hillsides in the Chihuahuan Desert at 4,000-ft elevation.	×	×	
Scheer's pincushion cactus	<i>Coryphantha scheeri</i> var. <i>valida</i>	NM-E; FWS-SC; NM-S2	Known from southern New Mexico in desert grassland and Chihuahuan desertscrub communities, occasionally on rocky benches, washes, or bajadas. Elevation ranges between 3,300 and 3,600 ft.	×	×	
Schlesser pincushion cactus	<i>Sclerocactus schlesseri</i>	BLM-S; NV-P; FWS-SC; NV-S1	Endemic to Lincoln County, Nevada, where it is known to occur within a 134-acre area within the Meadow Valley. Occurs in open, stable, gravelly, or silty soils derived from gypsiferous sediments on mesic microsites on north to east aspects. Elevation ranges between 4,760 and 5,150 ft.	×		
Schott wire lettuce	<i>Stephanomeria schottii</i>	BLM-S; AZ-S2	Endemic to sand dunes of the Gran Desierto region. Occurs on semistabilized sand dunes with creosote, white bursage, and big galleta grass. Elevation ranges between 350 and 800 ft.	×	×	
Selkirk violet	<i>Viola selkirkii</i>	CO-S1	Generally known to occur in moist woods and alder thickets. Within the SEZ analysis area, the species is known to occur at elevations between 7,875 and 8,850 ft.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Sentry milkvetch	<i>Astragalus cremnophylax</i> var. <i>cremnophylax</i>	ESA-E; AZ-HS; AZ-S1	Grows in the uppermost layer of Kaibab limestone at 7,000 to 7,960 ft in elevation. Two known populations on the South Rim of the Grand Canyon.	×	×	
September 11 stickleaf	<i>Mentzelia memorabilis</i>	BLM-S; AZ-S1	Endemic to Arizona in northern Mohave County, in the Clayhole Wash drainage. Occurs on dry gypsum-clay outcrops with scattered shrubs at 4,689- to 5,197-ft elevation.	×	×	
Sheep fleabane	<i>Erigeron ovinus</i>	BLM-S; FWS-SC; NV-S2	Endemic to Mount Irish and the Sheep and Groom Ranges in southern Nevada, where the species is known from fewer than 15 occurrences. Inhabits crevices of carbonate cliffs and ridgeline outcrops within pinyon-juniper and montane conifer communities. Elevation ranges between 3,600 and 8,400 ft.	×	×	×
Sheep Mountain milkvetch	<i>Astragalus amphioxys</i> var. <i>musimonum</i>	BLM-S; FWS-SC; NV-S2	Restricted to the foothills of the Sheep Mountains in southern Nevada (historically occurred in Arizona). Occurs on carbonate alluvial gravels, particularly along drainages, roadsides, and in other microsites with enhanced runoff, at elevations between 4,400 and 6,000 ft.	×	×	×
Shivwit's milkvetch	<i>Astragalus ampullarioides</i>	ESA-E; UT-S1	Endemic to Washington County, Utah. Inhabits warm desert shrub, creosotebush, and juniper communities on gypsiferous soils on the Chinle Formation. Occurs at elevations between 3,400 and 4,000 ft.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Shockley's rockcress	<i>Arabis shockleyi</i>	CA-S2	Restricted to the San Bernardino Mountains and Mojave Desert in southern California. Occurs on rocky or gravelly ridges of carbonate or quartzite derivations within Pinyon-juniper woodlands. Elevation ranges between 2,900 and 7,500 ft.	×		
Sierra Blanca kittentails	<i>Besseya oblongifolia</i>	FWS-SC; NM-SC; NM-S2	Endemic to the Sacramento Mountains in Lincoln and Otero Counties, New Mexico. Occurs in alpine meadows at elevations between 11,000 and 12,000 ft.	×		
Siler pincushion cactus	<i>Pediocactus sileri</i>	ESA-T; BLM-S; AZ-HS	Limited to southwestern Utah and northwestern Arizona at elevations of 2,800 to 5,800 ft. Restricted to a specific gypsum and salt-rich soil.	×	×	
Silver-cup mock-orange	<i>Philadelphus argyrocalyx</i>	FWS-SC; NM-SC	Known from the Capitan, Sacramento, and White Mountains in southern New Mexico. Inhabits rocky slopes in montane regions in association with pinyon-juniper and coniferous woodlands. Elevation ranges between 6,900 and 8,500 ft.	×		
Silver-haired ivesia	<i>Ivesia argyrocoma</i>	BLM-S; CA-S2; FWS-SC	Known from an extremely narrow range in the San Bernardino Mountains. Inhabits dry alkaline meadows, decomposed granite soils, and pebble plains habitats. Associated with yellow pine forests, red fir forests, and montane coniferous forest communities at elevations between 5,900 and 9,500 ft.	×		
Silverleaf sunray	<i>Enceliopsis argophylla</i>	BLM-S; NV-S1	Nearly entirely confined to Clark County, Nevada, the species is also known to occur in Arizona and Utah. Inhabits dry, open, relatively barren areas on gypsum badlands, volcanic gravels, or loose sands, within creosotebush-bursage communities. Elevation ranges between 1,200 and 2,400 ft.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Single-stemmed wild buckwheat	<i>Eriogonum acaule</i>	BLM-S; CO-S1	Occurs in Colorado and Wyoming on ridgetops, chalky or ashy barrens, and clay flats.	×		
Skiff milkvetch	<i>Astragalus microcymbus</i>	BLM-S; CO-S1	Endemic to Colorado in Gunnison and Saguache Counties. Inhabits open sagebrush or juniper-sagebrush communities on moderately steep to steep slopes. Found in rocky areas at elevations between 7,800 and 8,500 ft.	×		
Slender cottongrass	<i>Eriophorum gracile</i>	CO-S2	Found in fens and subalpine wetlands at elevations between 7,100 and 12,000 ft that are supported by groundwater discharge or snowmelt. Soils tend to be peaty and highly saturated.	×	×	×
Slender cottonheads	<i>Nemacaulis denudata</i> var. <i>gracilis</i>	CA-S2	Occurs in southern California within the Mojave and Sonoran Deserts. Inhabits sandy soils within coastal dunes, desert dunes, creosotebush scrub, and desertscrub communities at elevations below 1,300 ft.	×	×	×
Slender orcutt grass	<i>Orcuttia tenuis</i>	ESA-T; BLM-S; CA-E	Endemic to California. Occurs in vernal pools at elevations between 115 and 5,775 ft.	×		
Slender sedge	<i>Carex lasiocarpa</i>	CO-S1	Inhabits very wet sites, including sedge meadows, fens, bogs, lakeshores, and stream banks. A dominant species of boreal wetlands, where it often forms large, floating mats.	×	×	×
Slender-horned spineflower	<i>Dodecahema leptoceras</i>	ESA-E; CA-E; CA-S1	Endemic to California in Los Angeles, Riverside, and San Bernardino Counties. Inhabits sandy areas of chaparral, cismontane woodland, and coastal scrub (alluvial fan) at elevations lower than 2,490 ft.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Slender-petaled mustard	<i>Thelypodium stenopetalum</i>	ESA-E; BLM-S; CA-E; CA-S1	Restricted to the Big Bear Basin in San Bernardino County, California. It is protected in part at Baldwin Lake Ecological Reserve. Occurs in meadows and seeps at elevations between 5,250 and 8,200 ft.	×		
Slender-spined all-thorn	<i>Koeberlinia spinosa</i> ssp. <i>tenuispina</i>	CA-S2	Known from the Chocolate Mountains of the Sonoran Desert in southeastern California. Occurs in riparian woodland, creosotebush scrub, and Sonoran desertscrub communities. Elevation ranges between 500 and 1,675 ft.	×	×	
Slender-stem bean	<i>Phaseolus filiformis</i>	CA-S1	Restricted to a single occurrence in the Coachella Valley of southern California. Occupies washes within Sonoran desertscrub and creosotebush scrub communities at elevations near 400 ft.	×		
Small-flowered androstephium	<i>Androstephium breviflorum</i>	CA-S1	Occurs on dry sandy to rocky soil substrates. Occurs on desert dunes within creosotebush scrub and Mojave desertscrub at elevations between 720 and 2,100 ft.	×	×	×
Small-flowered sand-verbena	<i>Tripterocalyx micranthus</i>	CA-S1	Restricted to the vicinity of Kelso, California. Occurs on sandy substrates within desert dunes, desert grasslands, creosotebush scrub, and desertscrub. Elevation ranges between 1,800 and 2,800 ft.	×		
Small-winged sedge	<i>Carex stenoptila</i>	CO-S2	Inhabits open, rocky sites within coniferous woodlands at elevations between 7,900 and 9,500 ft.	×	×	×
Smith whitlow-grass	<i>Draba smithii</i>	CO-S2	Endemic to the mountains of southern Colorado. Occurs on talus slopes providing shaded and protected crevices at elevations between 8,000 and 11,000 ft.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Smooth dwarf greasebush	<i>Glossopetalon pungens</i> var. <i>glabrum</i>	BLM-S; FWS-SC; NV-S1	Endemic to the Spring and Sheep Ranges in southern Nevada, where the species is known from three occurrences. Inhabits crevices of carbonate cliffs and outcrops, generally avoiding southerly exposures, within pinyon-juniper, mountain mahogany, and montane conifer communities. Elevation ranges between 6,000 and 7,800 ft.	×		
Smooth figwort	<i>Scrophularia laevis</i>	BLM-S; FWS-SC; NM-SC; NM-S2	Known from the Organ Mountains in Doña Ana County, New Mexico. Inhabits moist canyons on quartz monzonite substrates in pinyon-juniper woodlands and coniferous forests at elevations between 6,900 and 8,500 ft.	×		
Sneed's pincushion cactus	<i>Escobaria sneedii</i> var. <i>sneedii</i>	ESA-E; NM-E; NM-S2	Known from southern New Mexico and western Texas. Found primarily in limestone cracks of broken terrain on steep slopes. Also found on limestone edges and rocky slopes in mountainous regions. Elevation ranges between 4,000 and 6,000 ft.	×	×	×
Snow gooseberry	<i>Ribes niveum</i>	CO-S1	Once considered to be extirpated in Colorado, occurs in thickets along streams or open hillsides at elevations between 1,300 and 7,900 ft.	×		
Sodaville milkvetch	<i>Astragalus lentiginosus</i> var. <i>sesquimetalis</i>	NV-P; NV-S1	Aquatic or wetland dependent in Nevada, where it occurs in Mineral and Nye Counties. Also in California. Inhabits moist, open, alkaline hummocks and drainages near cool springs at elevations just over 4,000 ft.	×	×	
Southern jewel-flower	<i>Streptanthus campestris</i>	BLM-S; CA-S2	Inhabits chaparral, pinyon-juniper, and montane coniferous habitats on rocky substrates at elevations between 3,280 and 7,875 ft.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Southern mountain buckwheat	<i>Eriogonum kennedyi</i> var. <i>austromontanum</i>	ESA-T; BLM-S; CA-S2	Restricted to pebble plains—dense clay soils, usually covered with a cobble pavement of quartzite. These areas usually occur as sparsely vegetated openings in forested habitats. Elevation ranges between 5,900 and 7,900 ft.	×		
Southern skullcap	<i>Scutellaria bolanderi</i> ssp. <i>austromontana</i>	BLM-S; CA-S2	Inhabits chaparral communities and montane coniferous forests on mesic soils at elevations between 1,650 and 6,500 ft.	×		
Southern Rocky Mountain cinquefoil	<i>Potentilla ambigens</i>	CO-S1	Scattered distribution in Colorado. Occurs on gravelly soils within dry, open shrublands and grasslands at middle elevations.	×	×	×
Spear-leaf matelea	<i>Matelea parvifolia</i>	CA-S2	Regionally endemic to southeastern California. Occurs on rocky substrates within creosotebush and desertscrub communities at elevations between 1,450 and 3,600 ft.	×	×	×
Spiny cliff-brake	<i>Pellaea truncata</i>	CA-S2	Occurs on rocky slopes and cliffs of volcanic or granitic derivation within pinyon-juniper woodlands. Elevation ranges between 4,000 and 7,000 ft.	×	×	×
Spiny-spored quillwort	<i>Isoetes setacea</i> ssp. <i>muricata</i>	CO-S2	Occurs in sandy sediment of shallow water and shores of lakes as well as sluggish, acidic streams.	×		
Spreading sandwort	<i>Arenaria lanuginosa</i> ssp. <i>saxosa</i>	CA-S1	Restricted to the San Bernardino Mountains and Peninsular Ranges of southern California. Inhabits mesic and sandy substrates along streams within red fir, lodgepole, subalpine coniferous, and upper montane coniferous forests. Elevation ranges between 5,900 and 8,500 ft.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Spring-loving centaury	<i>Centaureum namophilum</i>	ESA-T; NV-P; NV-S2	Endemic to the Ash Meadows region in Nye County, Nevada, where it is restricted to moist clay soils along the banks of seeps and streams.	×	×	×
Springville clarkia	<i>Clarkia springvillensis</i>	ESA-T; BLM-S; CA-E; CA-S1	Endemic to California in Tulare County. Inhabits chaparral, cismontane woodland, and valley and foothill grassland. Elevation ranges between 800 and 4,000 ft.	×		
Squalid milkvetch	<i>Astragalus serenoii</i> var. <i>sordescens</i>	NV-S2	Endemic to Nevada. Occurs on dry, open, gravelly or sandy soils along gentle slopes of alluvial fans or light-colored clay hills, within mixed-shrub, sagebrush, and lower pinyon-juniper communities at elevations between 5,000 and 6,800 ft.	×	×	×
St. George blue-eyed grass	<i>Sisyrinchium radicum</i>	NV-S1	Restricted to southern Nevada and southwestern Utah, where it is primarily known from the Las Vegas–St. George region. Occurs in moist, sometimes alkaline, meadows, stream banks, and spring borders at elevations between 2,000 and 4,300 ft.	×	×	×
Standley's whitlow-grass	<i>Draba standleyi</i>	BLM-S; FWS-SC; NM-SC; NM-S2	Known from southern Arizona, New Mexico, and western Texas. Inhabits sandy areas, particularly semistabilized sand dunes among open Chihuahuan desertscrub. Often associated with a sparse cover of grasses. Elevation ranges between 5,500 and 9,400 ft.	×	×	
Stebbins' morning-glory	<i>Calystegia stebbinsii</i>	ESA-E; BLM-S; CA-E; CA-S1	Endemic in El Dorado and Nevada Counties in California. Preferred habitat is openings in chaparral and cismontane woodland at elevations below 3,600 ft.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Stephens' beardtongue	<i>Penstemon stephensii</i>	BLM-S; CA-S2; FWS-SC	Restricted to Inyo and San Bernardino Counties, California. Occurs on rocky (usually carbonate) substrates, including rock crevices, cliffs, rocky slopes, and washes associated with pinyon-juniper and creosotebush scrub communities. Elevation ranges between 3,900 and 6,550 ft.	×	×	
Sticky buckwheat	<i>Eriogonum viscidulum</i>	NV-P; FWS-SC; NV-S2	Known only from Clark County, Nevada, and Mohave County, Arizona. Dependent on sand dune communities, where it occurs on deep, loose, sandy soils in washes, flats, roadsides, steep aeolian slopes, and stabilized dune areas. Elevation ranges between 1,200 and 2,200 ft.	×	×	×
Straw-top cholla	<i>Opuntia echinocarpa</i>	AZ-SR	Inhabits sandy or gravelly soil of benches, slopes, mesas, flats, and washes at elevations between 1,000 and 6,700 ft.	×	×	×
Succulent owl's-clover	<i>Castilleja campestris</i> ssp. <i>succulenta</i>	ESA-T; BLM-S; CA-E; CA-S2	Endemic to California. Inhabits vernal pools that are often acidic at elevations lower than 2,460 ft.	×		
Sun-loving meadowrue	<i>Thalictrum heliophilum</i>	BLM-S; CO-S2	Limited to a range within the Colorado River drainage in Garfield, Rio Blanco, and Mesa Counties, Colorado. Found in open areas of sparsely vegetated, dry shale slopes.	×		
Sunnyside green gentian	<i>Frasera gypsicola</i>	NV-P; NV-S1	Range is Nye and White Pine Counties in Nevada and possibly in Utah. Inhabits open, dry, alkaline silty-clay soils on calcareous flats and barrens with sagebrush, greasewood, barberry, and swamp cedar. Found at elevations just over 5,000 ft.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Sweet moustache moss	<i>Trichostomum sweetii</i>	NV-S1	Known from only two occurrences in Nevada. Occurs on sandstone bluffs and sandstone-derived soil, often shaded by rocks at elevations between 2,000 and 2,230 ft.	×	×	×
Tecopa birdbeak	<i>Cordylanthus tecopensis</i>	BLM-S; NV-S2	In Nevada, known only from the Ash Meadows area and in Fishlake Valley. Occurs on open, moist to saturated, alkali-crusted clay soils of seeps, springs, outflow drainages, and meadows at elevations between 2,100 and 4,900 ft.	×		
Texas purple spike	<i>Hexalectris warnockii</i>	BLM-S; AZ-HS; FWS-SC; AZ-S1	Range includes Texas, New Mexico, Arizona, and Baja California in Mexico. Inhabits humus beneath rocks and fallen oaks along streambeds in mixed oak woodlands at elevations of 5,000 to 7,000 ft.	×	×	
Tharp's blue-star	<i>Amsonia tharpii</i>	NM-E; NM-S1	Only three populations are known to occur in New Mexico. Inhabits limestone and gypsum hills in Chihuahuan desertscrub communities at elevations between 3,100 and 3,500 ft.	×	×	
Thorny milkwort	<i>Polygala acanthoclada</i>	CA-S2	Occupies loose, sandy or gravelly slopes within shadscale scrub, chenopod scrub, Joshua tree woodland, and pinyon-juniper woodland communities at elevations between 2,500 and 7,500 ft.	×	×	×
Three-awned grama	<i>Bouteloua trifida</i>	CA-S2	Occurs in eastern Mojave Desert mountains on dry, rocky, often calcareous slopes within desertscrub communities. Elevation ranges between 2,300 and 6,500 ft.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Threecorner milkvetch	<i>Astragalus geyeri</i> var. <i>triquetrus</i>	NV-P; FWS-SC; NV-S2	Known only from Clark County, Nevada, and Mohave County, Arizona. Dependent on open, deep, sandy soils, desert washes, or dunes, generally stabilized by vegetation and/or a gravel veneer. Elevations range between 1,500 and 2,500 ft.	×	×	×
Thurber pilostyles	<i>Pilostyles thurberi</i>	AZ-S2	Known from the Sonoran Desert in southern Arizona and southern California. Occurs in Sonoran desertscrub communities at elevations below 1,200 ft.	×		
Tidestrom's milkvetch	<i>Astragalus tidestromii</i>	CA-S2	Known from fewer than 15 occurrences in the east-central Mojave Desert mountains. Occurs on sandy or gravelly substrates of carbonate (limestone) derivation within creosotebush and desertscrub communities. Elevation ranges between 1,950 and 5,200 ft.	×	×	×
Tiehm blazingstar	<i>Mentzelia tiehmii</i>	BLM-S; NV-S1	Endemic to Nevada. Occurs on hilltops of white soil, sparsely vegetated white calcareous knolls, and bluffs with scattered perennials.	×	×	×
Tiehm buckwheat	<i>Eriogonum tiehmii</i>	BLM-S; NV-P; NV-S1	Endemic to the Silver Peak Range in Esmeralda County, Nevada. Occurs on dry, open, relatively barren, light-colored rocky clay soils derived from a formation of interbedded claystones, shales, tuffaceous sandstones, and limestones.	×		
Tiehm peppergrass	<i>Stroganowia tiehmii</i>	BLM-S; NV-S2	Endemic to Virginia Range and Table Mountain of the Pine Nut Range in Lyon County, Nevada. Inhabits dry, open, rocky clay soils in sagebrush, shadscale, and juniper woodland zones at elevations between 4,820 and 6,170 ft.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Timberland blue-eyed grass	<i>Sisyrinchium longipes</i>	CA-S1	Restricted to San Bernardino County, California. Inhabits mesic meadows, stream banks, moist mixed conifer forest openings, and seeps at elevations near 6,750 ft.	×		
Todsens' pennyroyal	<i>Hedeoma todsenii</i>	ESA-E; NM-E; NM-S2	Endemic to the Sacramento and San Andres Mountains in southern New Mexico. Inhabits loose, gypseous limestone soils on steep north- or east-facing slopes in pinyon-juniper woodlands. Elevations range between 6,200 and 7,400 ft.	×	×	
Tonopah milkvetch	<i>Astragalus pseudodanthus</i>	NV-S2	Restricted to southeastern California and western Nevada. A sand-dune-dependent species that occurs in deep, loose, sandy soils of stabilized and active dune margins, old beaches, valley floors, or drainages at elevations between 4,500 and 6,000 ft.	×	×	×
Tonopah pincushion	<i>Sclerocactus nyensis</i>	BLM-S; NV-P; NV-S1	Endemic to Esmeralda and Nye Counties, Nevada. Occurs on dry rocky soils and low outcrops of rhyolite, tuff, and possibly other rock types, on gentle slopes in open areas or under shrubs in the upper salt desert and lower sagebrush zones. Elevation ranges between 5,700 and 5,800 ft	×	×	×
Tonto Basin agave	<i>Agave delamateri</i>	AZ-HS; FWS-SC; AZ-S2	Inhabits central Arizona in Gila, Maricopa, and Yavapai Counties atop benches, at slope edges, and on open hilly slopes in desertscrub at elevations of 2,350 to 5,100 ft.	×	×	
Toquima milkvetch	<i>Astragalus toquimanus</i>	BLM-S; NV-S2	Endemic to Nevada. Occurs on dry, stiff, sandy to gravelly, basic or calcareous soils along gentle slopes or flats at elevations between 6,500 and 7,500 ft.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Trelease agave	<i>Agave schottii</i> var. <i>treleasei</i>	AZ-HS; FWS-SC; AZ-S1	Range is Santa Catalina Mountains in Pima County, Arizona, on gravelly to rocky places in desertscrub, grasslands, juniper, and oak woodlands at elevations of 3,600 to 6,557 ft.	×	×	
Triple-ribbed milkvetch	<i>Astragalus tricarinatus</i>	ESA-E; BLM-S; CA-S1	Narrowly endemic to a small area extending from Morongo Wash to the hills northeast of Mecca in Riverside and San Bernardino Counties, California. Exists in sandy and gravelly soils of dry washes or on decomposed granite or gravelly soils at the base of canyons. Elevation ranges between 1,475 and 3,900 ft.	×		
Tufted green gentian	<i>Frasera paniculata</i>	BLM-S; CO-S1	Grows in dry, often sandy habitats in desert shrub and pinyon-juniper communities at elevations between 4,000 and 6,500 ft.	×		
Tumamoc globeberry	<i>Tumamoca macdougalii</i>	BLM-S; AZ-SR	Endemic to southern Arizona and northern Mexico in xeric situations, in shady areas of nurse plants along gullies and sandy washes at elevations below 3,000 ft.	×	×	×
Tundra saxifrage	<i>Muscaria monticola</i>	CO-S1	Occurs on rock outcrops, crevices, talus, scree slopes, rocky tundra, fellfields, nunataks, and stream banks at elevations below 14,700 ft.	×	×	×
Tunnel Springs beardtongue	<i>Penstemon concinnus</i>	BLM-S; NV-S2	Range is Lincoln and White Pine Counties in Nevada; also in Utah. At elevations of 6,200 to 6,600 ft.	×		
Tusayan flame flower	<i>Talinum validulum</i>	AZ-SR; FWS-SC	Endemic to Arizona from Coconino and Yavapai Counties. In open mountain meadows, ponderosa pine forests, and pinyon-juniper woodlands and along canyon rims. Elevation ranges between 5,590 and 7,700 ft.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Twinevine	<i>Sarcostemma crispum</i>	CO-S1	Occurs in rocky soils on hills, open-wooded slopes, arid slopes, and canyons at elevations between 5,250 and 6,500 ft.	×		
Uinta Basin spring-parsley	<i>Cymopterus duchesnensis</i>	BLM-S; CO-S1	Known only in northeastern Utah and Moffat and Rio Blanco Counties in Colorado. Inhabits cold desert shrub, sagebrush, and juniper communities between 4,700 to 6,800 ft.	×		
Upright burrhead	<i>Echinodorus berteroi</i>	AZ-S1	Inhabits clay soils of wet ditches, streams, and shallow ponds at elevations below 2,600 ft. Populations in California are not listed or ranked.	×		
Upswept moonwort	<i>Botrychium ascendens</i>	NV-S1	Widely scattered and rare throughout western North America in high-elevation montane habitats (elevations between 8,000 and 11,200 ft). Occurs in mesic habitats in coniferous forests.	×	×	
Utah gentian	<i>Gentianella tortuosa</i>	BLM-S; CO-S1	Range is Colorado, Utah, and Nevada. Grows on shale outcrops in sagebrush and spruce-fir forests at 8,500 to 10,800 ft in elevation.	×		
Utah glasswort	<i>Sarcocornia utahensis</i>	CA-S1	Known from only two occurrences in California. Occurs on alkaline substrates within chenopod scrub and playa habitats at elevations near 1,050 ft.	×	×	×
Utah swallowwort	<i>Cynanchum utahense</i>	AZ-S2	Occurs on sandy or gravelly substrates within Sonoran and Mojave desertscrub communities. Elevation ranges between 160 and 4,700 ft.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Varied fishhook cactus	<i>Mammillaria viridiflora</i>	AZ-SR	Known throughout Arizona and western New Mexico. Occurs in sandy granitic soils of high hills and mountain sides in oak woodlands and at the edge of forest at elevations between 5,000 and 6,888 ft.	×	×	
Vasey's bitter-weed	<i>Hymenoxys vaseyi</i>	FWS-SC; NM-SC; NM-S2	Known from the Organ and San Andres Mountains in Doña Ana County, New Mexico. Occurs in dry sites with coarse soils in montane pinyon-juniper woodland communities. Elevation ranges between 6,900 and 8,200 ft.	×		
Veyo milkvetch	<i>Astragalus ensiformis</i> var. <i>gracilior</i>	NV-S1	Restricted to Lincoln County, Nevada, and Washington County, Utah. Occurs on stiff clay soil of open washes, valley floors, and hillsides under sagebrush within pinyon-juniper communities. Elevation ranges between 4,200 and 5,000 ft.	×	×	×
Villard pincushion cactus	<i>Escobaria villardii</i>	BLM-S; NM-E; FWS-SC; NM-S2	Known from the Franklin and Sacramento Mountains in Otero and Doña Ana Counties, New Mexico. Occurs on loamy soils of desert grassland on broad limestone benches at elevations between 4,500 and 6,500 ft.	×	×	×
Violet twining snapdragon	<i>Maurandya antirrhiniflora</i> ssp. <i>antirrhiniflora</i>	CA-S1	Within California, known from fewer than 10 locations in the Providence Mountains in eastern San Bernardino County. Occurs on carbonate substrates within creosotebush scrub, Joshua tree woodland, and desertscrub habitats. Elevation ranges between 2,500 and 5,000 ft.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Virgin River thistle	<i>Cirsium virginense</i>	NV-S1	Known from only a few wet saline areas in Washington County, Utah; Mohave County, Arizona; and Clark County, Nevada. Occurs in open, moist, alkaline clay soils of seep and spring areas or gypsum knolls at elevations between 1,950 and 6,550 ft.	×	×	×
Wahatoya Creek larkspur	<i>Delphinium robustum</i>	CO-S2	Occurs in broad canyon bottoms, aspen groves, subalpine meadows, riparian woodlands, and lower and upper montane coniferous forest at elevations between 7,200 and 11,200 ft.	×	×	×
Wand-like fleabane daisy	<i>Erigeron oxyphyllus</i>	CA-S1	Restricted to the Whipple Mountains in southern California. Inhabits rocky slopes and washes around seeps or springs, canyons, and cliff bases within desertscrub communities at elevations between 2,100 and 2,600 ft.	×		
Waxflower	<i>Jamesia tetrapetala</i>	BLM-S; FWS-SC; NV-S2	Restricted to southern Nevada and southwestern Utah. Occurs in crevices on limestone cliffs, alpine boulder fields, and rock fields having granitic or carbonate substrates at elevations between 7,000 and 10,500 ft.	×		
Weasel phacelia	<i>Phacelia mustelina</i>	NV-S2	Occurs in Mojave desertscrub and pinyon-juniper woodlands on volcanic or gravelly substrates at elevations between 5,000 and 5,500 ft.	×	×	×
Webber's ivesia	<i>Ivesia webberi</i>	ESA-C; BLM-S; CA-S2; NV-P; NV-S1	Inhabits sandy or gravelly lower montane coniferous forest and pinyon and juniper woodland, or volcanic Great Basin scrub communities at elevations between 3,280 and 6,800 ft.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Welsh's milkweed	<i>Asclepias welshii</i>	ESA-T; AZ-HS; AZ-S1	Found on open, sparsely vegetated coral pink sand dunes in sagebrush, juniper, pine and oak communities of the Great Basin desertscrub at elevations between 4,700 and 6,250 ft in Arizona and Utah.	×	×	
Western moonwort	<i>Botrychium hesperium</i>	CO-S2	Found on early successional habitats with coarse gravelly soil that undergoes periodic disturbance. These include grassy mountain slopes, snowfields, road ditches, and gneiss outcrops and cliffs, as well as old fields at elevations between 650 and 11,300 ft.	×	×	×
Western sedge	<i>Carex occidentalis</i>	CA-S2	Restricted to the San Bernardino, San Jacinto, Inyo, and White Mountains in southern California. Inhabits dry grasslands, meadows, and seeps within yellow pine and lower montane coniferous forests at elevations between 5,400 and 10,282 ft.	×		
Whisk fern	<i>Psilotum nudum</i>	AZ-HS; AZ-S1	Indigenous to the Hawaiian Islands but occurs in southern states in rock crevices, on trees, and on the ground up to 4,000 ft in elevation.	×	×	
White bearpoppy	<i>Arctomecon merriamii</i>	BLM-S	Endemic to the Death Valley region of California and Nevada. It inhabits barren, gravelly areas, rocky slopes, and limestone outcrops at elevations between 2,000 and 5,900 ft.	×	×	×
White bog adder's-mouth	<i>Malaxis monophyllos</i> ssp. <i>brachypoda</i>	CA-S1	Restricted to disjunct locations in California and Colorado. Within California, the species inhabits bogs, fens, meadows, and seeps in mesic red fir, yellow pine, and upper montane coniferous forests. Elevation ranges between 7,200 and 9,000 ft.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
White Mountain alum-root	<i>Heuchera wootonii</i>	FWS-SC; NM-SC	Known from the Datil, Sacramento, and White Mountains in Catron, Lincoln, and Otero Counties, New Mexico. Occurs on mountain slopes in oak thickets, pinyon-juniper woodlands, and montane coniferous forests at elevations between 7,000 and 12,000 ft.	×		
White Mountain false-penny-royal	<i>Hedeoma pulcherrima</i>	FWS-SC; NM-SC; NM-S2	Known from the Capitan, Sacramento, and White Mountains in southern New Mexico. Inhabits steep rocky hillsides and slopes in disturbed areas along roadsides, montane coniferous forests, and pinyon-juniper woodlands. Elevation ranges between 5,000 and 9,000 ft.	×		
White Mountain larkspur	<i>Delphinium novomexicanum</i>	FWS-SC; NM-SC; NM-S2	Occurs in canyon bottoms, forest meadows, and road banks in lower and upper montane coniferous forest at elevations between 7,200 and 11,200 ft.	×		
White Mountain lupine	<i>Lupinus sierrae-blancae</i>	FWS-SC; NM-SC	Inhabits meadows and roadsides in pine and fir forest at elevations between 5,900 and 10,000 ft.	×		
White River cat's-eye	<i>Cryptantha welshii</i>	BLM-S; FWS-SC	Endemic to southern Nevada on dry, open, sparsely vegetated outcrops. Known to occur on carbonate substrates at elevations between 4,500 and 6,600 ft.	×	×	×
White River penstemon	<i>Penstemon scariosus</i> var. <i>albifluvis</i>	ESA-C; BLM-S; CO-S1	Endemic to Raven Ridge in Rio Blanco County, Colorado, and Uintah County, Utah. Grows in fine textured soils and shale fragments in pinyon-juniper-desert shrub or desert shrub communities at elevations between 5,120 and 6,680 ft.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
White-bracted spineflower	<i>Chorizanthe xanti</i> var. <i>leucotheca</i>	BLM-S; CA-S2	Inhabits Mojave desertscrub communities and pinyon-juniper woodlands on sandy or gravelly soils. Occurs at elevations below 3,925 ft.	×	×	
White-margined beardtongue	<i>Penstemon albomarginatus</i>	BLM-S; FWS-SC; CA-S1; NV-S2	Inhabits desert sand dune habitats and Mojave desertscrub communities at elevations below 3,600 ft.	×	×	×
White-margined everlasting	<i>Antennaria marginata</i>	CA-S1	Restricted to San Gorgonio Mountain and the South Fork Santa Ana River area in southwestern San Bernardino County, California. Inhabits moist slopes, ridge tops, and forest openings within lodgepole, red fir, and yellow pine, as well as the lower and upper montane coniferous forests. Elevation ranges between 6,950 and 11,000 ft.	×		
Wiggins' cholla	<i>Opuntia wigginsii</i>	CA-S1	Occurs on sandy substrates of small washes and flats within creosotebush scrub and Sonoran desertscrub communities. Elevation ranges between 100 and 2,900 ft.	×	×	×
Wiggins' croton	<i>Croton wigginsii</i>	CA-S1	Known only from Imperial County, California; Yuma County, Arizona; and northern Mexico. Restricted to desert dunes of the Sonoran Desert. Elevation ranges between 164 and 330 ft.	×	×	×
Wilcox fishhook cactus	<i>Mammillaria wrightii</i> var. <i>wilcoxii</i>	NM-E; NM-S2	Occurs among grasses on low hills mostly in grasslands or along the edges of woodlands.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Williams combleaf	<i>Polyctenium williamsiae</i>	NV-P; NV-S2	Range is Nevada, California, and Oregon. Nevada habitat is relatively barren sandy to sandy-clay or mud margins and bottoms of seasonal lakes over volcanic bedrock. Elevation ranges between 5,670 and 8,930 ft.	×	×	
Windloving buckwheat	<i>Eriogonum anemophilum</i>	BLM-S; NV-S2	Endemic to Nevada in Churchill, Humboldt, Lander, Pershing, and Washoe Counties. Occurs at elevations of 4,750 to 9,840 ft on dry, exposed, undisturbed gravelly, limestone, or volcanic ridges and knolls.	×	×	
Winged milkvetch	<i>Astragalus altus</i>	FWS-SC; NM-SC; NM-S2	Endemic to the Sacramento Mountains of southern New Mexico. Occurs on limestone soils on steep slopes and road cuts in lower montane coniferous forest. Elevation ranges between 7,000 and 8,500 ft.	×		
Wood lily	<i>Lilium philadelphicum</i>	NM-E	Inhabits high meadows of the mountain west.	×	×	
Woods draba	<i>Draba oligosperma</i>	CO-S2	Considered relatively common throughout Colorado. Occurs on gravel terraces, sandy and shaley bluffs, and alpine fell fields on gravel or sand substrates at elevations between 6,500 and 14,200 ft.	×		
Woodside buckwheat	<i>Eriogonum tumulosum</i>	BLM-S; CO-S2	Known from Moffat County in Colorado and also from Utah. Inhabits gravelly to clayey flats and slopes of saltbush and sagebrush communities, pinyon and/or juniper woodlands between 4,900 and 7,545 ft.	×		
Woolly heads	<i>Nemacaulis denudata</i>	AZ-S2	Known from southwestern California on well-developed coastal habitats and sand dunes at elevations below 330 ft.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Plants (Cont.)</i>						
Wooton's wild buckwheat	<i>Eriogonum jamesii</i> var. <i>wootonii</i>	FWS-SC; NM-SC; NM-S2	Endemic to the Sacramento, White, and Gallinas Mountains of south-central New Mexico. Occurs on mountain slopes and small openings in lower and upper montane coniferous forests. Elevation ranges between 7,000 and 11,500 ft.	×		
Wright's cliff-brake	<i>Pellaea wrightiana</i>	CO-S2	Occurs on a variety of acidic to mildly basic substrates on exposed or partially shaded cliffs and rocky slopes. Elevation ranges between 5,200 and 9,500 ft.	×	×	×
Wright's marsh thistle	<i>Cirsium wrightii</i>	BLM-S; NM-E; FWS-SC; NM-S2	Known from south-central New Mexico, western Texas, and Chihuahua, Mexico. Inhabits wet, alkaline soils in springs, seeps, and marshy areas of streams and ponds. Elevation ranges between 3,450 and 8,500 ft.	×	×	
Yellow flame flower	<i>Talinum angustissimum</i>	AZ-S2	Found on mountainous habitats, including meadows, ponderosa pine forests, pinyon-juniper woodlands, and along canyon rims at elevations between 5,000 and 8,000 ft.	×		
Yellow lady's-slipper	<i>Cypripedium parviflorum</i> var. <i>pubescens</i>	AZ-HS; AZ-S1; NM-E; NM-S2	Extensive range, including Europe. Occurs in Apache, Graham, and Greenlee Counties in Arizona. Grows in boggy and swampy areas, damp woods, near rivers or canal banks, and in wet meadows, at elevations between 6,000 and 9,560 ft. Also associated with rocky wooded hillsides on north- or east-facing slopes, and wooded loess river bluffs.	×	×	
Yellow stargrass	<i>Hypoxis hirsuta</i>	CO-S1	Inhabits wet to dry woodlands and prairies at elevations below 5,500 ft.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<b>Plants (Cont.)</b>						
Yellow two-tone beardtongue	<i>Penstemon bicolor</i> ssp. <i>bicolor</i>	BLM-S; FWS-SC; NV-S2	Endemic to Clark County, Nevada, on mostly BLM lands in the vicinity of Las Vegas. Occurs on calcareous or carbonate soils in washes, roadsides, rock crevices, or outcrops at elevations between 2,500 and 5,500 ft.	×	×	×
<b>Invertebrates</b>						
Aegialian scarab beetle	<i>Aegialia knighti</i>	BLM-S; NV-S1	Endemic to Clark County, Nevada, where it is known from one location encompassing an area less than 3,000 acres. Confined to the low, red sand hills and sand blowouts in the Meadow Valley Wash–Weiser Wash–Muddy River drainage system.	×		
Alamosa springsnail	<i>Pseudotryonia alamosae</i>	ESA-E; NM-E; NM-S1	Endemic to a single stream system in western New Mexico. Occurs on cobble, gravel, and sand substrate with algal film in thermal spring pools and runs.	×	×	
Algodones sand jewel beetle	<i>Lepismadora algodones</i>	CA-S1	Endemic to a narrow north–south corridor along the western edge of the Algodones Dunes in southern California. Habitat is active or partially stabilized desert sand dunes with widely scattered perennial vegetation cover.	×		
Amargosa naucorid	<i>Pelocoris shoshone</i> <i>amargosa</i>	ESA-UR; NV-S1	Endemic to the Amargosa Valley in Inyo County, California, and Nye County, Nevada. Inhabits spring-fed aquatic habitats, where it prefers quiet waters among vegetation.	×	×	×
Amargosa tryonia	<i>Tryonia variegata</i>	ESA-UR; BLM-S; NV-S2	Endemic to the Amargosa Valley in Nye County, Nevada. Inhabits spring-fed aquatic habitats where there is an abundance of detritus or aquatic macrophytes.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Invertebrates (Cont.)</i>						
Andrew's dune scarab beetle	<i>Pseudocotalpa andrewsi</i>	CA-S2	Known from a single metapopulation in southern California. Restricted to a region of inland desert sand dunes. Preferred habitat described as troughs of loose, drifting, desert sand dunes.	×		
Andrew's marble butterfly	<i>Euchloe hyantis andrewsi</i>	CA-S1; FWS-SC	Narrowly endemic to the Baldwin Lake area in southwestern San Bernardino County, California. Utilizes hills and washes having the host plants <i>Streptanthus bernardinus</i> , <i>Arabis holboellii</i> , and <i>Thelypodium stenopetalum</i> .	×		
Animas minute moss beetle	<i>Limnebius aridus</i>	BLM-S	Occurs along edges of clear mountain streams on sand or vegetation.	×	×	
Anthony blister beetle	<i>Lytta mirifica</i>	BLM-S; FWS-SC; NM-SC	Occurs terrestrially on flowering plants. Often found in agricultural areas where the species may be a pest to certain crops.	×	×	×
Ash Meadows naucorid	<i>Ambrysus amargosus</i>	ESA-T; NV-S1	Endemic to the Ash Meadows National Wildlife Refuge, where it is restricted to Point of Rocks and Kings Springs.	×	×	×
Ash Meadows pebblesnail	<i>Pyrgulopsis erythropoma</i>	ESA-UR; NV-S1	Endemic to the Ash Meadows National Wildlife Refuge, where it is known from six spring systems.	×	×	×
Ash Springs riffle beetle	<i>Stenelmis lariversi</i>	NV-S1	Endemic to Ash Springs in Lincoln County, Nevada. An arthropod that inhabits warm springs.	×	×	×
Baker's desertsnail	<i>Eremarionta rowelli bakerensis</i>	CA-S1	A terrestrial gastropod narrowly endemic to a region less than 39 mi <sup>2</sup> in size near Soda Lake in San Bernardino County, California. Primarily occurs among rocks on talus slopes.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Invertebrates (Cont.)</i>						
Baking powder flat blue	<i>Euphilotes bernardino minuta</i>	BLM-S; NV-S1	Occurs only in the vicinity of Baking Powder Flat in White Pine County, Nevada.	×	×	
Bifid duct pyrg	<i>Pyrgulopsis peculiaris</i>	BLM-S; NV-S1	Known from six sites in Millard County, Utah, and two sites in White Pine County, Nevada. In Nevada, occurs in an unnamed spring at Big Springs Creek in Snake Valley and at Turnley Spring in Spring Valley.	×		
Big Dune miloderes weevil	<i>Miloderes</i> sp. 1	BLM-S; NV-S1	Endemic to the Big Dune area of Nye County, Nevada, where the species is known to be dependent on deep sand habitats.	×	×	×
Big Smoky wood nymph	<i>Cercyonis oetus alkalorum</i>	BLM-S; NV-S1	Known only in Big Smoky Valley in Lander County, Nevada. Preferred habitat is grassy alkaline flats.	×	×	
Bishop Cap tubesnail	<i>Coelostemma pyrgonasta</i>	NM-S1	Endemic to the Bishops Cap Mountain in Doña Ana County, New Mexico. Occurs terrestrially under limestone blocks below cliffs.	×		
Blunt ambersnail	<i>Oxyloma retusum</i>	NM-S1	Widely distributed across North America. Known to occur in marshy riparian habitats in association with wetland plants.	×	×	×
Boisduval's blue butterfly	<i>Icaricia icarioides</i>	FWS-SC	Known from western North America, from British Columbia, Canada, south to Arizona and New Mexico. Occurs in a variety of habitats, including desert sand dunes, mountain meadows, riparian areas, open woodlands, and sagebrush-dominated landscapes.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Invertebrates (Cont.)</i>						
Borrego parnopes cuckoo wasp	<i>Parnopes borregoensis</i>	CA-S1	Endemic to California, where it is known from the Sonoran and Mojave Deserts. General habitat preferences are poorly understood. May occur in desertscrub, creosotebush scrub, yucca and cholla cactus, saltbush, and desert dune communities.	×	×	×
Bradley's cuckoo wasp	<i>Ceratochrysis bradleyi</i>	CA-S1	Endemic to California, where it is known only from eastern Riverside County. May occur in Sonoran desertscrub, creosotebush scrub, yucca and cholla cactus, saltbush, and desert dune communities.	×	×	×
Brian Head mountainsnail	<i>Oreohelix parawanensis</i>	FWS-SC; UT-SC; UT-S1	Known only from the southwestern slope of Brian Head Peak in southeastern Iron County, Utah. Inhabits alpine rocky scree habitats. Occurs among dense clumps of currants on limestone and basaltic substrates at elevations between 10,600 and 11,000 ft.	×		
Brown springsnail	<i>Pyrgulopsis sola</i>	BLM-S; FWS-SC; AZ-S1	Endemic to Brown Spring in Yavapai County in Arizona.	×	×	
Brown tassel trigonoscutea weevil	<i>Trigonoscutea brunnotesselata</i>	CA-S1	Endemic to the Mojave Desert of California, this species is known only from the Kelso Dunes in San Bernardino County.	×		
Bylas springsnail	<i>Pyrgulopsis arizonae</i>	BLM-S; FWS-SC; AZ-S1	Occurs only in three thermal springs on dead wood, gravel, and pebbles on the north bank of the Gila River in Graham County, Arizona.	×	×	
California floater	<i>Anodonta californiensis</i>	BLM-S; UT-SC; NV-S1; UT-S1	Locally abundant in streams and creeks of the western United States. Occurs in pools of lower-elevation creeks along sandy or muddy substrates.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Invertebrates (Cont.)</i>						
California McCoy snail	<i>Eremarionta rowelli mccoiana</i>	CA-S1	Known only from Riverside County, California, within an area less than 40 mi <sup>2</sup> near the southern Palen/McCoy Wilderness. Lives terrestrially among rocks on talus slopes.	×	×	×
Carlson's dune beetle	<i>Anomala carlsoni</i>	CA-S2	Endemic to the Algodones Dunes in southern California. Occurs in desert dune habitats associated with creosote scrub communities.	×	×	
Carson wandering skipper	<i>Pseudocopaeodes eunus obscurus</i>	ESA-E; CA-S1; NV-S1	Known in California and Nevada. Preferred habitat is alkaline desert seeps dominated by saltgrass, with a nearby freshwater source, such as hot springs.	×		
Chalcedon checkerspot	<i>Euphydryas chalcedona cloudcrofti</i>	ESA-PE	Endemic to the Sacramento Mountains near Cloudcroft in Otero County, New Mexico.	×		
Cheeseweed owlfly (cheeseweed moth lacewing)	<i>Oliarces clara</i>	CA-S1	Occurs within the Colorado River drainage of southwestern Arizona and southern California. Known to occur within creosotebush scrub communities on or near bajadas at elevations below 330 ft.	×	×	×
Chupadera springsnail	<i>Pyrgulopsis chupaderae</i>	NM-E; NM-S1	Endemic to the south end of the Chupadera Mountains in Socorro County, New Mexico, in the Rio Grande drainage. Preferred habitat is springs emerging as free-flowing streams.	×		
Circus beetle	<i>Eleodes hirtipennis</i>	CO-S1	Endemic to Colorado, restricted to great Sand Dunes and Indian Springs Natural Area. Inhabits sparsely vegetated, windblown sand dunes and flats.	×		
Cockerell's striate disc snail	<i>Discus shimeki cockerelli</i>	BLM-S	Associated with woody debris of spruce, fir, and/or aspen at elevations between 7,000 and 12,000 ft.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Invertebrates (Cont.)</i>						
Colorado blue	<i>Euphilotes rita coloradensis</i>	CO-S2	Regionally endemic, naturally rare, and susceptible to disturbance. Small isolated populations persist on transition zone prairies. Sites are undisturbed with the occurrence of host plant <i>Erigonum effusum</i> at elevations between 5,000 and 7,000 ft.	×		
Cook's Peak woodlandsnail	<i>Ashmunella macromphala</i>	BLM-S; NM-T; NM-S1	Known only from two rock slides on Cooke's Peak, Luna County, New Mexico. Occurs on a north-facing slope at 6,900 ft under rocks and debris that are bordered by oaks.	×		
Crescent Dunes aegialian scarab	<i>Aegialia crescenta</i>	ESA-UR; BLM-S; NV-S1	Endemic to Nevada, where it is restricted to the Crescent Dunes and possibly also the San Antonio and Game Range Dunes. This species is a sand dune obligate species.	×	×	×
Crescent Dunes serican scarab	<i>Serica ammomenisco</i>	ESA-UR; BLM-S; NV-S1	Endemic to Nevada, where it is restricted to the Crescent Dunes. This species is a sand dune obligate species.	×	×	×
Crystal springsnail	<i>Pyrgulopsis crystalis</i>	ESA-UR; NV-S1	Endemic to the Ash Meadows National Wildlife Refuge, where it is known only from Crystal Spring.	×	×	×
Cuckoo bee	<i>Paranomada californica</i>	CA-S1	Restricted to two locations in southern San Bernardino County in California. The ecology of this species is poorly understood. It is generally known to occur in desertscrub habitats and in association with the host <i>Exomalopsis verbesinae</i> .	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Invertebrates (Cont.)</i>						
Desert monkey grasshopper	<i>Psychomastax deserticola</i>	CA-S1	Historically known from shrubland and chaparral habitats in California and Nevada. The species is presumably extirpated from Nevada and is currently known from only two locations in southwestern San Bernardino County.	×		
Desert springsnail	<i>Pyrgulopsis deserta</i>	BLM-S; AZ-S1	Occurs in springs along the Virgin River in southwestern Utah and northwestern Arizona, at elevations of 1,870 to 1,900 ft.	×	×	
Distal gland springsnail	<i>Pyrgulopsis nanus</i>	ESA-UR; NV-S1	Endemic to the Ash Meadows National Wildlife Refuge, where it is known from only four spring systems.	×	×	×
Distorted metastoma	<i>Metastoma roemeri</i>	NM-SC; NM-S2	Known to occur in southern New Mexico from the Guadalupe, San Andres, Franklin, and Sacramento Mountains. This species is an obligate calciphile, not found in areas of volcanic rock. Occurs terrestrially along canyon walls under stones and dead plant material and in accumulations of limestone talus. Known to occur on the White Sands Missile Range.	×		
Doña Ana talussnail	<i>Sonorella todseni</i>	BLM-S; NM-T; FWS-SC; NM-S1	Endemic to the Doña Ana Mountains in Doña Ana County, New Mexico. Occurs terrestrially in a small, arid range of volcanic rock. Found in volcanic rock talus under sparse growth of oak and xeric-adapted shrubs.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Invertebrates (Cont.)</i>						
Dusted skipper	<i>Atrytonopsis hianna</i>	CO-S2	Widespread but discontinuous geographic range. Occurs in dry open fields, open woodlands, barren areas, mid grass and tall grass prairies, foothills, prairie gulches, outcrops, and glades. The key habitat feature is the dominance of the food plants <i>Andropogon gerardii</i> and <i>Schizachyrium scoparius</i> , with intermixed patches of bare sand or rock. Prefers relatively undisturbed canyons and open pine woods at elevations between 5,300 and 7,200 ft.	×		
Early blue	<i>Euphilotes enoptes primavera</i>	BLM-S; NV-S1	Known only in the lower mountain canyons of Mineral and Esmeralda Counties, Nevada.	×		
Elongate gland springsnail	<i>Pyrgulopsis isolata</i>	ESA-UR; NV-S1	Endemic to the Ash Meadows National Wildlife Refuge, where it is known only from the spring at Clay Pits.	×	×	×
Endemic ant	<i>Neivamyrmex nyensis</i>	NV-S1	Known from only one colony in very rocky terrain in Clark County, Nevada, south of Beatty.	×	×	×
Fairbanks springsnail	<i>Pyrgulopsis fairbanksensis</i>	ESA-UR; NV-S1	Endemic to the Ash Meadows National Wildlife Refuge, where it is known only from Fairbanks Spring.	×	×	×
Flag springsnail	<i>Pyrgulopsis breviloba</i>	ESA-UR; NV-S1	Endemic to Nevada, where it is known from only two spring systems in Lincoln and Nye Counties. Occurs in rheocene or limnocene springs. Associated vegetation includes rush ( <i>Juncus</i> spp.), bulrush ( <i>Schoenoplectus</i> and <i>Scirpus</i> spp.), spikerush ( <i>Eleocharis</i> spp.), and water cress ( <i>Rorripa</i> spp.).	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Invertebrates (Cont.)</i>						
Franklin Mountain talussnail	<i>Sonorella metcalfi</i>	NM-SC; NM-S1	Known from the Organ Mountains in Doña Ana County, New Mexico. Occurs terrestrially, where it is restricted to mounds of rhyolitic talus in the upper Sonoran Life Zone (6,000 ft). Often occurs in association with pinyon-juniper woodlands.	×	×	
Franklin Mountain woodlandsnail	<i>Ashmunella pasonis pasonis</i>	NM-S1	Known from the San Andres Mountains in southern New Mexico. Occurs terrestrially in accumulations of limestone talus at elevations between 3,300 and 10,600 ft. Known to occur on the White Sands Missile Range.	×	×	
Giant Sand treader cricket	<i>Daihinibaenetes giganteus</i>	CO-S1	Endemic to Colorado on sand dunes and sandy washes.	×	×	
Gila springsnail	<i>Pyrgulopsis gilae</i>	NM-T; NM-S2	Current populations are only known in New Mexico. Occurs in mud, debris, and vegetation in cool to warm waters.	×		
Gila tryonia	<i>Tryonia gilae</i>	BLM-S; FWS-SC; AZ-S1	Occurs in a thermal spring in Graham County, Arizona. Found on dead wood, leaves, or stones.	×	×	
Giuliani's dune scarab beetle	<i>Pseudocotalpa giulianii</i>	ESA-UR; BLM-S; NV-S1	Endemic to the Big Dune and Lava Dune regions of Nye County, Nevada, where the species is known to be dependent on deep sand habitats.	×	×	×
Grand Wash springsnail	<i>Pyrgulopsis bacchus</i>	BLM-S; FWS-SC; AZ-S1	Occurs in springs within the Grand Wash trough in Mohave County in northwestern Arizona, with cattails, sedges, cottonwood, willow, ash, and mesquite. Elevation is 1,570 to 1,720 ft.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Invertebrates (Cont.)</i>						
Grated tryonia	<i>Tryonia clathrata</i>	ESA-UR; BLM-S; NV-S2	Endemic to the Muddy River spring system in southeastern Nevada. Occurs on algae and detritus substrates of slow-moving freshwater spring systems.	×	×	×
Great Basin silverspot butterfly	<i>Speyeria nokomis nokomis</i>	BLM-S; CO-S1; NM-S1	Occurs in isolated populations in streamside meadows and open seepage areas associated with violets.	×	×	×
Great Sand Dunes anthicid beetle	<i>Amblyderus weneri</i>	CO-S1	Endemic to Colorado, restricted to active dunes, sandy blowouts, or shifting sands with vegetative cover of less than 15%. Known global range is within an area of 112 mi <sup>2</sup> of the Great Sand Dunes.	×	×	
Hacheta Grande woodlandsnail	<i>Ashmunella hebari</i>	BLM-S; NM-T; NM-S1	Restricted to the Hachita Grande area of the Big Hatchet Mountains in Hidalgo County, New Mexico. Occurs at the base of limestone outcrops where litter-soil mold collects at elevations between 6,200 and 7,500 ft.	×	×	
Hamlin Valley pyrg	<i>Pyrgulopsis hamlinensis</i>	ESA-UR; BLM-S; UT-SC; UT-S1	Known from only one complex of springs in the Hamlin–Snake Valleys watershed in Beaver County, Utah. Occurs in high-elevation springs (7,160 ft) with rocky substrates.	×	×	
Hardy's dune beetle	<i>Anomala hardyorum</i>	CA-S2	Endemic to the Algodones Dunes in southern California. Known to occur on active north- or east-facing dunes.	×	×	
Hardy's aegialian scarab	<i>Aegialia hardyi</i>	BLM-S; NV-S1	Occurs in Nevada.	×		
Hebard's blue-winged desert grasshopper	<i>Anconia hebari</i>	NM-SC	Occurs in open sand dune habitats.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Invertebrates (Cont.)</i>						
Hoary skimmer	<i>Libellula nodisticta</i>	CO-S1	Inhabits wetlands with emergent vegetation, including marshes, shallow pools, and slow springs.	×	×	×
Hot Springs physa	<i>Physa acuta</i>	CO-S2	Occurs in drainage ditches, ponds, swamps, and streams at elevations below 10,500 ft.	×	×	
Hubbs pyrg	<i>Pyrgulopsis hubbsi</i>	ESA-UR; NV-S1	Endemic to Nevada, where it is restricted to Hiko and Crystal Springs. Occurs in rheocene and limnocene springs in association with vegetation that includes saltgrass ( <i>Distichlis spicata</i> ).	×	×	
Kanab ambersnail	<i>Oxyloma haydeni kanabensis</i>	ESA-E; BLM-S; AZ-S1	Known in Kanab, Utah, and Grand Canyon, Arizona. Occurs in perennially wet soil surface or shallow standing water, as found in marshes watered by springs and seeps at the base of cliffs.	×	×	
Kelso Dunes scarab glaresis beetle	<i>Glaresis arenata</i>	CA-S1; FWS-SC	Endemic to California from the Kelso Dunes in San Bernardino County.	×	×	
Kelso giant sand treater cricket	<i>Macrobaenetes kelsoensis</i>	CA-S1; FWS-SC	Endemic to California from the Kelso Dunes in San Bernardino County.	×	×	
Kelso Jerusalem cricket	<i>Ammopelmatus kelsoensis</i>	CA-S1; FWS-SC	Endemic to California from the Kelso Dunes in San Bernardino County.	×	×	
Kingman springsnail	<i>Pyrgulopsis conica</i>	BLM-S; FWS-SC; AZ-S1	Occurs in Burns, Dripping, and Cool Springs in the Black Mountains in Mohave County, Arizona.	×	×	
Large aegialian scarab beetle	<i>Aegialia magnifica</i>	ESA-UR; BLM-S; NV-S1	Endemic to the Big Dune and Lava Dune regions of Nye County, Nevada, where the species is known to be dependent on deep sand habitats.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Invertebrates (Cont.)</i>						
Longitudinal gland pyrg	<i>Pyrgulopsis anguina</i>	ESA-UR; UT-SC; NV-S1; UT-S1	Known from only two springs in Snake Valley on the Utah–Nevada border. The one spring in Utah in which it occurs is Clay Spring in northwestern Millard County.	×	×	
MacNeill sooty wing skipper	<i>Hesperopsis graciellae</i>	BLM-S; FWS-SC; NV-S1	Endemic to a section of the Colorado River from the Arizona–Nevada–Utah border south into California and adjacent Baja California, Mexico. Occurs along desert alkali flats adjacent to river sources within desert washes and in arid canyons.	×	×	
Maricopa tiger beetle	<i>Cicindela oregona maricopa</i>	FWS-SC	Known primarily from Maricopa County, Arizona, in sandy riparian areas, such as stream banks and sand bars.	×	×	×
Median gland springsnail	<i>Pyrgulopsis pisteri</i>	ESA-UR; NV-S1	Endemic to the Ash Meadows National Wildlife Refuge, where it is known from only three spring-fed habitats.	×	×	×
Mineral Creek mountainsnail	<i>Oreohelix pilsbryi</i>	NM-T; NM-S1	Endemic to the Black Range in southwestern New Mexico along Mineral Creek. Occurs in moist limestone crevices in soil and leaf litter beneath limestone rocks.	×		
Minute tryonia	<i>Tryonia ericae</i>	ESA-UR; NV-S1	Endemic to the Ash Meadows National Wildlife Refuge, where it is known from fewer than four spring-fed habitats.	×	×	×
Moapa pebblesnail	<i>Pyrgulopsis avernalis</i>	ESA-UR; NV-S1	Endemic to Moapa Springs in Clark County, Nevada. A benthic species of freshwater springs and brooks.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Invertebrates (Cont.)</i>						
Moapa Valley pebblesnail	<i>Pyrgulopsis carinifera</i>	ESA-UR; NV-S1	Endemic to the Moapa Valley in Clark County, Nevada, where it occurs in freshwater spring-fed habitats.	×	×	×
Moapa Warm Spring riffle beetle	<i>Stenelmis moapa</i>	ESA-UR; BLM-S; NV-S1	Endemic to the Warm Springs Area of Clark County, Nevada. A warm springs obligate species occurring in swift, shallow waters of freshwater outlet springs on gravel substrates. Often found near vegetation and bare tree roots.	×	×	×
Mojave gypsum bee	<i>Andrena balsamorhizae</i>	BLM-S; NV-S2	Endemic to Nevada, where the species is restricted to gypsum soils associated with habitats of its single larval host plant, <i>Enceliopsis argophylla</i> . Such habitats include warm desert shrub communities on dry slopes and sandy washes.	×	×	×
Mojave poppy bee	<i>Perdita meconis</i>	BLM-S; NV-S2	Known only from Clark County, Nevada, where the species is dependent on poppy plants (genus <i>Arctomecon</i> ). Such habitats include roadsides, washes, and barren desert areas on gypsum soils.	×	×	×
Neararctic riffle beetle	<i>Stenelmis occidentalis</i>	NV-S1	Widespread distribution in western North America. Occurs in high-gradient creeks as well as low- to mid-gradient rivers, springs, and brooks. Preferred sites are characterized as having woody debris, rocks, and exposed, submerged, or overhanging vegetation.	×	×	×
Nelson's miloderes weevil	<i>Miloderes nelsoni</i>	CA-S1; FWS-SC	Endemic to sand dune habitats in the Eureka-Salin Valley and Mojave regions of California. Currently restricted to two locations from Inyo and San Bernardino Counties.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Invertebrates (Cont.)</i>						
Nevada admiral	<i>Limenitis weidemeyerii nevadae</i>	NV-S2	Endemic to southern Nevada, where it is restricted to the Spring Mountains and Sheep Range. Occurs in riparian areas associated with its host plants <i>Populus</i> , <i>Salix</i> , and <i>Amelanchier</i> at elevations above 6,500 ft.	×	×	
New Mexico hot springsnail	<i>Pyrgulopsis thermalis</i>	NM-T; NM-S1	Endemic to New Mexico; its range is restricted to two thermal springs in the Gila Wilderness. Occurs in cooler portions of minor hot springs flows on algae-covered stones and rock faces.	×		
Niobrara ambersnail	<i>Oxyloma haydeni haydeni</i>	BLM-S; AZ-S1	Range is Arizona, with two populations, and Utah, at elevations between 3,120 and 3,780 ft. Occurs in permanently wet areas, or areas with damp or saturated cattail litter, or seep- or spring-fed wetlands.	×	×	
Oasis Valley springsnail	<i>Pyrgulopsis micrococcus</i>	ESA-UR; BLM-S; NV-S2	Endemic to the Amargosa River drainage and the Death, Panamint, and Saline Valleys in Inyo County, California, and Nye County, Nevada. Inhabits small springs and stream outflows on stone, travertine, and detritus.	×	×	×
Obese thorn snail	<i>Carychium exiguum</i>	NM-S2	Occurs in damp habitats, such as marshy riparian areas, floodplains, and ponds.	×	×	×
Organ Mountain talussnail	<i>Sonorella orientis</i>	NM-SC	Known from the Organ and San Andres Mountains in southern New Mexico. Occurs terrestrially in limestone talus in montane pinyon-juniper woodlands. Elevations range between 4,900 and 7,900 ft. Known to occur on the White Sands Missile Range.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Invertebrates (Cont.)</i>						
Organ Mountain woodlandsnail	<i>Ashmunella organensis</i>	NM-S2	Endemic to the Organ Mountains in Doña Ana County, New Mexico. Occurs terrestrially in volcanic rock talus in montane ponderosa pine and gambel oak woodlands. Elevation ranges between 5,000 and 8,000 ft.	×		
Ovate vertigo	<i>Vertigo ovata</i>	NM-T; NM-S1	Occurs in graminoid litter and cattail leaves in swamps, sedge meadows, wet and mesic prairie, low calcareous meadows, river banks, lakeshores, roadside ditches, and wooded wetlands. Also found on bedrock outcrops, upland forest, and upland grassland habitats.	×		
Pahranagat naucorid	<i>Pelocoris shoshone shoshone</i>	BLM-S; NV-S1	Known only to occur in the Muddy and White River Basins in southern Nevada. Inhabits quiet waters of warm, spring-fed habitats.	×	×	×
Pahranagat pebblesnail	<i>Pyrgulopsis merriami</i>	ESA-UR; NV-S1	Endemic to spring-fed systems in southern Nevada. Occurs on rocks and submergent vegetation near the outflow of freshwater springs.	×	×	×
Pallid wood nymph	<i>Cercyonis oetus pallescens</i>	BLM-S; NV-S1	Known only in alkaline flats within the Reese River Valley in Lander County, Nevada.	×		
Paper pondshell	<i>Utterbackia imbecillis</i>	NM-E; NM-S2	Occurs in muddy sand in moderate current and muddy sand and substrates of reservoirs. Commonly found in artificial waters.	×		
Pecos assiminea	<i>Assiminea pecos</i>	ESA-E; NM-E; NM-S1	Occurs at Bitter Creek and the Diamond Y Spring system in Texas, and Bitter Lake National Wildlife Refuge, Chaves County, New Mexico. Preferred habitat is a humid microhabitat created by wet mud or beneath vegetation mats, typically within a few centimeters of running water.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Invertebrates (Cont.)</i>						
Pecos springsnail	<i>Pyrgulopsis pecosensis</i>	BLM-S; NM-T; NM-S1	Restricted to less than 3 mi <sup>2</sup> of a single spring run and associated marsh in Eddy County, New Mexico. Occurs on pebbles, gypsum silt, mud, and submerged vegetation in gypsum rich water.	×		
Point of Rocks tryonia	<i>Tryonia elata</i>	ESA-UR; NV-S1	Endemic to the Ash Meadows National Wildlife Refuge, where it is known only from Point of Rocks Springs.	×	×	×
Quino checkerspot butterfly	<i>Euphydryas editha quino</i>	ESA-E; CA-S1	Inhabits chaparral and coastal sage scrub with <i>Plantago</i> species as host plants.	×		
Railroad Valley skipper	<i>Hesperia uncas fulvapalla</i>	BLM-S; NV-S1	Found in moist areas within Nye County, Nevada.	×	×	
Red-tailed blazing star bee	<i>Megandrena mentzeliae</i>	NV-S2	Endemic to southern Nevada, where it is known only from Clark County. The species is primarily associated with the host plant, <i>Mentzelia tricuspis</i> . Such habitats include open, dry, barren areas with gypsum to gravelly soils.	×	×	×
Riverside cuckoo wasp	<i>Hedychridium argenteum</i>	CA-S1	Endemic to California, where it is known only from eastern Riverside County. May occur in Sonoran desertscrub, creosotebush scrub, yucca and cholla cactus, saltbush, and desert dune communities.	×	×	×
Roberts' rhopalolemma bee	<i>Rhopalolemma robertsi</i>	CA-S1	Endemic to southern California from desert wash habitats in southern San Bernardino County.	×	×	×
Sacramento Mountains checkerspot butterfly	<i>Euphydryas anicia cloudcrofti</i>	FWS-SC	Restricted to meadows in mixed-conifer forests of the Sacramento Mountains in southern New Mexico. Elevation ranges between 8,000 and 9,000 ft.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Invertebrates (Cont.)</i>						
Samalayuca Dune grasshopper	<i>Cibolacris samalayuca</i>	NM-SC	Occurs terrestrially in open sand dune habitats.	×	×	×
San Emigdio blue butterfly	<i>Plebulina emigdionis</i>	CA-S2; FWS-SC	Endemic to California, where populations are extremely localized within the southern San Joaquin Valley, Mojave Desert, and Victorville area. The entire range is limited to 97 to 193 mi <sup>2</sup> . Utilizes dry river courses and intermittent streamsides as well as adjacent flats. The host plant is <i>Atriplex canescens</i> .	×		
San Luis Dunes tiger beetle	<i>Cicindela theatina</i>	CO-S1	Endemic to Colorado, where it is restricted to active dunes, sandy blowouts, or shifting sands with vegetative cover of less than 15%. Known global range is within a 112-mi <sup>2</sup> area of the Great Sand Dunes. Adults prefer sandy slopes with sparse bunches of vegetation but are not found on open sand. Larvae are restricted to burrowing to leeward slopes of dunes, with particular preference for northeast aspects. Burrows are typically established on northern aspects of the crests of dune blowouts with more apparent vegetation.	×	×	
Sand Mountain blue	<i>Euphilotes pallescens arenamontana</i>	BLM-S; NV-S1	Dependent on Kearney buckwheat shrub habitat at Sand Mountain in Nevada.	×		
Sand Mountain serican scarab	<i>Serica psammobunus</i>	BLM-S; NV-S1	Endemic to Nevada and known to occur at Sand Mountain and Blow Sand Mountain.	×		
Sangre de Cristo peaclam	<i>Pisidium sanguinichristi</i>	BLM-S; NM-T; NM-S1	Known in a single cirque lake, Middle Fork Lake, in Taos County, New Mexico. Inhabits mud along emergent grasses in sheltered embayments and in rocky substrate.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Invertebrates (Cont.)</i>						
Shasta crayfish	<i>Pacifastacus fortis</i>	ESA-E; CA-E; CA-S1	Known only from tributaries of the Pit River in Shasta County, California. Prefers rocky, gravelly bottoms, usually volcanic rubble, in cool, clear, spring-fed lakes, rivers, and streams.	×		
Shortneck snaggletooth	<i>Gastrocopta dalliana dalliana</i>	NM-T; NM-S1	Occurs in an array of habitats ranging from Sonoran Desert shrublands to montane forest. Known in Indian Creek Canyon at 5,900-ft elevation in Hidalgo County, New Mexico.	×		
Shotwell's range grasshopper	<i>Shotwellia isleta</i>	NM-SC	Known from southern New Mexico and adjacent Mexico. Occurs in nonsaline playas that are composed of clay soils.	×	×	×
Simple hydroporus diving beetle	<i>Hydroporus simplex</i>	CA-S1; FWS-SC	Endemic to California, where it is currently known only from the vicinity of Big Bear Lake in southwestern San Bernardino County. Inhabits shallow edge areas of creeks, lakes, or ponds.	×		
Slate millipede	<i>Comanachelus chihuanus</i>	BLM-S	Occurs along volcanic outcrops at the base of south-facing slopes.	×		
Sphinx moth	<i>Sphinx dollii</i>	CO-S2	Madrean oak woodland, arid brushlands, and desert foothills with woody broad-leafed shrubs.	×	×	×
Sporting goods tryronia	<i>Tryonia angulata</i>	ESA-UR; NV-S1	Endemic to the Ash Meadows National Wildlife Refuge, where it is known from only three spring systems.	×	×	×
Spring Mountains springsnail	<i>Pyrgulopsis deaconi</i>	BLM-S; NV-S1	Endemic to freshwater springs in two valleys of the Spring Mountains in southern Nevada.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Invertebrates (Cont.)</i>						
Squaw Park talussnail	<i>Sonorella allynsmithi</i>	FWS-SC; AZ-S1	Endemic to Squaw Peak Park and Mummy Mountain, Maricopa County, Arizona. Suitable habitat is restricted to steep, north-facing, talus slopes where limestone talus breaks off and forms piles or slides.	×	×	
Swamp fingernailclam	<i>Musculium partumeium</i>	NM-T; NM-S1	Occurs in the mud bottoms of streams, swamps, ponds, and lake margins where current velocity is slow.	×	×	
Terrestrial snail	<i>Oreohelix florida</i>	NM-E	Endemic to the Florida Mountains of southwestern New Mexico.	×	×	
Texas hornshell	<i>Popenaias popeii</i>	NM-E; NM-S1	Confined to the lower portions of the Pecos River and Rio Grande drainages. In New Mexico, this species appears to be confined to the Pecos River near Carlsbad. Occurs in shallow, narrow run habitat over travertine bedrock where small-grained substrata collect.	×		
Uncompahgre fritillary butterfly	<i>Boloria improba crocnema</i>	ESA-E; CO-S1	Endemic to the San Juan Mountains of southwestern Colorado. Habitat is moist alpine slopes above 12,000 ft with extensive snow willow patches. Primarily known from Mt. Uncompahgre and Redcloud Peak, more than 75 mi west of the SEZ.	×		
Utah physa	<i>Physella utahensis</i>	BLM-S; FWS-SC; UT-SC; UT-S1	Current populations are known only from Utah. Primarily known from tributaries of Utah Lake, this species also occurs in shallow, spring-fed pools with muddy or sandy substrates.	×	×	
Valley elderberry longhorn beetle	<i>Desmocerus californicus dimorphus</i>	ESA-T; CA-S2	Associated with elderberry trees in Central Valley, California.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Invertebrates (Cont.)</i>						
Vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	ESA-T; CA-S2	Endemic to the Central Valley, Central Coast Mountains, and South Coast Mountains of California. Inhabits vernal pools and ephemeral wetlands, typically grassed or mud bottomed.	×		
Vernal pool tadpole shrimp	<i>Lepidurus packardi</i>	ESA-E; CA-S2	Endemic to Central Valley and Sacramento River Delta in California. Found in natural and artificial habitats, including vernal pools, swales, ephemeral drainages, stock ponds, reservoirs, ditches, backhoe pits, and tire ruts.	×		
Victorville shoulderband	<i>Helminthoglypta mohaveana</i>	CA-S1	Endemic to California in the vicinity of Victorville in southwestern San Bernardino County. Primarily known from shrub-scrub habitats along the Mojave River.	×		
Warm Springs naucorid	<i>Limnocoris moapensis</i>	NV-S1	Endemic to southern Nevada, where it is restricted to the Warm Springs Area. Occurs among the pebble beds of quiet waters or stream outlets.	×	×	×
White desertsnailed	<i>Eremarionta immaculata</i>	CA-S1; FWS-SC	Endemic to the Riverside Mountains of eastern Riverside County, California, where its current known range is less than 100 mi <sup>2</sup> . Lives terrestrially among rocks on talus slopes.	×		
White River wood nymph	<i>Cercyonis pegala pluvialis</i>	BLM-S; NV-S2	Occurs in White Pine County, Nevada, in a narrow marshy area in a channel of the White River.	×	×	
Woodlandsnailed	<i>Ashmunella amblya cornudasensis</i>	BLM-S (NM)	Endemic to the Cornudas Mountain complex in Otero County, New Mexico. It is restricted to accumulations of igneous-rock talus with low junipers and live oaks.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<b>Fish</b>						
Arkansas darter	<i>Etheostoma cragini</i>	CO-S2	Occurs in the Upper Arkansas, Fountain Creek, Horse Creek, Upper Arkansas at John Martin, Big Sandy Creek, Rush Creek, Black Squirrel Creek, and Chico Creek drainages. Preferred habitat includes spring-fed creeks with cool, clear water and herbaceous aquatic vegetation and pools with sand, fine gravel, or organic detritus substrate.	×		
Arkansas River shiner	<i>Notropis girardi</i>	ESA-T; NM-E; NM-S1	Inhabits turbid water of broad, shallow, unshaded channels of creeks and rivers, with silt and sand bottom. Introduced populations occur in the Pecos River, New Mexico.	×		
Arroyo chub	<i>Gila orcuttii</i>	CA-S2	Endemic to the southern coastal drainages of California where populations are restricted to a small range. A benthic species that uses small to moderate-sized streams, with the majority of habitat being runs and pools. Occurs in headwaters, creeks, and small to medium-sized rivers; often, intermittent streams are also used.	×	×	×
Ash Meadows Amargosa pupfish	<i>Cyprinodon nevadensis mionectes</i>	ESA-E; NV-P; NV-S2	Endemic to the Ash Meadows National Wildlife Refuge, where it is known to be in the outflows of spring-fed systems.	×	×	×
Ash Meadows speckled dace	<i>Rhinichthys osculus nevadensis</i>	ESA-E; NV-P; NV-S1	Endemic to the Ash Meadows National Wildlife Refuge, where it is known to be in the outflows of spring-fed systems.	×	×	×
Big Smoky Valley tui chub	<i>Gila bicolor</i> ssp. 8	BLM-S; NV-P; NV-S1	Occurs in Nye County, Nevada. Preferred habitat is springs/springbrooks, lakes, and reservoirs.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Fish (Cont.)</i>						
Big Spring spinedace	<i>Lepidomeda mollispinis pratensis</i>	ESA-T; NV-P; NV-S1	Endemic to Lincoln County, Nevada, where it is restricted to stream habitats of Meadow Valley Wash. Restricted to a 5-mi section of stream in Condor Canyon, which flows through private and publicly owned lands. Inhabits clean, flowing, spring-fed stream habitats with deep pool areas and shallow marshy areas near the shore.	×		
Bigscale logperch	<i>Percina macrolepida</i>	NM-T; NM-S2	Inhabits gravel, sand runs, and pools of small to medium-sized rivers. In New Mexico, this species is known from the upper Pecos River drainage.	×		
Blue sucker	<i>Cycleptus elongatus</i>	BLM-S; NM-E; NM-S1	Occurs in the largest rivers and lower parts of major tributaries, typically in channels and flowing pools with moderate current. In New Mexico, this species is known from the Pecos River system in Eddy County.	×		
Bluehead sucker	<i>Catostomus discobolus</i>	BLM-S	Known from the Virgin River basin in the project area. Occurs in the mainstem and large tributaries of the Virgin River. Adults prefer fast-flowing water over rubble substrates; young prefer quiet, shallow margins.	×	×	
Bonneville cutthroat trout	<i>Oncorhynchus clarkii utah</i>	BLM-S; NV-P; NV-S1	Inhabits high-elevation streams with coniferous and deciduous trees, and low-elevation streams in sage-steppe grasslands. Elevation ranges between 3,280 and 11,500 ft.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Fish (Cont.)</i>						
Bonytail chub	<i>Gila elegans</i>	ESA-E; AZ-WSC; AZ-S1; NV-P; NV-S1	Historically widespread in larger Colorado River basin streams; currently known from a few scattered occurrences. Inhabits mainstem portions of larger rivers, usually over mud or rocks. Occupies a variety of habitats in reservoirs but appears to prefer open water areas.	×		
Coho salmon (Central California coast evolutionarily significant unit [ESU])	<i>Oncorhynchus kisutch</i>	ESA-E; CA-E; CA-S2	Spawns in streams in areas dominated by redwood forest.	×		
Colorado pikeminnow	<i>Ptychocheilus lucius</i>	ESA-E; CA-E; CA-SX	Formerly widespread in the Colorado River basin; currently considered extirpated in California. Young prefer small, quiet backwaters. Adults use various habitats, including deep, turbid, strongly flowing water, eddies, runs, flooded bottoms, or backwaters.	×	×	
Colorado River cutthroat trout	<i>Oncorhynchus clarkii pleuriticus</i>	BLM-S; CO-SC	Found in the Colorado River drainage where it is limited to a few, small headwater streams and lakes in northwest Colorado.	×		
Desert pupfish	<i>Cyprinodon macularius</i>	ESA-E; AZ-WSC; CA-E; AZ-S1; CA-S1	Known from the Colorado and Gila River drainages in desert springs and outflow marshes, river-edge marshes, backwaters, saline pools, and streams. Prefers areas with sand/silt substrates and aquatic plant life, limited surface flow, and water less than 3 ft deep.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Fish (Cont.)</i>						
Desert sucker	<i>Catostomus clarkii</i>	BLM-S; FWS-SC; UT-SC; NV-S2; UT-S2	Known from the lower Colorado, Gila, and Virgin River Basins. Found in rapids and flowing pools of streams and rivers. Adults primarily live in pools; young inhabit riffles.	×	×	
Devils Hole pupfish	<i>Cyprinodon diabolis</i>	ESA-E; NV-P; NV-S1	Endemic to the Ash Meadows National Wildlife Refuge, where it is known only from Devils Hole.	×	×	×
Fish Creek Springs tui chub	<i>Gila bicolor euchila</i>	BLM-S; NV-P; NV-S1	Occurs in Fish Creek Springs, Fish Creek Valley, in southwestern Eureka County, Nevada.	×	×	
Flannelmouth sucker	<i>Catostomus latipinnis</i>	BLM-S; FWS-SC; AZ-S2; CA-S1; NV-S1; UT-S2	Found throughout the Colorado River Basin, from Wyoming to southern Arizona and California. Considered rare in the lower Colorado River Basin; populations have been introduced in areas of the Colorado River below Lake Mead.	×	×	
Flathead chub	<i>Platygobio gracilis</i>	BLM-S	Occurs in shallow to fairly deep turbid flowing waters in main channels of small to large rivers with mud, rock, or sand bottoms.	×	×	
Gila chub	<i>Gila intermedia</i>	ESA-E; AZ-WSC; AZ-S1; BLM-S; NM-E; NM-S1	Found in smaller headwater streams, cienegas, and springs or marshes of the Gila River basin. Preferred habitat is quiet, deeper waters, or remaining near cover of terrestrial vegetation, boulders, and fallen logs.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Fish (Cont.)</i>						
Gila longfin dace	<i>Agosia chrysogaster chrysogaster</i>	BLM-S; FWS-SC	Native to the Gila and Bill Williams drainages in Arizona. Habitat ranges from intermittent, hot, low-desert streams to cool brooks at higher elevations. Occupies relatively small or medium-sized streams with sandy or gravelly bottoms, eddies, and pools near overhanging banks or other cover.	×	×	
Gila topminnow	<i>Poeciliopsis occidentalis occidentalis</i>	ESA-E; AZ-WSC; NM-T; AZ-S1	Gila River system, currently only at a few localities in the Gila River drainage and one locality in the Bill Williams drainage. Inhabits headwater springs and vegetated margins and backwater areas of intermittent and perennial streams and rivers.	×	×	
Gray redbhorse	<i>Scartomyzon congestus</i>	NM-E; NM-S1	Occurs in warm, clear to moderately turbid, sluggish, and low-gradient small to medium-sized rivers.	×		
Greenback cutthroat trout	<i>Oncorhynchus clarkii stomias</i>	ESA-T; CO-S2	Found only in cold, clear, oxygenated headwater streams in the Arkansas and South Platte River drainages in eastern Colorado. Occurs in streams along the eastern escarpment of the Sangre de Cristo Mountains.	×	×	
Greenthroat darter	<i>Etheostoma lepidum</i>	NM-T; NM-S2	In New Mexico, primarily known from the lower Pecos River drainage. Occurs in swift-flowing springs, headwaters, creeks, and small rivers. Most common in riffle areas with rocky, plant-covered surfaces.	×	×	
Headwater catfish	<i>Ictalurus lupus</i>	BLM-S; NM-S1	Known to occur throughout the Pecos River. Inhabits clear, temperate waters of creeks and small rivers, with sandy and rocky riffles, runs, and pools.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<b>Fish (Cont.)</b>						
Hiko White River springfish	<i>Crenichthys baileyi grandis</i>	ESA-E; NV-P; NV-S1	Endemic to Lincoln and Mineral Counties, Nevada, where it is restricted to the remaining waters of the White River and the stream and outflow habitats of Hiko and Crystal Springs. The species has also been introduced into Blue Link Spring.	×	×	
Hot Creek Valley tui chub	<i>Gila bicolor</i> ssp. 5	BLM-S; NV-P; NV-S1	Occurs in Nye County, Nevada.	×	×	
Humpback chub	<i>Gila cypha</i>	ESA-E; AZ-WSC; AZ-S1; CO-E; CO-S1	Restricted to six population centers of turbulent, high-gradient, canyon-bound reaches of large rivers within the Colorado River Basin in Arizona, Colorado, and Utah. Found in areas of slower eddies and pools of the Yampa, Gunnison, Green, and Colorado Rivers in Colorado.	×	×	
Least chub	<i>Iotichthys phlegethontis</i>	ESA-UR; BLM-S; UT-S1	Endemic to the Bonneville Basin in western Utah. Historically occurred in alkaline marshes, slow rivers and creeks, and spring-fed habitats. Currently known to occur only in alkaline spring habitats.	×	×	
Little Colorado spinedace	<i>Lepidomeda vittata</i>	ESA-T; AZ-WSC; AZ-S1	Endemic to the Little Colorado River and its north-flowing tributaries. Four populations exist in creeks in Arizona, with a preference for slow to moderate currents over fine gravel bottoms.	×	×	
Little Colorado sucker	<i>Catostomus</i> ssp. 3	BLM-S; AZ-WSC; FWS-SC; AZ-S2	Endemic to the upper portion of the Little Colorado River and several of its north-flowing tributaries in Coconino, Navajo, and Apache Counties. Inhabits creeks, small to medium-sized rivers, pools, and riffles.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Fish (Cont.)</i>						
Loach minnow	<i>Tiaroga cobitis</i>	ESA-T; AZ-WSC; NM-T; AZ-S1; NM-S2	Limited to a bottom-dwelling habitat of turbulent, rocky riffles of mainstream rivers and tributaries within Arizona and New Mexico.	×	×	
Longfin dace	<i>Agosia chrysogaster</i>	BLM-S	Occurs in streams from deserts to lower mountains at elevations ranging from 4,900 to 6,500 ft. Inhabits shallow water with sand substrate and moderate current.	×	×	
Meadow Valley speckled dace	<i>Rhinichthys osculus</i> ssp. 11	ESA-UR; BLM-S; NV-S2	Endemic to Meadow Valley Wash and Clover Creek in Lincoln County, Nevada. Inhabits cool to warm freshwater streams with gravel or rock substrates.	×		
Meadow Valley Wash desert sucker	<i>Catostomus clarkii</i> ssp. 2	BLM-S; NV-P; NV-S2	Endemic to the Meadow Valley Wash system in Lincoln County, Nevada. Preferred habitat includes rapids and flowing pools of small to medium-sized streams and rivers primarily over bottoms of gravel-rubble with sandy silt in the interstices. Adults live in pools, moving at night to swift riffles and runs, while juveniles inhabit riffles.	×		
Mexican tetra	<i>Astyanax mexicanus</i>	NM-T; NM-S1	Historically occurred in the Rio Grande and Pecos River drainages in New Mexico and Texas. Currently considered extirpated from the SEZ region. Inhabits springs and streams in pools and below swift areas in eddies.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Fish (Cont.)</i>						
Moapa dace	<i>Moapa coriacea</i>	ESA-E; NV-P; NV-S1	Endemic to Clark County, Nevada, where the species is restricted to 6 mi of aquatic habitat in the warm spring area at the headwaters of the Muddy River. Preferred habitat includes spring pools, outflows, and the mainstem of the Muddy River, where the water is clear and warm. Habitat use varies with age; juveniles tend to occur in spring pools and outflows where water velocities are slower and temperatures are warmer, while adults tend to occur in outflows and in the Muddy River where water velocities are faster and temperatures are slightly cooler.	×	×	×
Moapa speckled dace	<i>Rhinichthys osculus moapae</i>	ESA-UR; BLM-S; NV-P; NV-S1	Endemic to Clark County, Nevada, where it is restricted to the Muddy River. Uses stream bottoms in shallow cobble riffles. Occurs in low-velocity areas behind rocks. Spawning habitat consists of small patches of bare rocks and pebbles.	×	×	×
Moapa White River springfish	<i>Crenichthys baileyi moapae</i>	ESA-UR; NV-P; NV-S2	Endemic to southern Nevada, where it is restricted to five warmwater springs in the upper Muddy River. Preferred habitat includes spring pools and backwaters in spring outflows. More abundant in and near the springs than in the river.	×	×	×
Mohave tui chub	<i>Gila bicolor mohavensis</i>	ESA-E; CA-E; CA-S2	Currently restricted to a few known locations in San Bernardino County, California. Inhabits deep pools or shallow portions of mineralized, alkaline waters. Formerly in the mainstream Mohave River; now in lakes and mineral spring pools.	×	×	
Monitor Valley speckled dace	<i>Rhinichthys osculus</i> ssp. 5	BLM-S; NV-P; NV-S1	Occurs in Nye County, Nevada, in springs/springbrooks.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Fish (Cont.)</i>						
Newark Valley tui chub	<i>Gila bicolor newarkensis</i>	BLM-S; NV-P; NV-S1	Found in a spring in the western part of Newark Valley near Diamond Peak, White Pine County, Nevada. Tolerant of habitat alterations.	×		
Oasis Valley speckled dace	<i>Rhinichthys osculus</i> ssp. 6	BLM-S; NV-P; FWS-SC; NV-S1	Endemic to the Oasis Valley in Nye County, Nevada, where it is restricted to spring-fed habitats.	×	×	×
Owens pupfish	<i>Cyprinodon radiosus</i>	ESA-E; CA-E; CA-S1	Found in a limited number of refuges with clear, shallow water, and few predators.	×		
Owens tui chub	<i>Gila bicolor snyderi</i>	ESA-E; CA-E; CA-S1	Restricted to a few sites in Owens Valley, California. Found in shallow water with aquatic vegetations or in sluggish rivers.	×		
Pahranagat roundtail chub	<i>Gila robusta jordani</i>	ESA-E; NV-P; NV-S1	Endemic to Nevada, where it is restricted to the White River system. A benthic species that uses small freshwater streams.	×	×	
Pahranagat speckled dace	<i>Rhinichthys osculus velifer</i>	ESA-UR; BLM-S; NV-P; NV-S1	Endemic to Nevada, where it is restricted to the White River Valley system. Inhabits rivers, streams, tributaries, springs, brooks, marshes, lakes, and reservoirs.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Fish (Cont.)</i>						
Pahrump poolfish	<i>Empetrichthys latos latos</i>	ESA-E; NV-P; NV-S1	Endemic to the Pahrump Valley in southern Nye County, Nevada. It is currently extirpated from its native range. Introduced populations are currently known to occur in three spring-fed habitats in Clark and White Pine Counties, Nevada: Corn Creek Springs (Desert National Wildlife Range), Shoshone Springs, and an irrigation reservoir fed by Sandstone Spring (Spring Mountain State Park).	×	×	×
Pecos bluntnose shiner	<i>Notropis simus pecosensis</i>	ESA-T; NM-E; NM-S2	Known from the upper Pecos River system in New Mexico. Inhabits main river channels over a substrate of sand, gravel, and silt.	×	×	
Pecos gambusia	<i>Gambusia nobilis</i>	ESA-E; NM-E; NM-S1	Known from the lower Pecos River system. Occurs in shallow margins of clear vegetated spring waters high in calcium carbonate as well as gypsum sinkhole habitats.	×	×	
Pecos pupfish	<i>Cyprinodon pecosensis</i>	NM-T; NM-S1	Native to the Pecos River system and nearby lakes, sinkholes, and saline springs from Texas to New Mexico. Inhabits saline springs, gypsum sinkholes, and desert streams.	×	×	
Plains minnow	<i>Hybognathus placitus</i>	BLM-S	Occurs in silt-laden rivers, slower water and side pools of silty streams. Inhabits clear to highly turbid rivers and creeks with sandy bottoms, high levels of dissolved solids, and slight to moderate erratic flows.	×	×	
Railroad Valley springfish	<i>Crenichthys nevadae</i>	ESA-T; NV-P; NV-S2	Endemic to the Railroad Valley in eastern Nye County, Nevada. It is extirpated from much of its historic natural habitat and has been introduced elsewhere. Inhabits warm spring pools, outflows, streams, and adjacent marsh habitats.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Fish (Cont.)</i>						
Railroad Valley tui chub	<i>Gila bicolor</i> ssp. 7	BLM-S; NV-P; NV-S1	Occurs in Nye and White Pine Counties, Nevada. Preferred habitat is rivers, streams, tributaries, springs/springbrooks, marshes, lakes, and reservoirs.	×	×	
Razorback sucker	<i>Xyrauchen texanus</i>	ESA-E; AZ-WSC; CA-E; NV-P; AZ-S1; CA-S1; NV-S1	Historically widespread in larger Colorado River basin streams; currently known from a few scattered occurrences. Inhabits slow areas, backwaters, and eddies of medium to large rivers and their impoundments. The largest extant populations occur in Lake Mohave, Lake Mead, and Lake Havasu.	×	×	
Relict dace	<i>Relictus solitarius</i>	BLM-S; NV-P; NV-S2	Native to basin-bottom springs and pluvial drainages of lakes in valleys of eastern Nevada. Inhabits springs, spring-fed streams, ponds, intermittent lakes, and marshes, with mud or stone bottoms.	×	×	
Rio Grande chub	<i>Gila pandora</i>	BLM-S; CO-S1; CO-SC; NM-SC; NM-S2	Known from larger tributaries in the Colorado Basin, from Wyoming south to Arizona and New Mexico. Occupies cool to warm water streams and rivers consisting of pools adjacent to riffles and runs. Suitable habitats include boulders, tree roots, submerged trees and branches, and undercut cliff walls.	×	×	×
Rio Grande cutthroat trout	<i>Oncorhynchus clarkii virginalis</i>	ESA-C; BLM-S; CO-S1	Historically inhabited tributary streams of the Rio Grande, Pecos, and Canadian River Basins. The current distribution is confined to streams of the Rio Grande Basin.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Fish (Cont.)</i>						
Rio Grande shiner	<i>Notropis jemezanus</i>	BLM-S; FWS-SC; NM-SC; NM-S2	Historically occurred in the Rio Grande and Pecos River drainages in New Mexico and Texas. Inhabits large, open rivers and large streams with sand, gravel, or rubble substrates.	×	×	
Rio Grande silvery minnow	<i>Hybognathus amarus</i>	ESA-E; NM-E; NM-S1	Historically known from the Rio Grande drainage in Mexico, New Mexico, and Texas. Currently confined to perennial reaches of the Rio Grande. Inhabits low-gradient, large streams with shifting sand or silty bottoms.	×	×	
Rio Grande sucker	<i>Catostomus plebeius</i>	CO-E; CO-S1; NM-S2	Restricted to streams of the Rio Grande Basin. It is found in channels and backwaters near rapidly flowing waters.	×	×	×
Roundtail chub	<i>Gila robusta</i>	BLM-S; AZ-WSC; FWS-SC; AZ-S2; NV-S1; UT-S2	Occurs in larger tributaries in the Colorado Basin, from Wyoming south to Arizona and New Mexico; cool to warm water streams and rivers consisting of pools adjacent to riffles and runs and with boulders, tree roots, submerged trees and branches, and undercut cliff walls.	×	×	×
Saratoga Springs pupfish	<i>Cyprinodon nevadensis nevadensis</i>	CA-S1	Endemic to California, where populations are primarily known from Saratoga Springs (Death Valley National Park); also known to co-occur with the Mojave tui chub in Lake Tuendae near the Soda Lake playa in the Mojave National Preserve. Utilizes shallow areas of herbaceous lakes, marshes, springs, and brooks.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Fish (Cont.)</i>						
Smallmouth buffalo	<i>Ictiobus bubalus</i>	NM-S2	Native to the Rio Grande and Pecos River. Inhabits larger pools of higher-order rivers with low-velocity currents and abundant aquatic vegetation. Prefers clean to moderately turbid, deep, warm waters.	×	×	×
Sonora sucker	<i>Catostomus insignis</i>	BLM-S; FWS-SC	Known from the Gila and Bill Williams drainages in Arizona and New Mexico. Found in a variety of habitats from warm water rivers to cooler higher-elevation streams. Adults tend to remain near cover in daylight and move to runs and riffles at night; young live in runs and quiet eddies.	×	×	
Southern leatherside chub	<i>Lepidomeda aliciae</i>	UT-SC; UT-S1	Utah Lake and Sevier River drainages, Utah; apparently extirpated from the Provo River at Utah Lake and from the Beaver River.	×	×	
Speckled dace	<i>Rhinichthys osculus</i>	BLM-S; FWS-SC	Known to occur in most major watersheds in the western United States. Found in rocky riffles, runs, and pools of headwaters, streams, rivers, and occasionally in lakes. Often congregates below riffles and eddies.	×	×	
Spikedace	<i>Meda fulgida</i>	ESA-T; AZ-WSC; AZ-S1; NM-E; NM-S1	Formerly widespread in the Gila Rivers system of southwestern New Mexico, Arizona, and Sonora, Mexico. Currently persists only in the Verde River in Arizona and portions of the Gila River in New Mexico. Preferred habitat is permanent, flowing, unpolluted water of low-gradient streams with pool, riffle, run, and backwater areas. Substrates are sand, gravel, and cobble.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Fish (Cont.)</i>						
Spring-run chinook salmon	<i>Oncorhynchus tshawytscha spring-run</i>	ESA-T; CA-T; CA-S1	In summer months, inhabits deep, riverine pools with cover from rocky ledges or shade. Winters in the ocean.	×		
Suckermouth minnow	<i>Phenacobius mirabilis</i>	CO-E; CO-S2; NM-T; NM-S2	Inhabits runs and riffles of creeks and small to medium-sized rivers with substrates ranging from sand and gravel to large boulders, and with low to moderate currents.	×		
Unarmored threespine stickleback	<i>Gasterosteus aculeatus williamsoni</i>	ESA-E; CA-E; CA-S1	Inhabits clear, slow-flowing streams with sand or mud substrate, water temperature of less than 75°F <sup>g</sup> , and abundant aquatic vegetation.	×	×	
Virgin River chub	<i>Gila seminuda</i>	ESA-E; NV-P; NV-S1; UT-S1	Endemic to the Virgin River system, occurring in slower-flowing mainstem pools in areas with vegetation and boulders.	×	×	
Virgin River spinedace	<i>Lepidomeda mollispinis mollispinis</i>	BLM-S; NV-P; NV-S1; UT-S1	Endemic to the Virgin River system, occurring in mainstem and tributary reaches, particularly areas with swift runs interspersed with shaded pools.	×		
Warm Springs Amargosa pupfish	<i>Cyprinodon nevadensis pectoralis</i>	ESA-E; NV-P; NV-S1	Endemic to the Ash Meadows National Wildlife Refuge, where it is known to be in the outflows of spring-fed systems.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Fish (Cont.)</i>						
White River spinedace	<i>Lepidomeda albivallis</i>	ESA-E; NV-P; NV-S1	Endemic to east-central Nevada in cool, clear, spring-fed habitats. Historical habitat included spring-fed habitats in the White River system in Nye County, Nevada, north to the mouth of Ellison Creek and south to 10 mi south of Flag Springs. Currently restricted to Flag Springs.	×	×	
White River springfish	<i>Crenichthys baileyi baileyi</i>	ESA-E; NV-P; NV-S1	Currently restricted to the Ash Spring system in southeastern Nevada. Occurs in warm springs and their outflows and marshes. Tolerates extreme temperature and dissolved oxygen conditions.	×	×	×
White Sands pupfish	<i>Cyprinodon tularosa</i>	NM-T; FWS-SC; NM-S1	Endemic to the Tularosa Basin in southern New Mexico. Restricted to Malpais Spring and Lost River in Otero County, Salt Creek in Sierra County, and Mound Springs in Lincoln County. Occupies shallow pools and calm spring runs over mud-silt and sand-gravel substrates.	×	×	
Woundfin	<i>Plagopterus argentissimus</i>	ESA-E; NV-P; NV-S1; UT-S1	Restricted to the Virgin River system, occurring in seasonally warm and turbid runs and riffles. Juveniles typically prefer slower and deeper habitats than adults.	×	×	
Yaqui chub	<i>Gila purpurea</i>	ESA-E; AZ-WSC; AZ-S1	Limited to the San Bernardino and Leslie Canyon National Wildlife Refuges in Cochise County, Arizona, in deeper pools of small streams with dense aquatic vegetation.	×	×	
Yaqui topminnow	<i>Poeciliopsis occidentalis sonorensis</i>	ESA-E; AZ-WSC; AZ-S1	Limited to the Rio Yaqui basin of the San Bernardino Wildlife Refuge in Arizona, living near the surface of shallow water in vegetated springs, brooks, and margins.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<b>Fish (Cont.)</b>						
Zuni bluehead sucker	<i>Catostomus discobolus yarrowi</i>	ESA-C; BLM-S; AZ-WSC; NM-E; NM-S1	Historically inhabited headwater streams of the Little Colorado River. Currently limited to the Zuni River drainage of eastern Arizona and west-central New Mexico at elevations of 2,000 to 6,760 ft. Habitat is low-velocity pools and pool-runs.	×	×	
<b>Amphibians</b>						
Amargosa toad	<i>Bufo nelsoni</i>	ESA-UR; BLM-S; NV-P; NV-S2	Endemic to the Amargosa Valley in Nye County, Nevada, where it is confined to isolated riparian and spring-fed habitats along the Amargosa River. Usually observed near water at the outflow of warm springs.	×	×	×
Arroyo toad	<i>Anaxyrus californicus</i>	ESA-E; CA-S2	Occurs in washes, streams, arroyos, and adjacent uplands and along rivers that have shallow, gravelly pools adjacent to sandy terraces.	×	×	
Boreal (western) toad	<i>Bufo boreas</i>	FWS-SC; CO-E; CO-S1; UT-SC; UT-S2	In close proximity to ponds, marshes, lakes, reservoirs, rivers, and streams within grassland and mountain meadow habitats at elevations between 7,000 and 11,860 ft, with highest densities occurring between 9,500 and 11,000 ft. Associated plant communities include lodgepole pine forests, spruce-fir forests, and alpine meadows characterized by <i>Salix</i> spp., <i>Betula glandulosa</i> , and <i>Potentilla fruticosa</i> .	×	×	
Boreal toad (southern Rocky Mountain population)	<i>Bufo boreas</i> pop. 1	CO-E; CO-S1	Occurs in southern Rocky Mountains in Colorado, Wyoming, and New Mexico at elevations between 7,800 and 12,000 ft. Inhabits subalpine lakes, reservoirs, ponds, creek pools, marshy areas, wet meadows, and adjacent terrestrial habitats.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Amphibians (Cont.)</i>						
California red-legged frog	<i>Rana draytonii</i>	ESA-T; CA-S2	In or near the quiet, permanent water of streams, marshes, or ponds; also damp woods and meadows some distance from water. Breeding occurs in permanent or seasonal ponds, marshes, or quiet stream pools; eggs are often attached to emergent vegetation and float near the surface.	×	×	
Chiricahua leopard frog	<i>Rana chiricahuensis</i>	ESA-T; AZ-WSC; AZ-S2; NM-S1	Habitat generalists in the mountain regions of central and southeastern Arizona and into Mexico. Inhabits natural and man-made systems with primary habitat being oak, mixed oak, and pine woodlands with permanent water ponds of moderate depth, and also montane streams. Elevations between 3,280 and 8,890 ft.	×	×	
Colorado River toad	<i>Bufo alvarius</i>	NM-T; NM-S2	Occurs from sea level to 5,000 ft in elevation, from arid mesquite/creosotebush lowlands and grasslands to oak/sycamore/walnut groves in mountain canyons.	×	×	
Columbia spotted frog	<i>Rana luteiventris</i>	BLM-S; UT-S1	Occurs at grass/sedge margins of streams, lakes, ponds, springs, and marshes. Found near permanent, quiet water at elevations ranging from sea level to 10,000 ft.	×	×	
Columbia spotted frog	<i>Rana luteiventris</i> pop. 3	ESA-C; NV-P; NV-S2	Range includes Idaho, Oregon, and Nevada, where it is found in Nye, Elko, and Eureka Counties at elevations of 5,600 to 8,700 ft.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Amphibians (Cont.)</i>						
Couch's spadefoot	<i>Scaphiopus couchii</i>	BLM-S; CA-S2	Known to occur in scattered populations east of the Algodones Mountains and north along the Colorado River. Wetland habitats include temporary pools, ponds, and puddles. Often occurs in arid and semiarid shrublands, shortgrass plains, mesquite savanna, creosotebush desert, thorn forest, and cultivated areas. Elevation ranges between 690 and 1,120 ft.	×	×	×
Great Basin spadefoot	<i>Spea intermontana</i>	BLM-S	Ranges from canyon bottoms to dry basins to stream floodplains in pinyon-juniper woodlands, sagebrush, and semidesert shrublands.	×		
Great Plains narrowmouth toad	<i>Gastrophryne olivacea</i>	BLM-S; AZ-WSC; NM-E; NM-S1	Mesquite semidesert grasslands and oak woodlands near streams, springs, and pools. Found in deep, moist burrows, often with rodents, and under large flat rocks, dead wood, or other debris near water.	×	×	
Great Plains toad	<i>Bufo cognatus</i>	BLM-S; UT-SC	Inhabits deserts, grasslands, semidesert shrublands, open floodplains, and agricultural areas at elevations from sea level to 6,000 ft. Typically in stream valleys.	×	×	
Inyo Mountains slender salamander	<i>Batrachoseps campi</i>	BLM-S; CA-S2	Endemic to 16 canyons and springs along a 25-mi section of the Inyo Mountains in Inyo County, California. Found in the vicinity of springs, seeps, and their associated riparian growth.	×		
Jemez Mountains salamander	<i>Plethodon neomexicanus</i>	BLM-S; NM-E; NM-S2	Restricted to Jemez Mountains in Sandoval, Los Alamos, and Rio Arriba Counties, New Mexico, at elevations of 7,185 to 11,256 ft. Occurs in mixed conifer habitat with rotted logs and rocks.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Amphibians (Cont.)</i>						
Kern Canyon slender salamander	<i>Batrachoseps simatus</i>	CA-T; CA-S2	Endemic to the lower Kern River Canyon, California. Occurs in north-facing riparian areas in narrow canyons shaded with willows and cottonwoods. Habitats include creek margins, seeps, talus, and exposed chaparral.	×		
Limestone salamander	<i>Hydromantes brunus</i>	BLM-S; CA-T; CA-S1	Endemic to the Merced River in California. Inhabits mossy limestone crevices in talus of the lower Merced River Canyon.	×		
Lowland burrowing treefrog	<i>Smilisca fodiens</i>	BLM-S; AZ-WSC; AZ-S2	Occurs in Arizona in low, open mesquite grasslands associated with major washes and arroyos, and in Mexico in tropical scrub forests.	×	×	
Lowland leopard frog	<i>Rana yavapaiensis</i>	BLM-S; AZ-WSC; CA-SC; FWS-SC	Known from central and southern Arizona, northern Mexico, and extreme southeastern California. Inhabits aquatic systems in desert grasslands and pinyon-juniper woodlands. A habitat generalist that will breed in a variety of natural and man-made habitats, including rivers, streams, ponds, cattle tanks, canals, and ditches.	×	×	×
Mountain yellow-legged frog	<i>Rana muscosa</i>	ESA-E; CA-S1	Inhabits sunny riverbanks, meadow streams, isolated pools, and lake borders in the southern Sierra Nevada and the mountains of southern California. Prefers sloping banks with rocks or vegetation to the water's edge.	×		
Northern cricket frog	<i>Acris crepitans</i>	BLM-S; CO-SC	Extensive range; in Colorado, preferred habitat is sunny, muddy, or marshy gently sloped edges of ponds, reservoirs, and streams.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Amphibians (Cont.)</i>						
Northern leopard frog	<i>Rana pipiens</i>	ESA-UR; BLM-S; BLM-S; AZ-WSC; AZ-S2; CA-S2; CO-SC; NM-S2; NV-S2	Inhabits a variety of habitats at elevations from 2,640 to 9,155 ft. Wetland community types, including low-gradient creeks, moderate-gradient rivers, pools, springs, canals, floodplains, reservoirs, and shallow lakes. Permanent water with rooted aquatic vegetation is the preferred wetland habitat. Terrestrial habitats include wet meadows and fields.	×	×	×
Plains leopard frog	<i>Rana blairi</i>	BLM-S; CO-SC; AZ-WSC; AZ-S1	Range is western Indiana, through the plains to eastern Colorado and New Mexico and Texas. Population in Arizona is isolated to the western side of the Chiricahua Mountains and Sulphur Springs Valley. Found near streams, ponds, marshes, or ditches in prairie and desert grasslands, sandhills, canyon bottoms, and also oak and oak-pine woodlands, and farmland.	×	×	
Relict leopard frog	<i>Rana onca</i>	ESA-C; NV-P; NV-S1	Current range is restricted to a few small areas in Arizona and Nevada within the Lake Mead National Recreation Area. Occupies a variety of habitats, including springs, streams, outlet creeks, and wetlands characterized by clean, clear water, in both deep and shallow water. The five recently extant populations inhabit spring systems with largely unaltered hydrology and no introduced American bullfrogs or game fishes. Breeding habitat includes pools or slow-moving side areas of streams.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Amphibians (Cont.)</i>						
Sacramento Mountain salamander	<i>Aneides hardii</i>	BLM-S; NM-T; FWS-SC	Endemic to southern New Mexico from the Sacramento and Capitan Mountains. Known to occur in moist coniferous forests at elevations above 7,875 ft. Found under litter, logs, bark, rocks, and woody debris.	×		
Santa Cruz long-toed salamander	<i>Ambystoma macrodactylum croceum</i>	ESA-E; CA-E; CA-S1	Occurs in coastal woodland and chaparral near ponds and marshes for breeding. Requires shade and abundant soil humus.	×		
Shasta salamander	<i>Hydromantes shastae</i>	BLM-S; CA-T; CA-S1	Endemic to a small area near Shasta Lake, Shasta County, California. Found around cliff faces, vertical cavern walls, and level ground in mixed forests of Douglas fir, pines, and oaks. Lives in moist caves and rock crevices.	×		
Southwestern toad	<i>Bufo microscaphus</i>	BLM-S; FWS-SC; NV-S2; UT-SC; UT-S2	Inhabits woodlands and low-elevation riparian habitats in association with permanent or semipermanent water bodies. Occurs in and along streams, ditches, flooded fields, irrigated croplands, and permanent reservoirs.	×	×	×
Tehachapi slender salamander	<i>Batrachoseps stebbinsi</i>	BLM-S; CA-T; CA-S2	Endemic to California in the Caliente Creek drainage at the juncture of the Sierra Nevada and the Tehachapi Mountains. Inhabits north-facing moist canyons and ravines in oak and mixed woodlands in arid to semiarid locations. Found under rocks, logs, and other debris in moist areas.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<b>Amphibians (Cont.)</b>						
Western spadefoot	<i>Spea hammondi</i>	BLM-S	Endemic to California and Baja California, Mexico. Prefers open areas with sandy or gravelly soils, in a variety of habitats, including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, floodplains, playas, and mountains.	×		
Yellow-blotched salamander	<i>Ensatina eschscholtzii croceator</i>	BLM-S; CA-S2	Endemic to the lower Kern River Canyon in California. Found in evergreen and deciduous forests, under logs, rocks, and other surface debris.	×		
Yosemite toad	<i>Anaxyrus canorus</i>	ESA-C; CA-S2	Inhabits montane wet meadows and also seasonal ponds associated with pine and subalpine conifer forests at elevations between 6,400 and 11,320 ft.	×		
<b>Reptiles</b>						
Alameda whipsnake	<i>Masticophis lateralis euryxanthus</i>	ESA-T; CA-T; CA-S2	Occurs in chaparral foothills, shrublands with grassy patches, rocky canyons, and watercourses.	×	×	
Arizona mud turtle	<i>Kinosternon arizonense</i>	AZ-S2	Known only from Arizona and Mexico. In Arizona, distribution is limited to southern Maricopa and Pima Counties. Inhabits various quiet or slow-flowing bodies of water, usually with soft mud or sand bottom.	×		
Arizona night lizard	<i>Xantusia arizonae</i>	AZ-S1	Endemic to Arizona from Mohave, Pinal, and Yavapai Counties in arid and semiarid granite outcroppings and rocky areas, among fallen leaves, trunks of agave, or other vegetative debris. Associated with pinyon-juniper and chaparral-oak plant communities.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<b>Reptiles (Cont.)</b>						
Arizona skink	<i>Eumeces gilberti arizonensis</i>	AZ-WSC; FWS-SC; AZ-S1	Known only from west-central Arizona. Among rocks, logs, and leaf litter areas near permanent or semipermanent streams; riparian drainages up through oak-pine woodlands.	×	×	
Barefoot banded gecko	<i>Coleonyx switaki</i>	CA-T; CA-S1	Known from southern California from Borrego Springs south to Baja California. Found in arid, rocky areas on flatlands and canyons where there are large boulders and rock outcrops with sparse vegetation. Elevation ranges from sea level to 2,000 ft.	×		
Blunt-nosed leopard lizard	<i>Gambelia sila</i>	ESA-E; CA-E; CA-S1	Inhabits semiarid grasslands, alkali flats, low foothills, canyon floors, large washes, and arroyos. Prefers sandy soils.	×		
Brown vinesnake	<i>Oxybelis aeneus</i>	AZ-WSC; AZ-S1	Range is Arizona through Mexico into South America. Arizona habitat is brush-covered hillsides, canyons, and stream bottoms with sycamore, oak, walnut, and wild grape, at elevations between 3,000 and 5,800 ft.	×		
California mountain kingsnake (San Diego population)	<i>Lampropeltis zonata (pulchra)</i>	BLM-S; CA-S1	A subspecies of California kingsnake, found in three areas of southern California in San Diego County. Found in diverse habitats, including coniferous forests, oak-pine woodlands, chaparral, and scrub areas.	×	×	
California mountain kingsnake (San Bernardino population)	<i>Lampropeltis zonata (parvirubra)</i>	CA-S1; FWS-SC	Inhabits valley-foothill hardwood, hardwood-conifer, and coniferous forests as well as mixed and montane chaparral, valley-foothill, and wet meadow habitats. Uses sites having dense shrub, rock, or boulder cover in close proximity to stream or lakeshores.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Reptiles (Cont.)</i>						
Canyon spotted whiptail	<i>Aspidoscelis burti</i>	BLM-S; NM-T; NM-S2	Distribution extends from southern Arizona, southwestern New Mexico, through Sonora into northern Sinaloa, Mexico. Only found in Guadalupe Canyon in Hidalgo County, New Mexico, at elevations of 4,333 to 4,550 ft in riparian zones with sycamore, cottonwood, ash, or bunch grasses.	×	×	
Chuckwalla	<i>Sauromalus ater</i>	BLM-S; FWS-SC; UT-SC; UT-S2	Widely distributed throughout the Mojave and Sonoran Deserts in California and Arizona. Considered a BLM-designated sensitive species in the state of Arizona. Inhabits rocky flats and hillsides, lava flows, and large outcrops associated with desert creosotebush communities at elevations below 6,000 ft.	×	×	
Coachella Valley fringe-toed lizard	<i>Uma inornata</i>	ESA-T; CA-T; CA-S1	Endemic to the Coachella Valley of Riverside County, California. Inhabits sparsely vegetated, windblown sand dunes and sandy flats with fine, loose sand for burrowing at elevations below 1,600 ft.	×		
Colorado Desert fringe-toed lizard	<i>Uma notata</i>	BLM-S; CA-S2	Known from the Sonoran Desert in California from the Salton Sea east to the Colorado River and south to Baja California. Inhabits sparsely vegetated, arid areas with windblown sand, including dunes, flats, and washes, at elevations below 1,600 ft.	×	×	×
Common kingsnake	<i>Lampropeltis getula</i>	BLM-S; CO-SC; CO-S1	Extensive range. In Colorado, found in areas dominated by shortgrass prairie, including floodplains, rural residential areas, and near streams.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Reptiles (Cont.)</i>						
Coronado skink	<i>Eumeces skiltonianus interparietalis</i>	BLM-S; CA-S1	Range encompasses the coastal range of southern California through the north Pacific coast region of Baja California, Mexico. Inhabits grasslands, woodlands, and chaparral communities, especially in open sunny areas. Often found near the edges of creeks and rivers.	×	×	
Desert iguana	<i>Dipsosaurus dorsalis</i>	BLM-S; UT-SC	Range is southwestern United States and parts of Mexico from below sea level in desert sinks to 5,000 ft in elevation. Occurs in Utah along the Virgin River in the vicinity of Beaver Dam Wash. Its range in the United States is closely associated with that of creosotebush.	×	×	
Desert massasauga	<i>Sistrurus catenatus edwardsii</i>	AZ-WSC; AZ-S1	Wide range in North America, but only two isolated populations in Arizona, where it is found in tobosa grassland along sloping bajadas with surface rocks.	×	×	
Desert night lizard	<i>Xantusia vigilis</i>	UT-SC; UT-S2	Arid and semiarid habitats among fallen leaves and trunks of yuccas, agaves, cacti, and other large plants; also in crevices of rock outcroppings and under logs and bark of foothill pines; ranges locally into pinyon-juniper, sagebrush-blackbrush, and chaparral-oak.	×	×	
Desert rosy boa	<i>Charina trivirgata gracia</i>	BLM-S; FWS-SC	Known from southeastern California and western Arizona. Arid scrublands, rocky deserts, and canyons with permanent or intermittent streams.	×	×	×
Desert spiny lizard	<i>Sceloporus magister</i>	BLM-S; CO-S2	Found in southwestern states and Mexico. Colorado habitat includes shrub-covered banks and rocky areas near streams or arroyos.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<b>Reptiles (Cont.)</b>						
Desert tortoise	<i>Gopherus agassizii</i>	ESA-T; ESA-C; BLM-S; CA-T; AZ-WSC; NV-P; NV-S2; UT-S1	Occurs in the Mojave and Sonoran Deserts in desert creosotebush communities on firm soils for digging burrows, along riverbanks, washes, canyon bottoms, creosote flats, and desert oases. Mojave populations north and west of the Colorado River are listed as threatened under the ESA; Sonoran populations south and east of the Colorado River are candidates for listing under the ESA.	×	×	×
Flat-tailed horned lizard	<i>Phrynosoma mcallii</i>	BLM-S; AZ-WSC; AZ-S2; CA-S2	Known primarily from the Imperial Valley in California. Inhabits sandy desert hardpan or gravel flats with sparse vegetation and low species diversity at elevations below 850 ft.	×	×	×
Gila monster	<i>Heloderma suspectum</i>	BLM-S; NV-P; FWS-SC; CA-S1; NV-S2; UT-S1	Scattered distribution in the Mojave and Sonoran Deserts. Occurs in rocky, deeply incised topography and riparian habitat, desertscrub, thorn scrub, xero-riparian, oak woodland, and semidesert grassland. On lower mountain slopes, rocky bajadas, canyon bottoms, and arroyos at elevations below 3,950 ft.	×	×	×
Gray-banded kingsnake	<i>Lampropeltis alterna</i>	NM-E; NM-S1	Inhabits dry, rocky desert terrain, including desert flats, rocky hillsides, canyons, escarpments, limestone ledges, roadcuts, and mountain gaps.	×	×	
Green rat snake	<i>Senticolis triaspis</i>	NM-T; NM-S1	Range extends from southeastern Arizona and southwestern New Mexico, into Mexico and Costa Rica. In the United States, habitat includes woodlands and chaparral of rocky mountain canyons near streams.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<b>Reptiles (Cont.)</b>						
Longnose leopard lizard	<i>Gambelia wislizenii</i>	BLM-S; CO-SC; CO-S1	Range is western United States and Mexico. In Colorado, found in greasewood and sagebrush on broad outwash plains at elevations below 5,200 ft.	×	×	
Massasauga	<i>Sistrurus catenatus</i>	ESA-C; BLM-S; CO-SC; CO-S2	Range from Ontario to Mexico; in Colorado, inhabits dry plains grassland and sandhill areas.	×		
Mexican garter snake	<i>Thamnophis eques</i>	BLM-S; NM-E; NM-S1	Inhabits permanent water with vegetation, including stock tanks, ponds, cienegas, cienega streams, and riparian woods. Also, in or near water in highland canyons with pine-oak forest and pinyon-juniper woodland, and will enter mesquite grassland and desert areas along valleys and stream courses.	×		
Mexican rosy boa	<i>Charina trivirgata trivirgata</i>	BLM-S; FWS-SC; AZ-S1	Sonoran Desert near rocky hillsides and rock outcroppings.	×	×	×
Midget faded rattlesnake	<i>Crotalus oreganus concolor</i>	BLM-S; CO-SC	Endemic to an area of Wyoming, Colorado, and Utah.	×		
Milk snake	<i>Lampropeltis triangulum</i>	BLM-S	Occurs throughout much of southern Colorado and northern New Mexico at elevations below 8,000 ft. Inhabits shortgrass prairie, sandhills, shrubby hillsides, pinyon-juniper woodlands, and arid river valleys.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<b>Reptiles (Cont.)</b>						
Mojave fringe-toed lizard	<i>Uma scoparia</i>	BLM-S; AZ-WSC; AZ-S1	Known from sandy habitats in the Mojave Desert from Death Valley south to the Colorado River near Blythe, California, and extreme western Arizona. Inhabits sparsely vegetated desert areas with fine windblown sand, including dunes, flats, and washes at elevations below 3,000 ft.	×	×	×
Mojave rattlesnake	<i>Crotalus scutulatus</i>	BLM-S; FWS-SC; UT-SC; UT-S1	Occurs only in the extreme southwestern corner of Utah, where it can be found in barren desert and desertscrub habitats.	×	×	
Mojave shovel-nosed snake	<i>Chionactis occipitalis occipitalis</i>	AZ-S1	Known only from Arizona in sparsely vegetated desert areas on rocky slopes, dunes, washes, and sandy flats.	×	×	×
Mottled rock rattlesnake	<i>Crotalus lepidus lepidus</i>	NM-T; NM-S2	Known to occur in the Guadalupe Mountains in southern New Mexico. Inhabits mountain areas of boulders and rocks, including talus slopes and pinyon-juniper woodlands.	×	×	
Mountain skink	<i>Eumeces callicephalus</i>	NM-T; NM-S1	Occurs in rocky pine and oak habitats in the mountains, particularly in canyon riparian and hillside situations.	×	×	
Narrow-headed gartersnake	<i>Thamnophis rufipunctatus</i>	BLM-S; AZ-WSC; FWS-SC; AZ-S1; BLM-S; NM-T; NM-S2	Occurs in Arizona, New Mexico, and Mexico along rocky streams with abundant riparian vegetation, in areas of pinyon-juniper, oak-pine, or ponderosa pine. Bank vegetation is Arizona alder, velvet ash, willows, and canyon grape.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Reptiles (Cont.)</i>						
New Mexico ridge-nosed rattlesnake	<i>Crotalus willardi obscurus</i>	ESA-T; AZ-S1; NM-E; NM-S1	Known only in the Animas, Peloncillo, and Sierra de San Luis Mountains of New Mexico, Arizona, and Mexico. Inhabits Madrean evergreen woodland and Petran montane forest communities above 5,000 ft. Also found in foothill canyons in pinyon-juniper woodland, and canyon bottoms with alder, box elder, and maple.	×		
Northern Mexican gartersnake	<i>Thamnophis eques megalops</i>	ESA-C; AZ-WSC; AZ-S1	Occurs in New Mexico, Mexico, and Arizona, where its habitat is densely vegetated habitat surrounding cienegas, cienega-streams, and stock tanks in generally open areas.	×	×	
Northern red-diamond rattlesnake	<i>Crotalus ruber ruber</i>	CA-S2	Endemic to California from rocky areas of bare rock-talus-scrub, chaparral shrubland, desertscrub, thorn scrub, open chaparral, mesquite/cactus, and pine-oak woodland communities. Occurs at elevations below 2,950 ft.	×		
Northern sagebrush lizard	<i>Sceloporus graciosus graciosus</i>	BLM-S	Inhabits sagebrush and other types of shrublands. Also occurs in pinyon-juniper woodland and openly wooded areas of ponderosa pine or Douglas-fir. Regularly perches on rocks, logs, or snags.	×		
Plainbelly water snake	<i>Nerodia erythrogaster</i>	NM-E; NM-S1	Occurs in aquatic and wetland habitats, with permanent or semipermanent water, including forested and shrubby swamps, marshes, pond and lake edges, ditches, and slow streams.	×		
Redback whiptail	<i>Aspidoscelis xanthonota</i>	FWS-SC; AZ-S2	Known from Arizona and adjacent Mexico. In canyons and hills in juniper-oak woodlands, in Sonoran Desert upland habitats, among dense shrubby vegetation, and along streams and arroyos.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<b>Reptiles (Cont.)</b>						
Ridgenose rattlesnake	<i>Crotalus willardi</i>	NM-E; NM-S1	Inhabits montane areas of pine-oak, oak scrub, oak-juniper, and pine-fir woodland, foothill canyons in pinyon-juniper woodland, and canyon bottoms with sycamore, alder, box elder, and maple, along stream courses, rock outcrops, or downed logs.	×	×	
San Francisco garter snake	<i>Thamnophis sirtalis tetrataenia</i>	ESA-E; CA-E; CA-S2	Occurs near freshwater marshes, ponds, and slow-moving streams. Seeks cover in bankside vegetation.	×	×	
Sand dune lizard	<i>Sceloporus arenicolus</i>	ESA-P; BLM-S; NM-E; NM-S1	Occurs in the vicinity of active and semistabilized sand dunes, primarily on the Mescalero Sands in southeastern New Mexico and Monahan Sandhills in Texas, at elevations of 2,550 to 4,595 ft.	×	×	
Sidewinder	<i>Crotalus cerastes</i>	BLM-S; UT-SC; UT-S2	Known to occur in the project area from Lincoln County, Nevada, and Washington County, Utah. Occurs nearly exclusively in open sandy habitat in creosote and sand sage communities. During periods of inactivity, populations occupy underground burrows of rodents or tortoises.	×	×	
Sierra alligator lizard	<i>Elgaria coerulea palmeri</i>	BLM-S; NV-P; NV-S2	Inhabits woodlands, forests, and grasslands in the Sierra Nevada Mountains. Commonly found under rocks or other cover.	×	×	
Southern rubber boa	<i>Charina umbratica</i>	CA-T; CA-S2; FWS-SC	Found only in a few disjunct areas in montane southern California. Inhabits mixed-coniferous montane forests at elevations between 5,000 and 9,000 ft, often under rocks or logs.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<b>Reptiles (Cont.)</b>						
Southwestern pond turtle	<i>Actinemys marmorata pallida</i>	CA-S2	Uses ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches within woodland, forest, and grassland habitats. Prefers slow-moving, shallow waters with abundant vegetation, and either rocky or muddy bottoms. Logs, rocks, cattail mats, and exposed banks are critical habitat components for thermoregulatory behavior.	×	×	×
Speckled rattlesnake	<i>Crotalus mitchellii</i>	BLM-S; UT-S1; UT-SC	Native to the southwestern United States and parts of Mexico. Found only in the Mojave Desert in Utah.	×	×	
Texas horned lizard	<i>Phrynosoma cornutum</i>	BLM-S	Flat, open, generally dry country with little plant cover, except for desert scrub, bunchgrass, and cactus. Occurs in areas of loose soil that is sandy, loamy, or rocky.	×	×	
Triploid Colorado checkered whiptail	<i>Aspidoscelis neotesselata</i>	CO-S2	Endemic to Colorado in the Arkansas River Valley. Occurs on valleys, arroyos, canyons, and on hillsides within herbaceous grassland, shrublands, chaparral, and coniferous woodlands. Utilizes sites characterized by plains, grasslands, or juniper woodlands at elevations below 7,000 ft.	×	×	
Tucson shovel-nosed snake	<i>Chionactis occipitalis klauberi</i>	ESA-C; BLM-S; AZ-S1	Endemic to Arizona from Pima, Pinal, and Maricopa Counties in creosote-mesquite floodplain habitats with soft, sandy, loam soils and sparse gravel.	×	×	×
Two-striped garter snake	<i>Thamnophis hammondi</i>	BLM-S; CA-S2	Range is along coastal southern California. Generally found around pools, creeks, cattle tanks, and other water sources.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<b>Reptiles (Cont.)</b>						
Western banded gecko	<i>Coleonyx variegatus</i>	BLM-S; UT-SC; UT-S2	Inhabits desertscrub habitat along rocky hillsides and sandy flats and washes of canyon lands.	×	×	
Western blind snake	<i>Leptotyphlops humilis</i>	BLM-S; UT-SC; UT-S1	Range is the southwestern United States and into Mexico at elevations below sea level in desert sinks to 5,000 ft. Fossorial, generally occurring in sandy areas, alluvial deposits, and other areas with loose soils. May sometimes be found under rocks or wood debris, among plant roots, or in crevices.	×	×	
Yuma Desert fringe-toed lizard	<i>Uma rufopunctata</i>	BLM-S; AZ-WSC; FWS-SC; AZ-S2	Restricted to extreme southwestern Arizona and adjacent Mexico. Known from the Mohawk and Yuma dune systems in Yuma County, Arizona, as well as the Pinta Sands in Pima County, Arizona. Restricted to sparsely vegetated, fine, windblown sand dunes, flats, riverbanks, and washes of very arid desert.	×	×	
Zebra-tailed lizard	<i>Callisaurus draconoides</i>	BLM-S; UT-SC; UT-S2	Occurs on open desert habitat, often in wash bottoms or other areas sparsely vegetated with creosote.	×	×	
<b>Birds</b>						
Abert's towhee	<i>Pipilo aberti</i>	NM-T; NM-S1	Inhabits woodlands and thickets along rivers and streams.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<b>Birds (Cont.)</b>						
American peregrine falcon	<i>Falco peregrinus anatum</i>	BLM-S; AZ-WSC; NM-T; CO-SC; CO-S2; NM-S2; FWS-SC	Delisted from the ESA in 1999, populations have reoccupied much of the historic habitat in California and Arizona. Nests along cliffs and bluffs, as well as in urban areas on buildings. Prefers open areas to hunt for other bird species and small mammals.	×	×	×
American redstart	<i>Setophaga ruticilla</i>	AZ-WSC; AZ-S1	Breeding habitat is composed of mature and second-growth wooded habitats. Deciduous and mixed deciduous-coniferous forest; old-growth forests with regenerating trees, thickets, small groves, and swamps.	×		
American three-toed woodpecker	<i>Picoides dorsalis</i>	UT-SC; NV-S2; UT-S2	Year-round resident of montane coniferous forests in Utah. Nests in loose colonies in spruce, tamarack, pine, cedar, and aspen trees. Forages for insects on scaly-barked trees, such as spruce, hemlock, lodgepole pine, and tamarack.	×	×	
American white pelican	<i>Pelecanus erythrorhynchos</i>	BLM-S; FWS-SC; CO-S1; UT-SC; NV-S2; UT-S1	May occur as a summer resident in large reservoirs within the project area. Suitable habitat does not occur on any of the proposed SEZs in Utah; however, flocks may be observed migrating through each SEZ.	×	×	×
Arizona bell's vireo	<i>Vireo bellii arizonae</i>	BLM-S; CA-E; CA-S1	A summer resident of willow and mesquite riparian habitat of the lower Colorado River Valley. Historically occurred throughout the lower Colorado River, currently known in the solar analysis area from Yuma, Arizona.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Birds (Cont.)</i>						
Arizona grasshopper sparrow	<i>Ammodramus savannarum ammolagus</i>	NM-E; NM-S1	Restricted to grasslands in southeast Arizona, southwest New Mexico, northern Sonora, and Chihuahua. Within New Mexico, limited to well-developed grasslands in the southern Animas and western Playas valleys.	×	×	
Baird's sparrow	<i>Ammodramus bairdii</i>	BLM-S; NM-T; FWS-SC; NM-S1	A winter nonbreeding resident in the southwestern United States and northern Mexico. Nonbreeding habitat includes open grasslands and overgrown fields.	×	×	
Bald eagle	<i>Haliaeetus leucocephalus</i>	BLM-S; CA-E; CA-S2; CO-T; NV-P; AZ-WSC; NM-T; FWS-SC; CO-S1; NM-S1; NV-S1; UT-SC; UT-S1	Found near large bodies of water or free-flowing rivers with abundant fish and waterfowl prey. Nesting occurs in tall trees near bodies of water; winters near open water. Occasionally forages in arid shrubland habitats.	×	×	×
Bank swallow	<i>Riparia riparia</i>	BLM-S; CA-T; CA-S2	Widespread summer breeding range in North America; winters in Central and South America. Habitat includes open and partly open situations, frequently near flowing water. Nests in deep sand, dirt, or gravel banks. Feeds primarily on flying insects.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Birds (Cont.)</i>						
Barrow's goldeneye	<i>Bucephala islandica</i>	BLM-S; CO-S2; NM-S2	A winter resident in southern Colorado. Occurs on larger lakes and rivers.	×	×	×
Belding's savannah sparrow	<i>Passerculus sandwichensis beldingi</i>	CA-E	Year-round resident in southern California coastal marshes from San Diego County to Santa Barbara County. Also known from Baja California, Mexico. Occurs in salt marshes. Nests on the ground in natural depressions or scrapes.	×		
Bell's vireo	<i>Vireo bellii</i>	NM-T; FWS-SC; NM-S2	Inhabits dense shrublands or woodlands along lower-elevation riparian areas among willows, scrub oak, and mesquite. May nest in any successional stage with dense understory vegetation.	×	×	×
Belted kingfisher	<i>Megaceryle alcyon</i>	AZ-WSC; AZ-S2	Inhabits rivers, brooks, ponds, lakes, coasts, streams, creeks, mangroves, swamps, and estuaries.	×	×	
Bendire's thrasher	<i>Toxostoma bendirei</i>	BLM-S	A summer resident in localized areas throughout the SEZ region. Uses a variety of desert habitats with fairly large shrubs or cacti and open ground, or with open woodland with scattered shrubs and trees, between 0 and 1,800 ft in elevation.	×	×	×
Black skimmer	<i>Rynchops niger</i>	CA-S1	Known in California from coastal, estuarine, marsh, and wetland habitats, including the Salton Sea in Imperial and Riverside Counties. Breeding habitats are usually small islands or impounded levees along aquatic habitats; nests are constructed on bare ground. Winter habitat includes mud flats in estuaries as well as urban beaches associated with estuaries or protected harbors and near river mouths.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Birds (Cont.)</i>						
Black swift	<i>Cypseloides niger</i>	FWS-SC; UT-SC; UT-S1	Aerial; forages over forests and in open areas. Nests behind or next to waterfalls and wet cliffs.	×	×	
Black tern	<i>Chlidonias niger</i>	BLM-S; FWS-SC	A migratory transient in the southwestern United States. Inhabits wet grasslands, marshes, and flooded agricultural fields. Also occurs along playa margins and open water habitats in desert lowland areas.	×	×	
Black-and-white warbler	<i>Mniotilta varia</i>	AZ-S1	Considered a migratory transient in the western United States. Nonbreeding habitat varies from early successional disturbed areas to mature forests.	×		
Black-bellied whistling-duck	<i>Dendrocygna autumnalis</i>	AZ-WSC	Inhabits estuaries, rivers, ponds, stock tanks, marshes, and swamps. Often found in riparian areas or thickets. Uses natural cavities in live or dead trees for nesting.	×	×	
Black-necked stilt	<i>Himantopus mexicanus</i>	AZ-S2	Patchily distributed in central and southern California; rarely occurs in Arizona. Populations in California have no federal or state status or rank. Populations in Arizona, however, are imperiled in the state (S2). Populations occur in the Central Valley of California, from San Francisco south along the Pacific Coast and east to the Colorado River. Inhabits barren, estuarine, and fresh emergent wetlands; irrigated grain crops; irrigated hayfields; lacustrine, riverine, and saline emergent wetlands; and wet meadows.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Birds (Cont.)</i>						
Bobolink	<i>Dolichonyx oryzivorus</i>	BLM-S; AZ-WSC; AZ-S1; UT-S2; UT-SC	A long-distance migrant with preferred habitat of herbaceous wetland, cropland-hedgerow, and grassland-herbaceous. Isolated breeding populations in northern Utah, where preferred habitat is wet meadow, wet grassland, and irrigated agricultural areas.	×	×	
Boreal owl	<i>Aegolius funereus</i>	CO-S2; NM-S2	Prefers mature, structurally complex spruce-fir forest close to open grassy locations. Also associated with habitats composed of dense coniferous forest, mixed forest, or alder, aspen, or stunted spruce thickets.	×		
Broad-billed hummingbird	<i>Cynanthus latirostris</i>	NM-T; NM-S2	Riparian woodlands at low to moderate elevations (2,800 to 5,500 ft), characterized by cottonwood or sycamore trees. Nests in a variety of trees, shrubs, and forbs. Also occurs in Chihuahuan desertscrub in open stands of creosotebush and large succulents.	×		
Brown-crested flycatcher	<i>Myiarchus tyrannulus</i>	CA-S2	Occurs in riparian woodlands or forests dominated by cottonwoods and willows in southern California. The presence of woodpeckers or other cavity-excavating species is important.	×	×	
Buff-collared nightjar	<i>Caprimulgus ridgwayi</i>	NM-E	Occurs in summer in southeastern Arizona and extreme southwestern New Mexico. Inhabits open woodland, including scrub, deciduous forest, and hillsides with scattered trees, most frequently in arid situations.	×	×	
Cactus ferruginous pygmy-owl	<i>Glaucidium brasilianum cactorum</i>	BLM-S; AZ-WSC; FWS-SC; AZ-S1	Occurs in Arizona, Texas, and Mexico. Habitat in Arizona is streamside cottonwoods, willows, and mesquite bosques, with saguaros.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Birds (Cont.)</i>						
California black rail	<i>Laterallus jamaicensis coturniculus</i>	BLM-S; AZ-WSC; CA-T; AZ-S1; CA-S1; FWS-SC	Within the analysis area, this species is known year-round from the Imperial Valley and lower Colorado River in Arizona and California. May be locally common in marshes along the Colorado River or canal systems.	×	×	×
California brown pelican	<i>Pelecanus occidentalis californicus</i>	CA-S1	Generally restricted to California coastal areas, including those near shores, bays, sounds, lagoons, river mouths, scrub-shrub wetlands, bare rock/talus/scree, cliffs, and sand dunes, with nesting occurring on islands.	×	×	
California condor	<i>Gymnogyps californianus</i>	ESA-E; CA-E; CA-S1	A permanent resident of the semiarid, rugged mountain ranges surrounding the San Joaquin Valley. Occurs at elevations between sea level and 9,000 ft.	×		
California gull	<i>Larus californicus</i>	CA-S2	Inhabits seacoasts, bays, estuaries, mudflats, marshes, irrigated fields, lakes, ponds, agricultural lands, and urban areas. Islands, lakeshores, and pond shores having open sandy or gravelly areas serve as nesting habitat.	×	×	
California spotted owl	<i>Strix occidentalis occidentalis</i>	BLM-S	Range encompasses part of California and northern Baja California, Mexico. Typical habitat is dense, multilayered evergreen forest that includes a variety of tree species, large trees, and open areas under the canopy.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Birds (Cont.)</i>						
Cattle egret	<i>Bubulcus ibis</i>	AZ-S1	Known from southern California and southwestern Arizona. Primary habitat communities include herbaceous, scrub-shrub, forested, and riparian wetlands as well as croplands and herbaceous grasslands. Within those communities, wet pasture land, marshes, fresh and brackish locations, dry fields, agricultural areas, and garbage dumps are utilized.	×	×	×
Clark's grebe	<i>Aechmophorus clarkii</i>	BLM-S; AZ-WSC	A year-round resident in the lower Colorado River Valley. Considered common in California (not ranked); less common in Arizona (S3), where it is state-protected and listed as a BLM-designated sensitive species. Primarily associated with permanent open water areas, including marshes, lakes, bays, and rivers.	×	×	
Coastal California gnatcatcher	<i>Polioptila californica californica</i>	ESA-T; CA-S2	Inhabits dry coastal slopes, washes, and mesas within distinctive subassociations of the coastal sage scrub plant community.	×		
Columbian sharp-tailed Grouse	<i>Tympanuchus phasianellus columbianus</i>	BLM-S; CO-SC; CO-S2	Native range includes the western United States and British Columbia. Inhabits native bunchgrass and shrub-steppe communities.	×		
Common black-hawk	<i>Buteogallus anthracinus</i>	BLM-S; AZ-WSC; NM-S2; FWS-SC	An obligate riparian nester, dependent on mature riparian habitats supported by permanent flowing streams. Nests in groves of trees in riparian areas. Also known to occur in mixed savannah, dunes, and grasslands where a water source is nearby.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Birds (Cont.)</i>						
Common ground-dove	<i>Columbina passerina</i>	NM-E; NM-S1	Previously most common in open country with trees and bushes and in open, sandy areas in forest and savannah, but now, over much of its range, it is found primarily on cultivated land, in villages, and in towns at elevations below 5,400 ft. Nests in shrubs or low trees.	×		
Costa's hummingbird	<i>Calypte costae</i>	NM-T; NM-S2	Inhabits desert and semidesert, arid brushy foothills, chaparral; during migration and in winter, also found in adjacent mountains and open meadows and gardens. Nests in trees, shrubs, vines, or cacti.	×		
Crested caracara	<i>Caracara cheriway</i>	AZ-WSC; AZ-S1	Inhabits paloverde-saguaro desert, and open country, pastureland, cultivated areas, and semidesert in both arid and moist habitats. Prefers low ground vegetation with scattered tall vegetation for nesting.	×	×	
Crissal thrasher	<i>Toxostoma crissale</i>	CA-SC; FWS-SC	A year-round resident in the deserts of southeastern California and southwestern Arizona. Occupies dense thickets of scrub or low trees in desert riparian and desert wash habitats. Also occurs in washes within pinyon-juniper habitats.	×	×	×
Dickcissel	<i>Spiza americana</i>	NM-S1	Occurs in grassland, meadows, savanna, cultivated lands, brushy fields. Nests on the ground in grass, tall weeds, or low shrubs or trees. Prefers habitat with dense, moderate to tall vegetation and moderately deep litter. Suitable habitats are found in old fields, hayfields, fence rows, hedge rows, road rights-of-way, planted cover, and moderately grazed prairie.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Birds (Cont.)</i>						
Eastern bluebird	<i>Sialia sialis</i>	NM-S1	Occurs in forest edges, open woodlands, and partly open locations with scattered trees, from coniferous or deciduous forest to riparian woodland. Also occurs in pine woodlands or savannas. Nests are in natural cavities, old woodpecker holes, bird boxes, or similar sites.	×	×	×
Elegant trogon	<i>Trogon elegans</i>	NM-E; NM-S1	Inhabits open woodland, pine-oak association, scrubby woodland and second-growth, primarily in arid or semiarid situations, less frequently in humid woodland.	×		
Elf owl	<i>Micrathene whitneyi</i>	CA-E; CA-S1	A rare spring and summer resident of the lower Colorado River Valley. Nests in desert riparian habitat dominated by saltcedar. Also utilizes tall trees and snags, such as cottonwood, sycamore, willow, mesquite, and saguaro cactus.	×	×	
Ferruginous hawk	<i>Buteo regalis</i>	BLM-S; AZ-WSC; FWS-SC; AZ-S2; CO-SC; NM-S2; NV-S2; UT-S2	Occurs in grasslands, sagebrush and saltbrush habitats, and the periphery of pinyon-juniper woodlands. Nests in tall trees or on rock outcrops along cliff faces. May forage in various desert shrubland habitats.	×	×	×
Forster's tern	<i>Sterna forsteri</i>	CO-S2	Inhabits large freshwater marshes and lakes with deep water and extensive reed beds or muskrat burrows.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Birds (Cont.)</i>						
Gila woodpecker	<i>Melanerpes uropygialis</i>	CA-E; CA-S1	A fairly uncommon year-round resident in southern California and southwestern Arizona along the Colorado River. Occurs primarily in desert riparian and desert wash habitats, but also found in orchard-vineyard and urban habitats.	×	×	×
Gilded flicker	<i>Colaptes chrysoides</i>	CA-E; CA-S1	Occurs in stands of saguaro cactus, Joshua tree, and cottonwood or ironwood forests in southern Arizona and southern California along the Colorado River.	×	×	
Golden eagle	<i>Aquila chrysaetos</i>	BLM-S	A year-round resident in North America. Occurs primarily in open country, in prairies, open woodlands, barren areas, deserts, and in hilly or mountainous regions. Nests on rock ledges or in large trees.	×	×	
Grasshopper sparrow	<i>Ammodramus savannarum</i>	BLM-S; UT-S1; UT-SC	Breeds in northern Utah where preferred habitat is grasslands of intermediate height, moderately deep litter, and sparse woody vegetation.	×	×	
Gray catbird	<i>Dumetella carolinensis</i>	AZ-WSC; AZ-S1	Breeds in Canada through the United States. In Arizona, habitat is forest edge and riparian areas. Nests in scrub willow and alder.	×	×	
Gray hawk	<i>Buteo nitidus</i>	BLM-S	Resident of southern portions of Arizona, New Mexico, Texas, and south to South America. Inhabits open woodland, pasturelands, and open country with scattered trees in arid situations. Also found in riparian woodlands near open areas.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Birds (Cont.)</i>						
Gray vireo	<i>Vireo vicinior</i>	BLM-S; NM-T; CA-S2; CO-S2; NM-S2; FWS-SC	An uncommon summer resident in arid pinyon-juniper and chaparral habitats of southern California. Elevation ranges between 2,000 and 6,500 ft.	×	×	×
Gray-headed junco	<i>Junco hyemalis caniceps</i>	CA-S1	Occupies coniferous, mixed, and deciduous forests, forest edges and clearings, bogs, open woodlands, brushy areas adjacent to forest, and burned-over lands.	×		
Great egret	<i>Ardea alba</i>	BLM-S; AZ-WSC; AZ-S1	A year-round resident in the lower Colorado River Valley. Primarily associated with areas of open water, such as marshes, estuaries, lagoons, lakes, ponds, rivers, and flooded fields.	×	×	×
Greater sage-grouse	<i>Centrocercus urophasianus</i>	ESA-C; BLM-S; UT-SC; UT-S2	Occurs in plains, foothills, and mountain valleys dominated by sagebrush ( <i>Artemisia</i> spp.). Lek sites are located in relatively open areas surrounded by sagebrush or in areas where sagebrush density is low. Nesting usually occurs on the ground where sagebrush density is higher. Some populations may travel up to 60 mi between summer and winter habitats.	×	×	×
Greater sandhill crane	<i>Grus canadensis tabida</i>	CO-S2	Inhabits open, shallow, freshwater wetlands adjacent to grassland or short-vegetation uplands dominated by <i>Artemisia</i> spp., <i>Potentilla</i> spp., and <i>Populus</i> spp. Breeding habitat includes marshes, swamps, and bulrush and sedge meadows generally larger than 2.5 acres in size. Nesting wetlands are secluded and free from disturbance.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Birds (Cont.)</i>						
Green kingfisher	<i>Chloroceryle americana</i>	AZ-S2	A summer breeder in southwestern North America from Arizona, New Mexico, and Texas. Populations are not known to occur in California. Inhabits arroyos and riparian, flooded forest, coastal lagoon, mangrove, marsh, and forested wetland habitats. Nests in horizontal burrows dug in the banks of streams. Elevations range between 450 ft and 4,600 ft.	×	×	
Gull-billed tern	<i>Gelochelidon nilotica</i>	CA-S1	Breeds along the Salton Sea and in the San Diego Bay in southern California. Occupies primarily coastlines, salt marshes, estuaries, lagoons, plowed fields, and, less frequently, rivers, lakes, and freshwater marshes. Requires isolated nesting habitat composed of small, bare islets of fine clay.	×		
Gunnison sage-grouse	<i>Centrocercus minimus</i>	ESA-UR; BLM-S; CO-SC; CO-S1	A year-round resident in the Gunnison Basin in south-central Colorado. Inhabits large expanses of sagebrush with mixed grasses and forbs.	×	×	×
Harlequin duck	<i>Histrionicus histrionicus</i>	BLM-S	Occurs in river, riparian woodland, and subalpine marsh, at elevations where stream conditions provide enough moisture for emergent plants, or for deciduous trees and shrubs.	×	×	
Hepatic tanager	<i>Piranga flava</i>	CA-S1	A summer resident in the SEZ region in southern California and southwestern Arizona. Inhabits open coniferous forests, montane pine-oak forests, riparian woodlands, and pine savanna. Nests high in coniferous or deciduous trees.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<b>Birds (Cont.)</b>						
Interior least tern	<i>Sterna antillarum athalassos</i>	ESA-E; CO-E; NM-E; CO-S1; NM-S1	A migratory transient in the southwestern United States. Inhabits beaches and sandbars of large rivers and lakes. May occasionally be observed at open water habitats and playas in the southwestern United States.	×	×	×
Inyo California towhee	<i>Pipilo crissalis eremophilus</i>	ESA-T; CA-E; CA-S1	The known population is centered on Benko Canyon in California. Inhabits desert riparian areas and dense thickets around desert springs and streams.	×	×	
Least Bell's vireo	<i>Vireo bellii pusillus</i>	ESA-E; CA-E; CA-S2	Small summer range in southern California and Baja California. Inhabits dense brush, willow-cottonwood forest, streamside thickets, and scrub oak in arid regions near water. Nests in low trees in riparian habitats. Will also inhabit cultivated areas.	×		
Least bittern (western)	<i>Ixobrychus exilis (hesperis)</i>	BLM-S; AZ-WSC; NV-P; FWS-SC; CA-S1; CA-SC; NV-S2	A year-round resident in the lower Colorado River Valley. Breeding habitat includes freshwater and brackish marshes with dense, tall growths of aquatic or semiaquatic vegetation. Winter habitat is primarily composed of brackish and saline swamps and marshes.	×	×	×
Least tern	<i>Sterna antillarum</i>	ESA-E; CO-E; CO-S1	Spring and fall migrant and summer visitor to Colorado. Inhabits bare sandy shorelines along reservoirs, lakes, and rivers.	×	×	
LeConte's thrasher	<i>Toxostoma lecontei</i>	BLM-S; NV-P; FWS-SC; NV-S2	Known from Arizona, southern California, and southern Nevada, where it is uncommon throughout its range. Inhabits saltbush-cholla scrub communities in desert flats, dunes, or alluvial fans.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Birds (Cont.)</i>						
Lesser prairie-chicken	<i>Tympanuchus pallidicinctus</i>	ESA-C; CO-T; CO-S2; BLM-S; NM-S2	Common resident in southeastern Baca County, and Kiowa and Prowers Counties, Colorado. Inhabits mixed grass-dwarf shrub communities that occur on sandy soils, and agricultural areas.	×	×	
Lewis's woodpecker	<i>Melanerpes lewis</i>	UT-SC; UT-S2	A year-round resident in the southwestern United States. Inhabits open ponderosa pine, Douglas-fir, pinyon-juniper, mixed conifer, and oak forests. Prefers areas with understory grasses and shrubs to support insect prey populations. Nests in cavities of dead or dying trees and stumps.	×	×	×
Loggerhead shrike	<i>Lanius ludovicianus</i>	BLM-S; CA-SC; FWS-SC	Known to breed in southern California in the solar analysis area. Breeding habitat includes open woodlands with moderate grass cover interspersed with areas of bare ground.	×	×	
Long-billed curlew	<i>Numenius americanus</i>	BLM-S; CO-S2; UT-SC; NV-S2; UT-S2	May occur as a summer resident throughout the project area. Inhabits short-grass grasslands near standing water. Suitable habitat for this species does not occur on any of the proposed SEZs in Utah; however, flocks may be observed migrating through each SEZ.	×	×	×
Long-eared owl	<i>Asio otus</i>	FWS-SC; AZ-S2	Inhabits deciduous and evergreen forests, orchards, wooded parks, farm woodlots, riparian areas, and desert oases. Nests in trees in old nests of other birds or squirrels; sometimes nests in tree cavities.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Birds (Cont.)</i>						
Lucifer hummingbird	<i>Calothorax lucifer</i>	NM-T; NM-S1	Breeds in southern Arizona, southwestern New Mexico (Peloncillo Mountains), southwestern Texas, and into Mexico. In the United States, inhabits talus slopes, rocky hillsides, dry washes, and other arid habitats in mountain foothills and canyons.	×	×	
Lucy's warbler	<i>Vermivora luciae</i>	BLM-S; CA-S2; CA-SC	Restricted to very limited areas in the Mojave and Colorado Deserts. Occurs in riparian, chaparral, and hardwood woodlands having standing snags or hollow trees. Utilizes almost exclusively mesquite thickets within riparian woodlands. Nonbreeding habitat includes dry washes and riparian forests.	×		
Masked bobwhite	<i>Colinus virginianus ridgwayi</i>	ESA-E; AZ-WSC; AZ-S1	Re-introduced at the Buenos Aires National Wildlife Refuge in Arizona, where the preferred habitat is desert grassland with some brush and tree cover.	×	×	
Mexican spotted owl	<i>Strix occidentalis lucida</i>	ESA-T; AZ-WSC; CO-T; CO-S1; NM-SC; NM-S2; UT-S2	Inhabits deep, sheer-walled canyons in old-age, mixed coniferous forests.	×	×	
Mississippi kite	<i>Ictinia mississippiensis</i>	BLM-S; AZ-WSC	Range is North and South America. In Arizona, breeding habitat is riparian deciduous forests that border desertscrub upland habitats. Also inhabits pecan orchards.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Birds (Cont.)</i>						
Mountain plover	<i>Charadrius montanus</i>	BLM-S; CA-S2; CA-SC; UT-SC; UT-S1	Inhabits prairie grasslands and arid plains and fields. Nests in shortgrass prairies associated with prairie dogs, bison, and cattle. More than 50% of the global population nests in the states of Colorado and New Mexico. May be a winter resident in southern California.	×	×	×
Mountain quail	<i>Oreortyx pictus</i>	BLM-S; NV-P	Scattered occurrences in western North America, from southwestern British Columbia south and east to Idaho, Washington, Oregon, Nevada, California, and Baja California. Uses high-altitude areas on steep slopes with tall, dense shrubs, close to water within brushy mountain sides, coniferous forest, and mixed forests. Elevations typically range from 4,000 to 10,000 ft.	×		
Neotropic cormorant	<i>Phalacrocorax brasilianus</i>	NM-T; NM-S2	Inhabits rivers, lakes, marshes, and seacoasts.	×		
Northern aplomado falcon	<i>Falco femoralis septentrionalis</i>	ESA-E; NM-E; NM-S1	Inhabits open rangeland and savanna, semiarid grasslands with scattered trees, mesquite, and yucca. Nests in old stick nests of other raptor species. Nests are located in trees or shrubs in areas of desert grassland.	×	×	×
Northern beardless-tyrannulet	<i>Camptostoma imberbe</i>	NM-E; NM-S1	Breeds in southeastern Arizona, southwestern New Mexico (Guadalupe Canyon), southern Texas, and into Mexico and Central America. Inhabits arid scrub, thickets, mesquite, forest edge, and open riparian woodland. Nests in trees, often near water.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Birds (Cont.)</i>						
Northern buff-breasted flycatcher	<i>Empidonax fulvifrons pygmaeus</i>	AZ-WSC; FWS-SC; AZ-S1	A summer resident of Arizona where it breeds in the Huachuca, Santa Catalina, and Chiricahua Mountains. Habitat is open stands of pine or sycamore.	×		
Northern cardinal	<i>Cardinalis cardinalis superba</i>	CA-S1	Widely distributed throughout eastern and central North America. Rarely occurs in California at the western periphery of its range. The species is a rare inhabitant of riparian areas along the lower Colorado River in California.	×	×	
Northern goshawk	<i>Accipiter gentilis</i>	BLM-S; AZ-WSC; NV-P; FWS-SC; NM-SC; NM-S2; NV-S2	Occurs in mature mountain forest and riparian zone habitats. Nests in trees in mature deciduous, coniferous, and mixed forests. Forages in both heavily forested and relatively open shrubland habitats.	×	×	×
Northern gray hawk	<i>Buteo nitidus maxima</i>	BLM-S; AZ-WSC; FWS-SC	A migratory bird that arrives in Arizona in mid-March and flies south for winter. Arizona habitat is Sonoran riparian deciduous forest and woodlands, and Madrean evergreen woodland.	×	×	
Osprey	<i>Pandion haliaetus</i>	NM-SC; NM-S2	Occurs primarily along rivers, lakes, reservoirs, and seacoasts. Typically builds large stick nests on living or dead trees and also uses numerous man-made structures, such as utility poles, wharf pilings, windmills, microwave towers, chimneys, and channel markers. Nests are usually near or above water.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Birds (Cont.)</i>						
Ovenbird	<i>Seiurus aurocapillus</i>	CO-S2	Uses mid to late successional, closed-canopied deciduous or deciduous-coniferous forests having deep leaf litter and limited understory for breeding season. Forest types include oak-hickory, oak-pine, maple-basswood, maple-birch, maple-birch-beech, hemlock-oak, trembling aspen, and spruce.	×	×	
Peregrine falcon	<i>Falco peregrinus</i>	BLM-S; NV-P; FWS-SC; NV-S2	Occurs in open habitats, including deserts, shrublands, and woodlands that are associated with high, nearly vertical cliffs and bluffs above 200 ft. When not breeding, its activity is concentrated in areas with ample prey, such as farmlands, marshes, lakes, rivers, and urban areas.	×	×	×
Phainopepla	<i>Phainopepla nitens</i>	BLM-S; NV-P; FWS-SC; NV-S2	Known from the southwestern United States and Mexico, where it breeds from central California east to southern Nevada and south to western Texas, including the southern half of Arizona and southern New Mexico. Inhabits desertscrub, mesquite, and pinyon-juniper woodland communities. Also occurs in desert riparian areas and orchards. Nests in trees or shrubs that are 3 to 45 ft above the ground.	×	×	×
Piping plover	<i>Charadrius melodus</i>	ESA-T; CO-E; CO-S1; NM-T	Widespread distribution, but breeds in North America. Known in New Mexico and Colorado as a rare spring and fall migrant. Occurs on sandflats or along bare shorelines of rivers, lakes, reservoirs, or coasts.	×	×	
Plains sharp-tailed grouse	<i>Tympanuchus phasianellus jamesi</i>	CO-E; CO-S1	Resident of Douglas County. Inhabits Gambel oak and other shrublands lacking in conifers. Also occurs in croplands and riparian areas.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<b>Birds (Cont.)</b>						
Prairie falcon	<i>Falco mexicanus</i>	BLM-S	A year-round resident in the Nevada SEZ region, primarily in open habitats in mountainous areas, steppe, grasslands, or cultivated areas. Typically nests in well-sheltered ledges of rocky cliffs and outcrops.	×	×	×
Sharp-tailed grouse	<i>Tympanuchus phasianellus</i>	BLM-S; UT-S1; UT-SC	Widespread range in North America. A resident in Utah, where it requires dense grass and shrubs for nesting, and riparian areas during winter.	×	×	
Short-eared owl	<i>Asio flammeus</i>	BLM-S; CO-S2; NM-S2; UT-SC; UT-S2	Known to occur throughout the project area. Inhabits grasslands, shrublands, and other open habitats. It is nomadic, often selecting unique breeding sites each year, depending on local rodent densities. Nests on the ground near shrubs.	×	×	×
Snowy egret	<i>Egretta thula</i>	BLM-S; AZ-WSC; AZ-S1; CO-S2	Primarily associated with open water areas, such as marshes, estuaries, lagoons, lakes, ponds, rivers and flooded fields. A year-round resident in the lower Colorado River Valley.	×	×	×
Sonoran yellow warbler	<i>Dendroica petechia sonorana</i>	CA-S1	Restricted to the lower Colorado River Valley. Occupies riparian vegetation close to water along streams and wet meadows. Associated with <i>Salix</i> ssp. and <i>Populus</i> ssp. Also uses xeric montane shrub fields, chaparral shrub fields, and mixed-conifer forests having shrubby understories.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Birds (Cont.)</i>						
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	ESA-E; AZ-WSC; CA-E; CO-E; NV-P; NM-E; AZ-S1; CA-S1; NM-S2; NV-S1; UT-S1	Occupies riparian shrublands and woodlands. Nests in thickets, scrubby and brushy areas, open second-growth, swamps, and open woodlands.	×	×	×
Sprague's pipit	<i>Anthus spragueii</i>	ESA-C; AZ-WSC; AZ-S2	Winters in southern states, including grasslands with mid-height vegetation in Arizona. Habitat has moderate litter cover with little to no woody vegetation.	×	×	
Summer tanager	<i>Piranga rubra</i>	CA-S2; FWS-SC	An uncommon summer resident and breeder in desert riparian habitat along the lower Colorado River. Occurs very locally elsewhere in southwestern Arizona and southern California. Inhabits dense stands of cottonwood and willow in riparian areas for feeding and breeding.	×	×	
Swainson's hawk	<i>Buteo swainsoni</i>	BLM-S; NV-P; FWS-SC; CA-S2; NV-S2	Occurs in savanna, open pine-oak woodlands, grasslands, and cultivated lands. Nests in solitary trees, bushes, or small groves.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Birds (Cont.)</i>						
Swainson's thrush	<i>Catharus ustulatus</i>	AZ-S1	Widely distributed throughout North America. Inhabits dense coniferous forests, aspen forests, and willow or alder thickets. Prefers damp forests or forests adjacent to water at elevations between 7,300 and 9,200 ft. Populations in California are apparently secure (S4) and have no federal or state status or rank.	×	×	
Thick-billed kingbird	<i>Tyrannus crassirostris</i>	BLM-S; AZ-WSC; AZ-S2; NM-E; NM-S1	Occurs in Arizona, New Mexico, through Mexico to Guatemala. Breeds in sycamore riparian habitats in Arizona and common in cottonwood-willow forests on the San Pedro River. Inhabits arid scrub, savanna, riparian woodland, clearings in deciduous forest, and open situations with scattered trees.	×	×	
Tricolored blackbird	<i>Agelaius tricolor</i>	BLM-S; CA-S2	Year-round resident from central Oregon south to southern California and northern Baja California, Mexico. Breeds in freshwater marshes among thick vegetation. During migration and winter periods, occurs in open cultivated lands and pastures.	×		
Tropical kingbird	<i>Tyrannus melancholicus</i>	AZ-WSC	Breeds May to June in Arizona, nesting in cottonwoods. Preferred habitat is areas with scattered trees such as savanna, open woodland, forest edge, plantations, residential areas, and agricultural lands.	×		
Trumpeter swan	<i>Cygnus buccinator</i>	NV-P; NV-S1	Inhabits ponds, lakes, and marshes. Breeds in emergent vegetation such as reeds and sedges. Primarily on freshwater.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Birds (Cont.)</i>						
Varied bunting	<i>Passerina versicolor</i>	NM-T; NM-S2	Summer breeding resident in southern Arizona, southern New Mexico, and southern Texas. In New Mexico, this species is known to summer in Carlsbad Caverns National Park and Guadalupe Canyon. Inhabits shrublands, second-growth, and similar habitats consisting of mesquite ( <i>Prosopis</i> spp.). Also found along canyon bottoms.	×	×	
Veery	<i>Catharus fuscescens</i>	AZ-WSC; AZ-S1	Range is North and South America. In Arizona, irregularly breeds in riparian habitats at elevations that provide permanent moisture for emergent plants.	×	×	
Vermilion flycatcher	<i>Pyrocephalus rubinus</i>	CA-S2	Breeding and summer habitat occurs in southeastern California and southwestern Arizona along the Colorado River, as well as in southern California near the Salton Sea. Breeding habitat consists of arid scrub, farmlands, savanna, agricultural areas, and riparian woodlands. Used sites are associated with surface water as well as <i>Populus</i> ssp. and <i>Salix</i> ssp.	×	×	
Violet-crowned hummingbird	<i>Amazilia violiceps</i>	AZ-WSC; NM-T; NM-S1	Resident of northern Sonora, southern Arizona, and southwestern New Mexico. Inhabits scrub, open woodland, forest edge, riparian groves and plantations in arid or semiarid regions.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Birds (Cont.)</i>						
Western burrowing owl	<i>Athene cunicularia hypugaea</i>	BLM-S; FWS-SC; CO-T; AZ-S2; AZ-SC; CA-S2; CA-SC; NM-SC; UT-SC	A year-round resident within the solar analysis area. Occurs locally in open areas with short, sparse vegetation, including grasslands, agricultural fields, and disturbed areas. Nests in burrows created by mammals or tortoises. Local abundance is determined by small mammal prey abundance.	×	×	×
Western snowy plover	<i>Charadrius alexandrinus nivosus</i>	BLM-S; AZ-WSC; NV-P; AZ-S1; CO-S1; CO-SC	Breeds on alkali flats around reservoirs and sandy shorelines. A known summer breeder and winter resident in portions of the six-state study area.	×	×	×
Western yellow-billed cuckoo	<i>Coccyzus americanus occidentalis</i>	ESA-C; AZ-WSC; CA-E; NV-P; CA-S1; NM-SC; NV-S1; UT-S1	Breeds in scattered areas along the lower Colorado River and larger bodies of water in the southwestern United States. Primarily associated with riparian cottonwood and willow forests with dense understory foliage. Nonbreeding habitat includes woodlands and scrub vegetation.	×	×	×
Whiskered screech-owl	<i>Megascops trichopsis</i>	NM-T; NM-S1	A resident from the mountains of southeastern Arizona to Nicaragua, with preferred habitat of pine-oak woodlands.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Birds (Cont.)</i>						
White-faced ibis	<i>Plegadis chihi</i>	BLM-S; AZ-S2; CA-S1; CO-S2; NM-SC; NM-S2; FWS-SC	Forages in fresh emergent wetlands, shallow lacustrine waters, muddy ground of wet meadows, and irrigated or flooded pastures and croplands. Dense, fresh emergent wetlands serve as nesting habitat. Roosts amidst dense, freshwater emergent vegetation, such as bulrushes, cattails, reeds, or low shrubs over water.	×	×	×
White-tailed kite	<i>Elanus leucurus</i>	AZ-S2	Inhabits savanna, open woodlands, marshes, cleared areas, and cultivated fields.	×	×	
Willet	<i>Catoptrophorus semipalmatus</i>	CO-S1	Occurs in large expanses of short, sparse grasslands for nesting and wetland complexes for foraging. Habitat types include marshes, lake margins, and river mouths.	×	×	
Wood duck	<i>Aix sponsa</i>	AZ-S2	Wooded freshwater habitats with an abundance of cover. Inhabits riparian areas, wooded swamps, and freshwater marshes. Areas of shallow, flooded timber and emergent vegetation are preferred.	×	×	
Yellow warbler	<i>Dendroica petechia brewsteri</i>	CA-S2; CA-SC	Inhabits the San Joaquin and Colorado River Valleys. Occupies riparian vegetation close to water along streams and wet meadows. Associated with <i>Salix</i> ssp. and <i>Populus</i> ssp. Also uses xeric montane shrub fields, chaparral shrub fields, and mixed-conifer forests having shrubby understories.	×	×	
Yellow-eyed junco	<i>Junco phaeonotus</i>	NM-T; NM-S2	A resident in southern Arizona, extreme southwestern New Mexico, and into Mexico. Inhabits open coniferous forest;, pine-oak association; and adjacent scrub, brush, pastures, and fields.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<b>Birds (Cont.)</b>						
Yuma clapper rail	<i>Rallus longirostris yumanensis</i>	ESA-E; AZ-WSC; CA-T; NV-P; CA-S1; NV-S1	Inhabits freshwater marshes containing dense stands of cattails. Nests on dry hummocks or in small shrubs among dense cattails or bulrushes along the edges of shallow ponds in freshwater marshes with stable water levels.	×	×	×
<b>Mammals</b>						
Allen's big-eared bat	<i>Idionycteris phyllotis</i>	BLM-S; NV-P; FWS-SC; NV-S1; UT-S2	Known to occur in isolated locations throughout the southwestern United States. Habitat is primarily mountainous, wooded areas composed of ponderosa pine, pinyon-juniper, Mexican woodland and oak brush as well as cottonwood riparian woodland. Occurs within the range of Mohave desertscrub of low-desert ranges to white fir forest zones, with summer ranges occurring at higher elevations. Roosts in caverns, rock fissures, and mines.	×	×	
Amargosa vole	<i>Microtus californicus scirpensis</i>	ESA-E; CA-E; CA-S1	Range is along the Amargosa River in Inyo County, California. Inhabits wetland pockets of bulrush, cattails, salt grass, and willows.	×	×	
American marten	<i>Martes americana</i>	NM-T; NM-S2	Found in dense, deciduous, mixed, or coniferous upland and lowland forest. May use rocky alpine areas.	×		
American mink	<i>Mustela vison</i>	NM-S1	Once considered to be extirpated from New Mexico; now considered extremely rare. Associated with montane riparian areas.	×		
American pika	<i>Ochotona princeps</i>	NV-P; NV-S2	Restricted to rocky, talus slopes. Occurs above the treeline up to the vegetation limit, and at lower elevations in forests or near lakes.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Mammals (Cont.)</i>						
American water shrew	<i>Sorex palustris</i>	AZ-WSC; AZ-S1	Common in boreal and montane riparian habitats, where it is found in shallow tunnels through grasses, sedges, reeds, willow, and alder thickets along ponds, marshes, and streams.	×	×	
Arizona montane vole	<i>Microtus montanus arizonensis</i>	NM-E; NM-S1	Occurs in wet sedge and grass meadows that border marshes and open water at elevations around 6,900 ft.	×	×	
Arizona myotis	<i>Myotis occultus</i>	BLM-S; CA-S2; NM-SC; FWS-SC	Known from extreme southeastern California and southern Arizona, occurring only along the Colorado River lowlands and in adjacent desert mountain ranges. Inhabits ponderosa pine and oak-pine woodlands close to water; also occurs in riparian forests within desert areas along the Colorado River.	×	×	×
Big brown bat	<i>Eptesicus fuscus</i>	BLM-S	Inhabits wooded and semi-open habitats. More abundant in areas dominated by deciduous forest than coniferous forest. Roosts in buildings, hollow trees, rock crevices, tunnels, and cliff swallow nests.	×	×	
Big free-tailed bat	<i>Nyctinomops macrotis</i>	BLM-S; FWS-SC; CA-S2; CA-SC; NM-S2; NV-S1; UT-S2	Associated with bare rock/talus/scree, cliff, shrub desert, hardwood woodland, and riparian communities. Roosts in rock crevices on cliff faces or in buildings. Forages primarily in coniferous forests and arid shrublands to feed on moths.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Mammals (Cont.)</i>						
Black-footed ferret	<i>Mustela nigripes</i>	ESA-E; ESA-XN; CO-E; CO-S1	Believed to be extirpated from the state of Colorado since the 1950s. Experimental populations were re-introduced to the northwestern portion of Colorado beginning in 2001. Historically, it inhabited prairies and semiarid shrublands, where it preyed on prairie dogs.	×	×	
Black-tailed prairie dog	<i>Cynomys ludovicianus</i>	FWS-SC; NM-SC; NM-S2	A species of the Great Plains, occurring from southern Saskatchewan, Canada, south to the desert grasslands of western Texas and southern New Mexico. Inhabits dry, flat or gently sloping, open grasslands with relatively sparse vegetation. May inhabit some areas grazed by cattle or vacant lots in residential areas.	×	×	×
Botta's pocket gopher	<i>Thomomys bottae rubidus</i>	CO-SC; CO-S1	Inhabits agricultural fields, grasslands, roadsides, parks, pinyon-juniper woodlands, open montane forest, montane shrublands, and semidesert shrublands at an elevation ranging from 4,000 to 8,500 ft.	×	×	×
Brazilian free-tailed bat	<i>Tadarida brasiliensis</i>	BLM-S; NV-P	Found primarily throughout the southern half of North America, the species may occur in isolated locations throughout the southwestern United States. Forages in desert grassland, old field, savanna, shrubland, and woodland habitats as well as urban areas. Roosts in old buildings, caves, mines, and hollow trees.	×	×	×
Buena Vista Lake shrew	<i>Sorex ornatus relictus</i>	ESA-E; CA-S1	Has occupied marshes on lake margins and may occur in dense vegetation along streams, sloughs, and tule marshes in the Tulare Basin.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<b>Mammals (Cont.)</b>						
California leaf-nosed bat	<i>Macrotus californicus</i>	BLM-S; AZ-WSC; CA-S2; CA-SC; FWS-SC	A year-round resident in southern California and southwestern Arizona. May be locally common in some areas. Occurs in desert riparian, desert wash, desertscrub, and palm oasis habitats at elevations below 2,000 ft. Roosts in mines, caves, and buildings.	×	×	×
Canada lynx	<i>Lynx canadensis</i>	ESA-T; CO-E; CO-S1	Occurs on montane conifer and conifer-hardwood habitats; a dense understory that supports snowshoe hare populations. Within the solar analysis region, this species is currently restricted to extremely isolated areas of the mountains in the central portion of Colorado.	×	×	
Cave myotis	<i>Myotis velifer</i>	BLM-S; FWS-SC; CA-S1	Found in the lower Colorado River Basin in desertscrub, shrublands, washes, and riparian habitats. Roosts in colonies in caves.	×	×	×
Cebolleta pocket gopher	<i>Thomomys bottae paguatae</i>	BLM-S; NM-S2	Found in Valencia County, New Mexico, and inhabits areas where suitable soil conditions for digging exist.	×	×	
Colorado River cotton rat	<i>Sigmodon arizonae plenus</i>	AZ-S2	Restricted to the lower Colorado River floodplain in Arizona and California. Confined to isolated mesic habitats, such as desert riparian, grassland, and freshwater wetlands and flooded agricultural areas.	×	×	
Colorado Valley woodrat	<i>Neotoma albigula venusta</i>	CA-S1	Known from extreme southeastern California. Inhabits low-lying desert, creosote-mesquite, and pinyon-juniper habitats. Distribution is strongly influenced by the availability of den-building materials—including litter of opunita, cholla, prickly pear, mesquite, and catclaw—as well as its low tolerance for cold temperatures.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Mammals (Cont.)</i>						
Common hog-nosed skunk	<i>Conepatus leuconotus</i>	CO-S1	Inhabits woodlands, grasslands, deserts, brushy areas, and rocky canyons in mountainous regions. Utilized sites are characterized as scrub oak, pinyon scrub, and pinyon-juniper woodlands with sandy soils, grassy understories, and rocks at elevations below 9,000 ft.	×	×	×
Dark kangaroo mouse	<i>Microdiposops megacephalus</i>	BLM-S; UT-SC; UT-S2	Occurs in the Great Basin region within the project area in sagebrush-dominated areas with sandy soils. Nocturnally active during warm weather, the species remains in underground burrows during the day and cold winter months.	×	×	×
Desert bighorn sheep	<i>Ovis canadensis mexicana</i>	NM-E; NM-SC; NM-S1	Occurs on visually open, steep rocky terrain in mountainous habitats in desert regions. Rarely uses desert lowlands, but may use them as corridors for travel between mountain ranges.	×	×	×
Desert pocket gopher	<i>Geomys arenarius</i>	FWS-SC	Scattered distribution in southern New Mexico, western Texas, and northern Mexico. Inhabits loose soils of disturbed areas or sandy areas near open water. Often occurs along rivers, ponds, or canals.	×	×	×
Desert Valley kangaroo mouse	<i>Microdipodops megacephalus albiventer</i>	BLM-S; NV-P; FWS-SC; NV-S2	Endemic to central Nevada. Inhabits desert areas at playa margins and dune habitats.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Mammals (Cont.)</i>						
Dwarf shrew	<i>Sorex nanus</i>	CO-S2	Utilizes rocky sites within alpine, bare rock/talus/scree, coniferous forests, herbaceous grasslands, shrubland/chaparral, and woodland-conifer forests. Other habitats include sedge marsh, subalpine meadow, dry brushy slopes, arid shortgrass prairie, dry stubble fields, and pinyon-juniper woodlands.	×	×	×
Fish Spring pocket gopher	<i>Thomomys bottae abstrusus</i>	BLM-S	Endemic to Nye County, Nevada.	×	×	
Fletcher dark kangaroo mouse	<i>Microdipodops megacephalus nasutus</i>	BLM-S; NV-P; NV-S2	Occurs in Mineral County, Nevada, and in California.	×	×	
Fringed myotis	<i>Myotis thysanodes</i>	BLM-S; NV-P; FWS-SC; NV-S2; UT-SC	Occurs in a wide range of habitats, including lowland riparian, desert shrub, pinyon-juniper, and sagebrush habitats. Roost sites have been reported in buildings and caves. May be a summer or year-round resident throughout the six-state study area.	×	×	×
Giant kangaroo rat	<i>Dipodomys ingens</i>	ESA-E; CA-E; CA-S2	Found on fine sandy loam soils with sparse annual grass/forb vegetation along the western side of the San Joaquin Valley.	×		
Goat Peak pika	<i>Ochotona princeps nigrescens</i>	BLM-S; NM-S1	Found in the Jemez Mountains in the Sante Fe National Forest, where they live in lava rocks at an elevation of 9,000 ft.	×	×	
Gray-footed chipmunk	<i>Neotamias canipes</i>	BLM-S	Known from New Mexico and western Texas. Occurs in montane woodlands where dense stands of mixed timber are present. Also occurs on brushy hillsides with rock crevices.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<b>Mammals (Cont.)</b>						
Guadalupe pocket gopher	<i>Thomomys bottae guadalupensis</i>	BLM-S; NM-S1	Confined to the Guadalupe Mountains, primarily in the montane and valley areas.	×	×	
Gunnison's prairie dog	<i>Cynomys gunnisoni</i>	ESA-C; NM-S2	Known from the Gunnison Basin in central and south-central Colorado. Inhabits mountain valleys, plateaus, and open brush habitats in the project area at elevations between 6,000 and 12,000 ft.	×	×	×
Hoary bat	<i>Lasiurus cinereus</i>	BLM-S	Prefers deciduous and coniferous forests and woodlands. Roosts in tree foliage at the edge of clearings; rarely uses caves.	×	×	
Houserock Valley chisel-toothed kangaroo rat	<i>Dipodomys microps leucotis</i>	BLM-S; AZ-WSC; FWS-SC; AZ-S2	Endemic to Arizona, where it is found only in Houserock Valley in Coconino County. Requires good shrub cover of Great Basin desertscrub communities.	×	×	
Hualapai Mexican vole	<i>Microtus mexicanus hualpaiensis</i>	ESA-E; AZ-WSC; AZ-S1	Endemic to western and central Arizona. Primarily associated with dry grass/forb habitats on steep slopes in ponderosa pine woodlands. Currently only known from moist, grass/sedge habitats along permanent and semipermanent water sources at elevations between 3,000 and 8,400 ft.	×	×	
Jaguar	<i>Panthera onca</i>	ESA-E; AZ-WSC; AZ-S1; NM-S1	Range is Mexico to Brazil to northern Patagonia; very rare in Arizona, New Mexico, and Texas. Preferred habitat is lowland wet areas; primarily associated with rivers and cienegas in Arizona.	×	×	
Kit fox	<i>Vulpes macrotis</i>	BLM-S; UT-SC	Occurs in open prairie, plains, and desert habitats, where it inhabits burrows and preys on rodents, rabbits, hares, and small birds.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Mammals (Cont.)</i>						
Least shrew	<i>Cryptotis parva</i>	NM-T; NM-S2	Occurs in open country with dense herbaceous vegetation. Also inhabits brushy areas, forest edges, salt and freshwater marshes. Nests underground or under logs, stumps, or rocks.	×	×	
Lesser long-nosed bat	<i>Leptonycteris curasoae yerbabuena</i>	ESA-E; AZ-WSC; AZ-S1	Range is central California, southern Arizona, New Mexico, south to Honduras, and El Salvador. Does not hibernate, and there are seasonal differences in habitat. Inhabits desert grassland and shrubland up to the oak transition, and roosts in caves and mine tunnels.	×	×	
Lodgepole chipmunk	<i>Neotamias speciosus speciosus</i>	CA-S2	Occurs in isolated populations in mountains of California. Occurs within open-canopy forests of mixed conifer, Jeffrey pine, lodgepole, and limber pine, as well as chaparral. Elevation ranges between 6,400 and 10,800 ft.	×	×	
Long-eared myotis	<i>Myotis evotis</i>	BLM-S; FWS-SC	A year-round resident in California, primarily occurring in coastal habitats. Rarely occurs in arid desert habitats but may forage along riparian areas and coniferous forests. Roosts in buildings, crevices, and snags.	×	×	
Long-legged myotis	<i>Myotis volans</i>	BLM-S	Occurs primarily in montane coniferous forests, also in riparian and desert habitats. May change habitats seasonally. Uses caves and mines as hibernacula, but winter habits are poorly known. Roosts in abandoned buildings, rock crevices, and under the bark of trees.	×	×	×
Mearns' pocket gopher	<i>Thomomys bottae mearnsi</i>	BLM-S; NM-S2	Found in moist soil along edges of a large marsh at the bottom of Animas Valley.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Mammals (Cont.)</i>						
Mexican long-nosed bat	<i>Leptonycteris nivalis</i>	ESA-E; NM-E; NM-S1	Inhabits generally arid areas of desertscrub, open conifer-oak woodlands, and pine forests in the Upper Sonoran and Transition Life Zones. Colonies roost in caves, culverts, hollows trees or vacant buildings.	×	×	
Mexican long-tongued bat	<i>Choeronycteris mexicana</i>	BLM-S; AZ-WSC; FWS-SC; BLM-S; NM-S2	Range includes southwestern states and Mexico. Inhabits mesic areas in canyons of mixed oak-conifer forests in mountains rising from the desert. Roosts in places that are not very dark, such as caves, rock fissures, and old mines.	×	×	
Mohave ground squirrel	<i>Spermophilus mohavensis</i>	CA-T; CA-S2	Known from the Mojave Desert in San Bernardino County, California. Inhabits open desertscrub, grasslands, and Joshua tree woodlands at elevations between 1,800 and 5,000 ft. Utilizes burrows at the base of shrubs.	×	×	
Mohave river vole	<i>Microtus californicus mohavensis</i>	CA-S1; FWS-SC	Endemic to California, where it is restricted to two localities along the Mojave River. Occupies moist habitats, including meadows, freshwater and tidal marshes, irrigated pastures, and oak woodlands.	×		
Morro Bay kangaroo rat	<i>Dipodomys heermanni morroensis</i>	ESA-E; CA-E; CA-S1	Range is a small area near Morro Bay, San Luis Obispo County, California. Prefers southern coastal scrub, coastal sage scrub, or coastal sand plains and stabilized dunes.	×		
Nelson's antelope squirrel	<i>Ammospermophilus nelsoni</i>	BLM-S; CA-T; CA-S2	Found on dry, flat, or rolling terrain on alluvial and loamy soils. Inhabits grassy or sparsely shrubby areas.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Mammals (Cont.)</i>						
Nelson's bighorn sheep	<i>Ovis canadensis nelsoni</i>	BLM-S; FWS-SC	Visually open, steep, rocky terrain in mountainous habitats of the eastern Mojave and Sonoran Deserts in California. Rarely uses desert lowlands, but may use them as corridors for travel between mountain ranges.	×	×	×
New Mexican jumping mouse	<i>Zapus hudsonius luteus</i>	ESA-C; BLM-S; NM-E; NM-S2	Inhabits herbaceous riparian areas along permanent streams, including wet meadows within river floodplains. Also known along irrigation ditches. In many areas, moist riparian zones with tall, dense sedges provide suitable habitat.	×		
Occult little brown myotis	<i>Myotis lucifugus occultus</i>	BLM-S	Known in low-elevation riparian areas in the Rio Grande Valley and montane highlands; associated with large bodies of water without respect to associated vegetation type.	×	×	
Organ Mountains chipmunk	<i>Neotamias quadrivittatus australis</i>	BLM-S; NM-T; FWS-SC; NM-S1	Endemic to New Mexico in the Organ Mountains. Most common around Aguirre Springs at elevations between 6,050 and 7,300 ft. Inhabits north-facing slopes in association with ponderosa pine, oak, and pinyon-juniper woodlands.	×		
Owens Valley vole	<i>Microtus californicus vallicola</i>	BLM-S; CA-S1	Inhabits fresh and brackish marshes, valley grasslands, meadows, and dry grassy hillsides. Occupies underground burrows and surface runways through grass.	×	×	
Pacific fisher	<i>Martes pennanti pacifica</i> DPS	ESA-C; BLM-S; CA-T; CA-S2	Prefers upland and lowland forests, including coniferous, mixed, and deciduous forests. Inhabits hardwood stands in summer, and coniferous or mixed forests in winter.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Mammals (Cont.)</i>						
Pacific pocket mouse	<i>Perognathus longimembris pacificus</i>	ESA-E; CA-S1	Occurs in shrublands with firm, sandy soil in the immediate vicinity of the ocean.	×	×	
Pahranagat Valley montane vole	<i>Microtus montanus fucosus</i>	BLM-S; NV-P; FWS-SC; NV-S2	Endemic to Lincoln County, Nevada, where it is restricted to springs in the Pahranagat Valley. Within that area, isolated populations use mesic montane and desert riparian patches.	×	×	×
Pale kangaroo mouse	<i>Microdipodops pallidus</i>	NV-P; NV-S2	Known from southwestern Nevada and southeastern California. Inhabits fine sands in alkali sink and desertscrub dominated by shadscale or big sagebrush. Often burrows in areas of soft, windblown sand piled at the bases of shrubs.	×	×	×
Pallid bat	<i>Antrozous pallidus</i>	BLM-S; NV-P; CA-SC; FWS-SC	Inhabits low-elevation desert communities, including grasslands, shrublands, and woodlands. During the day, roosts in caves, crevices, and mines. May be a summer or year-round resident throughout the six-state study area.	×	×	×
Palm Springs pocket mouse	<i>Perognathus longimembris bangsi</i>	BLM-S; CA-S2	Known from the Coachella Valley in Riverside County California, south to the Salton Sea. Active above ground in warmer months, foraging on seeds in creosote scrub, desertscrub, and grasslands on loose or sandy soils.	×	×	×
Palm Springs round-tailed ground squirrel	<i>Spermophilus tereticaudus chlorus</i>	ESA-C; BLM-S; CA-S1	Prefers sandy areas where the sand accumulates under large shrubs to provide adequate cover. Includes areas of coarse sand associated with washes, and the transition area between dunes and creosotebush scrub.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Mammals (Cont.)</i>						
Palmer's chipmunk	<i>Neotamias palmeri</i>	NV-P; NV-S2	Endemic to Nevada, where it is restricted to Mount Cheston in the Spring Mountains. Inhabits coniferous forests, from the yellow pine belt to the timber line, where it rarely ventures far from shelter among large rocks, logs, or cliff crevices.	×	×	
Pecos River muskrat	<i>Ondatra zibethicus ripensis</i>	BLM-S	Found in areas within New Mexico and Texas; common in the refuge wetlands and water conveyance systems in the Bosque del Apache National Wildlife Refuge.	×	×	
Penasco least chipmunk	<i>Neotamias minimus atristriatus</i>	NM-E; FWS-SC; NM-S1	Known only from the Sacramento Mountains in Otero County, New Mexico. Inhabits mesic meadows, riparian areas, agricultural fields, and pinyon-juniper woodlands.	×	×	
Peninsular bighorn sheep	<i>Ovis canadensis nelsoni</i> DPS	ESA-E; CA-E; CA-S1	A DPS of Nelson's bighorn sheep, restricted to the Peninsular Ranges of the San Jacinto Mountains in southern California. Inhabits visually open, steep, rocky terrain in mountainous habitats of the western Sonoran Desert. Rarely uses desert lowlands, but may use them as corridors for travel between ranges.	×		
Plains pocket mouse	<i>Perognathus flavescens relictus</i>	CO-S2	Confined to areas of sandy or sandy-loam soils at elevations between 3,000 and 7,500 ft. Inhabits xeric grassland communities, including tallgrass prairie, midgrass prairie, shortgrass prairie, and foothill/mountain grassland, as well as shrublands, pinyon-juniper forests, and sand dune habitats.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Mammals (Cont.)</i>						
Pocketed free-tailed bat	<i>Nyctinomops femorosaccus</i>	CA-S2; FWS-SC	Confined to a few localities within southern California and southwestern Arizona. Uses almost exclusively arid lowland areas, including creosotebush and chaparral habitats, in association with very large boulders, high cliffs, rugged rock outcroppings, and rocky canyons.	×	×	×
Point Arena mountain beaver	<i>Aplodontia rufa nigra</i>	ESA-E; CA-S1	Range is coastal Mendocino County, California. Inhabits gulches and north-facing slopes within narrow coastal valleys.	×	×	
Preble's shrew	<i>Sorex preblei</i>	BLM-S; UT-S1; UT-SC	Range is the western United States and British Columbia. Known in Utah at Timpie Spring Waterfowl Management Area, where the preferred habitat is alkaline shrubland.	×	×	
Pygmy rabbit	<i>Brachylagus idahoensis</i>	BLM-S; NV-P; UT-S2; UT-SC	Inhabits sagebrush-shrubland habitats throughout the SEZ region. Prefers loose soils to dig burrows.	×	×	×
Salinas pocket mouse	<i>Perognathus inornatus psammophilus</i>	BLM-S; CA-S2	Inhabits dry, open, grassy ground, including arid grasslands, desertscrub, and oak savannas.	×	×	
San Bernardino flying squirrel	<i>Glaucomys sabrinus californicus</i>	CA-S2; FWS-SC	Endemic to California, with three isolated populations occurring within the forests of the San Gabriel, San Bernardino, and San Jacinto Mountains. Occupies coniferous and deciduous forests, including riparian forest and mixed coniferous forest composed of Jeffrey pine, white fir, and black oak.	×		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Mammals (Cont.)</i>						
San Bernardino kangaroo rat	<i>Dipodomys merriami parvus</i>	ESA-E; CA-S1	Inhabits sage scrub on alluvial fans, floodplains, washes, upland areas, and in areas with historic braided stream channels. Soils are sand, loam, sandy loam, or gravelly.	×	×	
San Joaquin kit fox	<i>Vulpes macrotis mutica</i>	ESA-E; CA-T; CA-S2	Range is San Joaquin Valley in California. Inhabits alkali sink, valley grassland, and foothill woodland. Prefers low, sparse vegetation for hunting.	×	×	
Short-nosed kangaroo rat	<i>Dipodomys nitratooides brevinasus</i>	BLM-S; CA-S1	Endemic to California. Habitat includes friable sandy or silty soils in areas with no to moderate shrub cover and scattered herbaceous plants.	×		
Sierra Nevada bighorn sheep	<i>Ovis canadensis sierrae</i>	ESA-E; CA-E; CA-S1	Inhabits portions of the southern Sierra Nevada at elevations between 4,790 and above 14,000 ft.	×	×	
Sierra Nevada red fox	<i>Vulpes vulpes necator</i>	CA-T; CA-S1	Known from the Sierra Nevada region of northern and central California and western and central Nevada. Occurs in various habitats in alpine and subalpine zones. Preferred habitat is red fir and lodgepole pine forests.	×		
Silky pocket mouse	<i>Perognathus flavus</i>	BLM-S; UT-S1; UT-SC	Native to the southwestern and west-central United States and portions of Mexico. In Utah, occurs in the southeastern corner in San Juan County. Inhabits sandy soils in arid grassland, woodland, and sagebrush areas.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Mammals (Cont.)</i>						
Silver-haired bat	<i>Lasionycteris noctivagans</i>	BLM-S; FWS-SC	Primarily confined to high-elevation forested areas (1,600 to 8,500 ft) composed of aspen, cottonwood, white fir, pinyon-juniper, subalpine fir, willow, and spruce communities. Roost and nursery sites occur in tree foliage, cavities, or under loose bark. Rarely hibernates in caves.	×	×	×
Sonoran pronghorn	<i>Antilocapra americana sonoriensis</i>	ESA-E; AZ-WSC; AZ-S1	Endemic to southern and western Arizona and northern Mexico. Inhabits areas of the Lower Sonoran Desert Life Zone in broad alluvial valleys separated by mountains, where substrates consist of clay, silt, and alluvium deposited from wind and ephemeral streams. Mean elevation of the valleys ranges between 400 and 1,600 ft.	×	×	
Southern long-nosed bat	<i>Leptonycteris curasoae</i>	ESA-E; NM-T; NM-S2	Occurs in desert grassland and shrubland, chaparral, and lower elevational oak woodland and associated habitats.	×	×	
Southern pocket gopher	<i>Thomomys umbrinus</i>	NM-T; NM-S1	Found only in the Animas Mountains in Hidalgo County, New Mexico, at elevations of 4,900 to 7,200 ft. Inhabits the shallow rocky soils of the pine forest.	×	×	
Southwestern river otter	<i>Lontra canadensis sonora</i>	BLM-S	Habitat ranges from semidesert shrubland to subalpine forest that contains required permanent flowing water or ponds, overhanging bank vegetation, and sites for entering and leaving water.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Mammals (Cont.)</i>						
Spotted bat	<i>Euderma maculatum</i>	BLM-S; NV-P; NM-T; FWS-SC; CA-S2; CO-S2; NM-S2; NV-S2; UT-S2; UT-SC	Near forests and shrubland habitats throughout the SEZ region. Uses caves and rock crevices for day roosting and winter hibernation. May be a summer or year-round resident throughout the six-state study area.	×	×	×
Stephens' kangaroo rat	<i>Dipodomys stephensi</i>	ESA-E; CA-T; CA-S2	Occurs in annual and perennial grassland habitats, but also coastal scrub or sagebrush with sparse canopy cover, or in disturbed areas.	×		
Tipton kangaroo rat	<i>Dipodomys nitratoides nitratoides</i>	ESA-E; CA-E; CA-S1	Small range in southern California. Preferred habitat is sandy or silty soils with none to moderate shrub cover and scattered herbaceous plants.	×		
Townsend's big-eared bat	<i>Corynorhinus townsendii pallescens</i>	BLM-S; CO-SC; CO-S2; FWS-SC	A subspecies of Townsend's big-eared bat, known primarily within the six-state study area from the state of Colorado. Inhabits semiarid shrublands, pinyon-juniper woodlands, and montane forests below elevations of 9,500 ft. Roosts in caves, mines, or rock crevices, under bridges, or within buildings.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Mammals (Cont.)</i>						
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	BLM-S; BLM-S; NV-P; FWS-SC; CA-S2; NM-SC; NV-S2; UT-SC	Near forests and shrubland habitats below 9,000 ft in elevation throughout the SEZ region. The species may use caves, mines, and buildings for day roosting and winter hibernation. May be a summer or year-round resident throughout the six-state study area.	×	×	×
Tulare grasshopper mouse	<i>Onychomys torridus tularensis</i>	BLM-S; CA-S1	Known from Tulare County, California. Inhabits areas of sparse and scattered vegetation such as mesquite and short grasses.	×	×	
Utah prairie dog	<i>Cynomys parvidens</i>	ESA-T; UT-S1	Endemic to southwestern Utah. Inhabits grasslands in level mountain valleys and areas with deep, well-drained soils. Populations exist as colonies residing in underground burrow systems, which are dynamic in size and location.	×	×	×
Western mastiff bat	<i>Eumops perotis californicus</i>	BLM-S; NV-P; FWS-SC; NV-S1	An uncommon year-round resident in Arizona, California, and Nevada. Occurs in many open semiarid habitats, including conifer and deciduous woodlands, shrublands, grasslands, chaparral, and urban areas. Day roosts in crevices in cliff faces, buildings, and tall trees.	×	×	×
Western pipistrelle	<i>Pipistrellus hesperus</i>	BLM-S	Inhabits deserts and lowlands, desert mountain ranges, desertscrub flats, and rocky canyons. Roosts in rock crevices, burrows, and mines.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Mammals (Cont.)</i>						
Western red bat	<i>Lasiurus blossevillii</i>	BLM-S; AZ-WSC; NV-P; FWS-SC; NM-S2 NV-S1; UT-S1	Forages in riparian and other wooded areas. Roosts primarily in cottonwood trees along riparian areas and in fruit orchards.	×	×	×
Western small-footed myotis	<i>Myotis ciliolabrum</i>	BLM-S; FWS-SC; CA-S2	Occurs in a variety of woodlands and riparian habitats at elevations below 9,000 ft. Roosts in caves, buildings, mines, and crevices of cliff faces. May be a summer or year-round resident throughout the six-state study area.	×	×	×
Western yellow bat	<i>Lasiurus xanthinus</i>	BLM-S; AZ-WSC; AZ-S2; CA-SC	An uncommon year-round resident in the foothills and desert regions of southern California and southwestern Arizona. Inhabits desert riparian, desert wash, and palm oasis habitats at elevations below 2,000 ft. Roosts in trees.	×	×	×
White sands woodrat	<i>Neotoma micropus leucophaea</i>	FWS-SC	Known only from the White Sands region in Otero County, New Mexico. Occurs in desert grasslands, shrublands, and riparian areas.	×	×	×
White-sided jackrabbit	<i>Lepus callotis</i>	BLM-S; NM-T; NM-S1	Range is from southern Hidalgo County in New Mexico to northern Oaxaca, Mexico, where its habitat is primarily grasslands.	×	×	
White-tailed prairie-dog	<i>Cynomys leucurus</i>	BLM-S; UT-S2; UT-SC	Occurs in northeastern Utah, and Colorado, Wyoming, and Montana. Inhabits open shrublands, semidesert grasslands, and open valleys.	×	×	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Mammals (Cont.)</i>						
Wolverine	<i>Gulo gulo</i>	CA-T; CA-S2; CO-S1	Occurs in high-elevation habitats, including aspen, spruce-fir, Douglas fir, lodgepole pine, limber pine, ponderosa pine/lodgepole, white fir, juniper, pinyon juniper, Rocky Mountain bristlecone pine, and mixed conifer forests as well as tundra, subalpine meadow, and xeric shrublands at elevations between 6,000 and 14,500 ft.	×		
Yellow-faced pocket gopher	<i>Cratogeomys castanops</i>	NM-S2	Inhabits deep sandy or silty soils that are relatively free of rocks. Prefers deep, firm soils; rich soils of river valleys and streams; agricultural land (orchards, gardens, potato fields, and other croplands); and meadows. Also in mesquite-creosotebush habitat. Constructs shallow foraging burrows and deeper ones between nest and food cache.	×	×	×
Yellow-nosed cotton rat	<i>Sigmodon ochrognathus</i>	BLM-S; NM-S2	Inhabits dry rocky slopes in oak-pinyon-juniper habitat, montane meadows in ponderosa pine and Douglas-fir forests, rocky slopes of desert mountains, and grassy montane flats.	×	×	
Yuma hispid cotton rat	<i>Sigmodon hispidus eremicus</i>	AZ-S2; CA-S2; CA-SC; FWS-SC	Known from the southern Colorado River Valley in southwest Arizona and southwestern California. Occurs in dense stands of vegetation near wetlands, herbaceous grasslands, and hardwood woodland communities. Preferred sites are described as being dense, grassy areas, such as fields, marshes, and roadside edges; brushy areas along streams or ponds; irrigated fields; and desertscrub.	×	×	×

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Status <sup>a</sup>	Habitat Description	Potential to Occur in the Alternative Areas <sup>b</sup>		
				No Action	Program	SEZ
<i>Mammals (Cont.)</i>						
Yuma mountain lion	<i>Puma concolor browni</i>	CA-S1	Small range, mostly confined to the Colorado River Valley of southern California and southwestern Arizona. Establishes large home ranges composed of riparian bottomlands, cottonwood-willow forests, mesquite bosques, adjacent desert foothills, low and rocky mountains, and canyons within desert, chaparral shrubland, and mixed woodland communities.	×	×	×
Yuma myotis	<i>Myotis yumanensis</i>	BLM-S; FWS-SC	A widespread year-round resident throughout much of the southwestern United States. It is uncommon in the Mojave and Sonoran Desert regions, except for mountain ranges bordering the Colorado River and the San Bernardino Mountains. Prefers montane forest habitats at elevations between 2,000 and 8,000 ft. Roosts in buildings, mines, caves, and crevices.	×	×	×

<sup>a</sup> AZ-HS = highly safeguarded plant species in Arizona; AZ-S1 = ranked as S1 in Arizona; AZ-S2 = ranked as S2 in Arizona; AZ-SR = salvage-restricted plant species in Arizona; AZ-WSC = wildlife species of concern in Arizona (formerly regarded as state-threatened); BLM-S = designated as a sensitive species by the BLM; CA-E = listed as endangered by the State of California; CA-S1 = ranked as S1 in California; CA-S2 = ranked as S2 in California; CA-SC = a California species of concern; CA-SX = extirpated from California; CA-T = listed as threatened by the State of California; DPS = Distinct Population Segment; ESA-C = candidate for listing under the ESA; ESA-E = listed as endangered under the ESA; ESA-P = proposed for listing under the ESA; ESA-T = listed as threatened under the ESA; ESA-UR = under review for ESA listing; ESA-XN = experimental, non-essential populations under the ESA; FWS-SC = FWS species of concern; CO-E = listed as endangered by the State of Colorado; CO-S1 = ranked as S1 in Colorado; CO-S2 = ranked as S2 in Colorado; CO-SC = Colorado species of concern; CO-T = listed as threatened by the State of Colorado; NM-E = listed as endangered by the State of New Mexico; NM-S1 = ranked as S1 in New Mexico; NM-S2 = ranked as S2 in New Mexico; NM-SC = New Mexico species of concern; NM-T = listed as threatened by the State of New Mexico; NV-P = protected in Nevada; NV-S1 = ranked as S1 in Nevada; NV-S2 = ranked as S2 in Nevada; UT-S1 = ranked as S1 in Utah; UT-S2 = ranked as S2 in Utah; UT-SC = Utah species of concern.

<sup>b</sup> The potential of any species to occur in any of the alternative analysis areas and their affected areas is based on the presence of known occurrences or potentially suitable habitat. Potentially suitable habitat was determined from CAREGAP (USGS 2010) and SWReGAP (USGS 2005a,b) habitat suitability and land cover models.

<sup>c</sup> To convert ft to m, multiply 0.3048.

<sup>d</sup> To convert acres to km<sup>2</sup>, multiply by 0.004047.

<sup>e</sup> To convert mi<sup>2</sup> to km<sup>2</sup>, multiply by 2.590.

<sup>f</sup> To convert mi to km, multiply by 1.609.

<sup>g</sup> To convert °F to °C, multiply by 0.5555.

1 **J.6.1 Plants**

2  
3  
4 **Alkali Mariposa-Lily (*Calochortus striatus*)**

5  
6 ESA Listing Status: Not Listed  
7 BLM Listing Status: Sensitive (California)  
8 State Listing Status: Not Listed  
9 Rarity: California State Rank S2

10  
11 The Alkali mariposa-lily is an herbaceous perennial monocot in the Liliaceae (lily) family  
12 that is native to California but also occurs in Nevada. The plant grows from an underground bulb  
13 and has an erect stem that is usually 4 to 8 in. (10 to 20 cm) tall but may be much taller. The  
14 stem may branch toward the end and is subtended by a long, linear basal leaf that usually withers  
15 by the time the plant blooms. The Alkali mariposa-lily blooms from April to June, with white to  
16 lavender, bell-shaped flowers at the end of the stem. The flower petals are striped with purple  
17 veins, and each has a nectary at its base that is surrounded by hairs. The fruit is an erect, linear,  
18 angled capsule containing flat, yellowish or tan seeds (eFloras.org 2010; Jepson 2010;  
19 NatureServe 2010).

20  
21 The Alkali mariposa-lily grows in wetlands, alkaline seeps, springs, meadows, and  
22 springy places in creosotebush scrub (*Larrea tridentata*) of the western Mojave Desert of  
23 southern California at elevations between 2,600 and 4,600 ft (800 and 1,400 m)  
24 (eFloras.org 2010; NatureServe 2010).

25  
26 Major threats are associated with habitat disturbance or destruction, recreation, fire,  
27 grazing, effects of small population size, exotic species invasion, succession, global climate  
28 change, and pollution.

29  
30 The alkali mariposa-lily may occur in the affected area of the proposed Riverside East  
31 SEZ.

32  
33  
34 **Amargosa Niterwort (*Nitrophila mohavensis*)**

35  
36 ESA Listing Status: Endangered  
37 BLM Listing Status: Not Listed  
38 State Listing Status: Endangered in California; Protected in Nevada  
39 Rarity: Nevada State Rank S1

40  
41 The Amargosa niterwort is confined to a few small depressions, or sinks, of the Carson  
42 Slough in Nevada and California (from the Ash Meadows National Wildlife Refuge [NWR] in  
43 Nevada, downstream to the Franklin Playa, California) and to at least one locale on the eastern  
44 shore of the Amargosa River at Grimshaw Basin, California. This habitat is composed of highly  
45 saline and alkaline soils that are hydrated to varying degrees and are formed by seepage from

1 freshwater springs that lie many miles to the north and east in Ash Meadows, Nevada  
2 (NatureServe 2010).

3  
4 The Amargosa niterwort grows on open, highly alkaline mudflats and low sand deposits  
5 in sinks, around alkali sink vegetation. All populations are known from wet alkaline flats that  
6 lack appreciable standing water and support very little vegetation, with extensive salt crust  
7 development. The species occurs in the open and is generally not found with, or under, any type  
8 of cover. It is found at elevations between approximately 1,970 and 2,460 ft (600 and 750 m).  
9 Associated plants include shadscale saltbush (*Atriplex confertifolia*), Parry's saltbush (*Atriplex*  
10 *parryi*), iva (*Iva* spp.), Tecopa bird's-beak (*Cordylanthus tecopensis*), short-pedicelled cleomella  
11 (*Cleomella brevipes*), pickleweed (*Salicornia virginica*), and saltgrass (*Distichlis spicata*).  
12 Natural and unaltered hydrology within the Lower Carson Slough appears critical for the  
13 survival of the Amargosa niterwort.

14  
15 The Amargosa niterwort is a small erect perennial from an extensive heavy underground  
16 rootstock. The largest population of the species is thought to consist of several thousand  
17 individuals, many of which are interconnected via underground rootstocks. Plants can overwinter  
18 as underground rootstocks, with new plants starting their growth in March. Flowering is from  
19 late April to October.

20  
21 On June 19, 1985 (USFWS 1985), the Amargosa niterwort was federally listed as an  
22 endangered species, with designated critical habitat.

23  
24 The restricted range of this species makes it susceptible to natural catastrophic events  
25 such as flooding and drought, as well as to the genetic and demographic consequences of small  
26 populations. The majority of all suitable habitat in California for this species is on public lands.

27  
28 Potential threats to the species include local groundwater depletion; streambed alteration;  
29 highway maintenance; mining, including exploratory drilling and claim marker placement;  
30 off-highway vehicle (OHV) travel; and trampling by wild horses. An additional threat is the  
31 potential introduction and spread of the exotic plant saltcedar (*Tamarisk* spp.). Saltcedar has not  
32 been observed near Franklin Playa to date, although it does occur downstream on the Amargosa  
33 River in the vicinity of Grimshaw Basin (USFWS 1985; NatureServe 2010).

34  
35 The Amargosa niterwort may occur in the affected area of the proposed Amargosa Valley  
36 SEZ.

37  
38  
39 **Arizona Coralroot (*Hexalectris spicata* var. *arizonica*)**

40  
41 ESA Listing Status: Not Listed

42 BLM Listing Status: Sensitive (New Mexico)

43 State Listing Status: Endangered in New Mexico

44 Rarity: New Mexico State Rank S2; USFWS Species of Concern

45

1 The Arizona coralroot is a subspecies of crested coralroot that occurs throughout southern  
2 Arizona, New Mexico, Texas, and adjacent Mexico. Within New Mexico, populations exist in  
3 Doña Ana, Hidalgo, Otero, and Sierra Counties. The Arizona coralroot grows under heavy leaf  
4 litter in oak, mixed oak and conifer, and pinyon-juniper woodland communities, on the wooded  
5 sides of canyons, and on canyon bottoms from 3,480 to 6,950 ft (1,061 to 2,118 m) in Arizona  
6 and New Mexico. Substrate is limestone to calcareous sandy or organic soils. Associated orchids  
7 include spiny coralroot (*Corallorhiza wisteriana*), purple-spike coralroot (*H. warnockii*), Chisos  
8 coralroot (*H. revoluta*), and Huachuca Mountain adder's-mouth (*Malaxis corymbosa*)  
9 (NMRPTC 2010).

10  
11 Emerging above ground only to flower from May to July in New Mexico, the Arizona  
12 coralroot rarely flowers in consecutive years. It has a symbiotic relationship with mycorrhizal  
13 fungi until the plant is mature for flowering. Within New Mexico, this species grows as widely  
14 scattered individuals, with some small colonies developing up to six plants (AZGFD 2010;  
15 NMRPTC 2010).

16  
17 The Arizona coralroot is listed as endangered by the State of New Mexico, designated as  
18 sensitive by the BLM (New Mexico), ranked S2 by the State of New Mexico, and is a USFWS  
19 species of concern.

20  
21 Threats include mining, land use conversion, habitat fragmentation, soil disturbance and  
22 compaction, and forest management practices.

23  
24 The Arizona coralroot may occur in the affected area of the proposed Afton SEZ.

## 25 26 27 28 **Ash Meadows Blazingstar (*Mentzelia leucophylla*)**

29  
30 ESA Listing Status: Threatened  
31 BLM Listing Status: Not Listed  
32 State Listing Status: Protected in Nevada  
33 Rarity: Nevada State Rank S1  
34

35 The Ash Meadows blazingstar is endemic to the Ash Meadows area of Nye County,  
36 Nevada. It occurs in open areas, on dry, hard, salt-crustured alkaline clay or sandy-clay soils.  
37 Plants grow on low bluffs, swales, flats, and drainages, in shadscale vegetation that surrounds  
38 spring and seep areas in warm desertscrub communities. Associated species include shadscale  
39 saltbush, alkali goldenbush (*Isocoma acradenia*), Ash Meadows sunray (*Enceliopsis nudicaulis*  
40 var. *corrugata*), and Ash Meadows milkvetch (*Astragalus phoenix*). The Ash Meadows  
41 blazingstar is found at elevations between 2,240 and 2,300 ft (683 and 700 m). There are eight  
42 occurrences of this species over a range of approximately 6 mi (10 km), on land administered by  
43 the USFWS and the BLM as well as on privately owned land.  
44

45 The Ash Meadows blazingstar is a biennial herb with bright yellow flowers that bloom  
46 from late May into September. Flowers open only for brief periods in the late afternoon.

1 Observations made in early spring indicate that individuals of this species do not overwinter;  
2 there was no new growth from previous years. Sufficient rain is probably necessary to allow  
3 flowering. Since populations of mature plants vary greatly from year to year, it is likely that the  
4 total number of seeds produced varies also. The dispersal of this species' seeds is restricted to the  
5 sides of gullies and on raised knolls of the flats and lower foothills in the area of the existing  
6 populations. The Ash Meadows blazingstar is apparently sensitive to disturbance or habitat  
7 alteration, as it is not found on any disturbed sites either as seedlings or as established plants.  
8

9 The Ash Meadows blazingstar was federally listed as threatened on May 20, 1985  
10 (USFWS 1985). Critical habitat has been designated in the Ash Meadows area of Nye County,  
11 Nevada.  
12

13 The Ash Meadows blazingstar could occur in the affected area of the proposed Amargosa  
14 Valley SEZ.  
15

### 16 **Ash Meadows Gumplant (*Grindelia fraxinoprattensis*)** 17

18  
19 ESA Listing Status: Threatened  
20 BLM Listing Status: Not Listed  
21 State Listing Status: Protected in Nevada  
22 Rarity: Nevada State Rank S2  
23

24 The Ash Meadows gumplant is an erect, biennial or, more often, perennial herb of the  
25 sunflower (Asteraceae) family. It is known only from moist, meadow habitats along Carson  
26 Slough in Nevada and California, from the Ash Meadows NWR in Nevada, and Franklin Playa,  
27 California; it has also been reported along the Amargosa River from near Tecopa, California.  
28

29 The populations of the Ash Meadows gumplant follow drainage patterns from spring  
30 sources in the Ash Meadows region into Carson Slough, the major drainage system of Ash  
31 Meadows. The current population status of the Ash Meadows gumplant is unknown, and  
32 population trends are difficult to determine because long-term data are unavailable. The Ash  
33 Meadows gumplant primarily occurs in saltgrass meadows along streams and surrounding pools  
34 in the vicinity of ash-screwbean-mesquite woodlands and desert shadscale scrub vegetation. It  
35 occasionally occurs sparsely on open alkali clay soils in drier shadscale habitats or in the unique  
36 clay barrens where groundwater is at or near the surface and where other Ash Meadow endemics  
37 are supported. The species is quite robust in marshy areas along some dirt roads where runoff  
38 accumulates.  
39

40 The dominant plant species occurring with the gumplant is saltgrass. Other common  
41 associates within the saltgrass meadow type community include spring-loving centaury  
42 (*Centaurium namophilum*), seep willow (*Baccharis salicipholia*), yerba mansa (*Anemopsis*  
43 *californica*), western niterwort (*Nitrophila occidentalis*), loosestrife (*Lysimachia* spp.), and iva  
44 (*Iva* spp.). In wooded areas and on drier sites, common associates include velvet ash (*Fraxinus*  
45 *velutina*), screwbean mesquite (*Prosopis pubescens*), shadscale (*Atriplex confertifolia*), alkali

1 sacaton (*Sporobolus airoides*), alkali goldenbush, rabbitbush (*Ericameria bloomeri*), seepweed  
2 (*Suaeda* spp.), and other saltbush species (*Atriplex* spp.).  
3

4 The Ash Meadows gumplant was federally listed as threatened with designated critical  
5 habitat on May 20, 1985 (USFWS 1985).  
6

7 Threats to the Ash Meadows gumplant include the reduction of spring outflow caused by  
8 adjacent land development and/or water diversion; the destruction and/or modification of the  
9 limited habitat available to this species from camping, staging area, road maintenance, and/or  
10 mining activities; and the degradation of habitat resulting from wild horse grazing and trampling  
11 and OHV use impacts.  
12

13 The Ash Meadows gumplant could occur in the affected area of the proposed Amargosa  
14 Valley SEZ.  
15

### 16 **Ash Meadows Ivesia (*Ivesia kingii* var. *eremica*)**

17

18  
19 ESA Listing Status: Threatened  
20 BLM Listing Status: Not Listed  
21 State Listing Status: Protected in Nevada  
22 Rarity: Nevada State Rank S2  
23

24 The Ash Meadows ivesia is a perennial herb that is endemic to the Ash Meadows area of  
25 Nevada. The species occurs in open areas, on moist to saturated, heavy to chalky alkaline soils.  
26 Plants grow in meadows on flats, drainages, and bluffs near springs and seeps. They are  
27 commonly associated with highly alkaline, clay lowlands or depressions where soil moisture  
28 remains high from perched groundwater maintained by springs and seeps. The species is  
29 typically found in saltgrass meadow, shadscale, and ash-mesquite, associated with the following  
30 species: shadscale saltbush, saltgrass, Baltic rush (*Juncus balticus*), mesquite (*Prosopis* spp.),  
31 Mojave thistle (*Cirsium mohavense*), spring-loving centaury (*Centaurium namophilum*), velvet  
32 ash (*Fraxinus velutina*), yerba mansa, and iva.  
33

34 The Ash Meadows ivesia is a matted perennial herb/shrub that bears white flowers from  
35 August to October. The Ash Meadows ivesia is aquatic or wetland-dependent and occurs at  
36 elevations ranging from 2,200 to 2,300 ft (670 to 700 m). There are nine occurrences of the  
37 species that cover a combined total area of approximately 9 acres (0.04 km<sup>2</sup>), on land  
38 administered by the USFWS and the BLM, and on privately owned land.  
39

40 The Ash Meadows ivesia was federally listed as threatened on May 20, 1985  
41 (USFWS 1985). Critical habitat has been designated in the Ash Meadows area of Nye County,  
42 Nevada.  
43

44 Potential threats to the species include development, trampling and grazing, and the  
45 associated large-scale drawdown of water resources.  
46

1 The Ash Meadows ivesia could occur in the affected area of the proposed Amargosa  
2 Valley SEZ.

3  
4  
5 **Ash Meadows Sunray (*Enceliopsis nudicaulis* var. *corrugate*)**

6  
7 ESA Listing Status: Threatened  
8 BLM Listing Status: Not Listed  
9 State Listing Status: Protected in Nevada  
10 Rarity: Nevada State Rank S2

11  
12 The Ash Meadows sunray is endemic to the Ash Meadows area, occurring in both  
13 Nevada and adjacent California. The species occurs on dry to somewhat moist, hard, strongly  
14 alkaline silty to clay soils, in open areas, often on or near low calcareous outcrops. Plants are  
15 found in spring and seep areas, at elevations from 2,200 to 2,360 ft (670 to 720 m), in  
16 creosotebush-bursage and shadscale zones. Common associated plant species include shadscale  
17 saltbush, alkali goldenbush, saltgrass, broom snakeweed (*Gutierrezia sarothrae*), ratany  
18 (*Krameria* spp.), basin yellow cryptantha (*Cryptantha confertiflora*), desert bearpoppy  
19 (*Arctomecon merriamii* Coville), Ash Meadows blazingstar (*Mentzelia leucophylla*), and Ash  
20 Meadows milkvetch (*Astragalus phoenix*). This species is known from 11 sites that together total  
21 an area of 27 acres (0.1 km<sup>2</sup>).

22  
23 The Ash Meadows sunray is a perennial shrub that flowers in April and May. Flowers are  
24 borne singly on leafless flower stalks. Little is known about the reproductive biology and life  
25 history of this species.

26  
27 The Ash Meadows sunray was federally listed as threatened on May 20, 1985  
28 (USFWS 1985). Critical habitat has been designated in the Ash Meadows area of Nye County,  
29 Nevada.

30  
31 This subspecies is threatened by groundwater pumping and other agricultural  
32 development activities, road construction, and OHV traffic.

33  
34 The Ash Meadows sunray could occur in the affected area of the proposed Amargosa  
35 Valley SEZ.

36  
37  
38 **Black Milkvetch (*Astragalus funereus*)**

39  
40 ESA Listing Status: Not Listed  
41 BLM Listing Status: Sensitive (Nevada)  
42 State Status: Not Listed in Any State  
43 Rarity: Nevada State Rank S2; USFWS Species of Concern

44  
45 The black milkvetch is a small, tufted, herbaceous perennial dicot in the Fabaceae (bean)  
46 family that is native to Nevada but also occurs in California. This species is probably endemic to

1 the Death Valley region in southern Nevada and California. The plant consists of a taproot with a  
2 woody crown that gives rise to several prostrate or trailing stems that are woody below, and  
3 0.8 to 3 in. (2 to 8 cm) long. All of the herbage is covered with stiff hairs. The stems bear  
4 alternate, crowded, pinnately compound leaves. The black milkvetch blooms during April to  
5 May, with ascending clusters of pea-like flowers on stalks arising from the leaf bases. The  
6 flowers are pinkish purple with darker red veins, and each flower base (the calyx) is covered  
7 with black hairs. The fruits are large, oblong, pointed, hairy pods with a curved tip that are  
8 attached to the plant by ascending short stalks. The leathery pods contain numerous smooth,  
9 heart-shaped seeds that are olive, brown, or black. *Astragalus purshii* is a synonym for  
10 *Astragalus funereus* (Jepson 2010; NatureServe 2010).

11  
12 The black milkvetch grows on gravelly clay ridges and ledges on limestone or volcanic  
13 substrates at elevations between 4,200 and 6,900 ft (1,277 and 2,098 m) (Jepson 2010;  
14 NatureServe 2010).

15  
16 Major threats are associated with habitat disturbance or destruction, timber harvest,  
17 recreation, fire, grazing, effects of small population size, woody plant encroachment, exotic  
18 species invasion, succession, global climate change, and pollution.

19  
20 The black milkvetch could occur in the affected area of the proposed Amargosa Valley  
21 SEZ.

## 22 23 24 **Blaine Fishhook Cactus (*Sclerocactus blainei*)**

25  
26 ESA Listing Status: Not Listed

27 BLM Listing Status: Sensitive (Nevada)

28 State Listing Status: Protected in Nevada

29 Rarity: Nevada State Rank S1; USFWS Species of Concern

30  
31 The Blaine fishhook cactus is a small perennial dicot cactus in the family Cactaceae that  
32 is native and endemic to southeastern Nevada and southwestern Utah. The plant is an erect, spiny  
33 cactus with an unbranched, unsegmented succulent stem that is pineapple-shaped and is 1.2 to  
34 6 in. (3 to 15 cm) tall and 0.8 to 3 in. (2 to 8 cm) in diameter. The stem has 6 to 12 prominent  
35 ribs that are armed with clusters of stiff spines arising from wart-like tubercles (areoles). Each  
36 areole has 11 to 22 erect and spreading spines; some may be hooked, and others may be flat and  
37 ribbon-like. Young spines may be covered with very fine, soft hairs. The Blaine fishhook cactus  
38 blooms from April to May, with a cluster of funnel-shaped, pink-purplish flowers that are  
39 crowded among the dense spines at the top of the stem. The fruit is a barrel-shaped green to red  
40 berry that is persistent on the parent plant. When dry and mature, the fruit splits open to release  
41 large black seeds with small warts that are transported by winds and rain. The taxonomy of  
42 *Sclerocactus blainei* is not completely understood, and there are many questionable synonyms  
43 (eFloras.org 2010; NatureServe 2010).

44  
45 The Blaine fishhook cactus grows in greasewood, galleta grass, shadscale, and sagebrush  
46 communities on alkaline substrates and volcanic gravels with a clay matrix in valley bottoms at

1 elevations between 5,100 and 5,300 ft (1,550 and 1,611 m) (eFloras.org 2010; NatureServe  
2 2010). Only three occurrences of this species are currently known.

3  
4 Major threats are associated with habitat disturbance or destruction, recreation, fire,  
5 grazing, effects of small population size, exotic species invasion, succession, global climate  
6 change, and pollution.

7  
8 The Blaine fishhook cactus could occur in the affected area of the proposed Dry Lake  
9 Valley North SEZ.

10  
11  
12 **Brandegee's Milkvetch (*Astragalus brandegeei*)**

13  
14 ESA Listing Status: Not Listed  
15 BLM Listing Status: Sensitive (Colorado)  
16 State Listing Status: Not Listed  
17 Rarity: Colorado State Rank S1

18  
19 The Brandegee's milkvetch is an herbaceous perennial dicot in the Fabaceae (bean)  
20 family that is native to Colorado but is also found in other western states. The plant is less than  
21 39 in. (100 cm) tall and has arching stems that may become prostrate or mat-forming. The stems  
22 may be smooth or hairy. The plant has alternate, pinnately compound leaves that are hairy on one  
23 or both surfaces. Clusters of pea-like flowers are produced from April to September on stalks  
24 arising from the leaf bases. The flowers are white or bicolored or with red, purple, or yellow  
25 streaks or spots. The fruits are oblong, pointed legumes (pods) that may be hairy or smooth and  
26 that contain numerous smooth seeds that are olive, brown, or black (CNHP 2010; NatureServe  
27 2010).

28  
29 The Brandegee's milkvetch grows in a variety of habitats, including sandy or gravelly  
30 banks, flats, and stony meadows within pinyon-juniper woodlands. Substrates are usually  
31 sandstone with granite or occasional basalt. Its elevation ranges between 5,400 and 8,800 ft  
32 (1,600 and 2,700 m) (CNHP 2010).

33  
34 Major threats are associated with habitat disturbance or destruction, recreation, effects of  
35 small population size, woody plant encroachment, exotic species invasion, succession, global  
36 climate change, and pollution.

37  
38 The Brandegee's milkvetch could occur in the affected areas of the proposed Antonito  
39 Southeast, Fourmile East, and Los Mogotes East SEZs.

40  
41  
42 **California Barrel Cactus (*Ferocactus cylindraceus* var. *cylindraceus*)**

43  
44 ESA Listing Status: Not Listed  
45 BLM Listing Status: Not Listed  
46 State Listing Status: Arizona Salvage Restricted (SR)

1           Rarity: None  
2

3           The California barrel cactus is a large perennial dicot cactus in the family Cactaceae that  
4 is native to Arizona but also occurs in California. The plant is a large, erect, spiny cactus with an  
5 unbranched, unsegmented, succulent stem in the form of a cylinder that may be 6.5 ft (2 m) tall  
6 or higher and 1.3 ft (0.4 m) in diameter. The stem has 21 to 31 prominent ribs that are armed  
7 with clusters of stiff spines arising from wart-like tubercles (areoles). Each areole has 12 to  
8 32 erect and spreading spines, the longest of which are 3 to 7 in. (7.5 to 17 cm), and may be  
9 whitish, yellow, pink, dull red, or brown. The California barrel cactus blooms from April to May,  
10 with a crown of flowers that are crowded among the dense spines at the top of the columnar  
11 stem. The individual flowers are maroon on the outside and yellow on the inside. The fruit is a  
12 yellow, ovoid, leathery or fleshy, smooth berry that is spineless and contains black seeds. The  
13 dried flower parts are persistent on the top of the mature fruit (eFloras.org 2010; Jepson 2010;  
14 NatureServe 2010).  
15

16           The California barrel cactus grows on gravelly or rocky hillsides, canyon walls, alluvial  
17 fans, and desert washes in Mojave and Sonoran deserts scrub at elevations between 200 and  
18 2,900 ft (61 and 882 m) (eFloras.org 2010; NatureServe 2010).  
19

20           Major threats are associated with habitat disturbance or destruction, recreation, fire,  
21 grazing, effects of small population size, exotic species invasion, succession, global climate  
22 change, and pollution.  
23

24           The California barrel cactus could occur in the affected area of the proposed Gillespie  
25 SEZ.  
26

### 27 28 **California Fan Palm (*Washingtonia filifera*)** 29

30           ESA Listing Status: Not Listed

31           BLM Listing Status: Not Listed

32           State Listing Status: Arizona Salvage Restricted (SR)

33           Rarity: Arizona State Rank S1  
34

35           The California fan palm is a large perennial monocot palm tree in the Arecaceae family  
36 that is native to Arizona and California but also occurs in Nevada and Florida, probably as an  
37 exotic. The plant consists of an erect, columnar, unbranched trunk that is 20 to 75 ft (6 to 23 m)  
38 tall and 1 to 3 ft (0.3 to 1 m) in diameter, often clothed with a thick, skirt-like thatch of dead,  
39 persistent leaves that sometimes reaches all the way to the ground. The alternate leaves are fan-  
40 shaped and 3 to 6 ft (1 to 1.8 m) long with 40 to 60 folds, torn nearly to the base. The margins of  
41 the leaf divisions have numerous white, thread-like fibers. The very stout leaf stalks (petioles)  
42 are 2 to 5 ft (0.6 to 1.5 m) long and have large hooked teeth on the edges. These large leaves  
43 form a loose and open crown at the top of the trunk. California fan palm blooms from February  
44 to June, with a large, branched, spike-like inflorescence that hangs down among the leaves and  
45 bears numerous white flowers. The fruit is a small, ovoid, black, fleshy, one-seeded drupe  
46 (Jepson 2010; NatureServe 2010).

1  
2 The California fan palm grows in desert washes, seeps, and springs where underground  
3 water is continuously available and in desert oases in isolated areas of the Sonoran and Mojave  
4 Deserts at elevations between 500 and 1,000 ft (150 and 300 m) (eFloras.org 2010; Jepson 2010).

5  
6 Major threats are associated with habitat disturbance or destruction, recreation, fire,  
7 grazing, effects of small population size, exotic species invasion, succession, global climate  
8 change, and pollution.

9  
10 The California fan palm could occur in the affected area of the proposed Brenda SEZ.

11  
12  
13 **Chaparral Sand-Verbena (*Abronia villosa* var. *aurita*)**

14  
15 ESA Listing Status: Not Listed  
16 BLM Listing Status: Sensitive (California)  
17 State Listing Status: Not Listed  
18 Rarity: California State Rank S2

19  
20 The Chaparral sand-verbena is an herbaceous annual dicot in the Nyctaginaceae family  
21 that is native to California and endemic to southern California. The plant consists of a loose mat  
22 of branched stems that are prostrate to ascending, widely spreading, and up to 30 in. (80 cm)  
23 long. The stems usually have a reddish tinge and are glandular-hairy. The stems bear opposite,  
24 oval, fleshy leaves that are grayish and glandular and may be hairy. Chaparral sand-verbena  
25 blooms from January to September, with dense roundish clusters of magenta flowers on stalks  
26 that arise from leaf bases at the ends of the branches. The fruit is a winged achene  
27 (eFloras.org 2010; Jepson 2010; NatureServe 2010).

28  
29 The Chaparral sand-verbena grows on sandy sites in chaparral desert sand dunes, coastal  
30 scrub habitats, and sage-scrub at elevations between 350 and 5,250 ft (100 and 1,600 m)  
31 (eFloras.org 2010; NatureServe 2010). Major threats are associated with habitat disturbance or  
32 destruction, recreation, fire, grazing, effects of small population size, woody plant encroachment,  
33 exotic species invasion, succession, global climate change, and pollution.

34  
35 The Chaparral sand-verbena could occur in the affected areas of the proposed Imperial  
36 East and Riverside East SEZs.

37  
38  
39 **Compact Cat's-Eye (*Cryptantha compacta*)**

40  
41 ESA Listing Status: Not Listed  
42 BLM Listing Status: Sensitive  
43 State Listing Status: Not Listed  
44 Rarity: Nevada State Rank S1; Utah State Rank S2  
45

1 The Compact cat's-eye is an herbaceous perennial dicot in the Boraginaceae family that  
2 is native to Utah but also occurs in Nevada. The plant is 1 to 4 in. (3 to 10 cm) tall and consists  
3 of numerous erect bristly stems, each with a rosette of basal leaves, arising from a woody base.  
4 The crowded, alternate, oval leaves on the stems are also bristly. The Compact cat's-eye blooms  
5 from May to June, with clusters of blossoms with white petals and yellow throats, at the ends of  
6 the branches. The oval base of each flower (the calyx) is covered with long, bristly hairs. The  
7 fruit is a small, smooth, brown nutlet, four of which are produced by each flower (NatureServe  
8 2010; Utah Native Plant Society 2010).

9  
10 The Compact cat's-eye grows in a variety of habitats, including salt desert shrub and  
11 mixed desert shrub communities, on gravelly loam and on open slopes and ridges at elevations of  
12 6,200 to 7,400 ft (1,885 to 2,250 m) (Utah Native Plant Society 2010).

13  
14 Major threats are associated with habitat disturbance or destruction, timber harvest,  
15 recreation, fire, grazing, effects of small population size, woody plant encroachment, exotic  
16 species invasion, succession, global climate change, and pollution.

17  
18 The Compact cat's-eye could occur in the affected areas of the proposed Escalante  
19 Valley, Milford Flats South, and Wah Wah Valley SEZs.

## 20 21 22 **Creamy Blazing Star (*Mentzelia tridentata*)**

23  
24 ESA Listing Status: Not Listed  
25 BLM Listing Status: Sensitive (California)  
26 State Listing Status: Not Listed  
27 Rarity: California State rank S2

28  
29 The creamy blazing star is an annual herbaceous dicot in the Loasaceae family that is  
30 native and endemic to California. The plant consists of a branching, erect, hairy stem that is 2 to  
31 10 in. (5 to 25 cm) tall. The stem bears widely separated, opposite, lance-shaped leaves that are  
32 wavy-edged and have irregular teeth. The creamy blazing star blooms from March to May, with  
33 white to pale yellow flowers that arise from leaf bases at the end of the stem. The fruit is a  
34 barrel-shaped to cylindrical capsule on a short stalk that may be erect or bent downward. The  
35 capsule contains a compressed, ashy-white seed (Jepson 2010; NatureServe 2010).

36  
37 The creamy blazing star is endemic to California and grows in Mojave Desert  
38 creosotebush scrub communities on rocky and sandy substrates at elevations below 3,900 ft  
39 (1,200 m) (Jepson 2010; NatureServe 2010).

40  
41 Major threats are associated with habitat disturbance or destruction, recreation, fire,  
42 grazing, effects of small population size, exotic species invasion, succession, global climate  
43 change, and pollution (NatureServe 2010).

44  
45 The creamy blazing star could occur in the affected area of the proposed Riverside East  
46 SEZ.

1 **Death Valley Beardtongue (*Penstemon fruticiformis* ssp. *amargosae*)**

2  
3 ESA Listing Status: Not Listed  
4 BLM Listing Status: Sensitive (Nevada)  
5 State Listing Status: Not Listed  
6 Rarity: Nevada State Rank S2  
7

8 The Death Valley beardtongue is a shrubby perennial dicot in the Plantaginaceae family  
9 that is native and endemic to the Death Valley region of southern Nevada and California, where  
10 it is known only from Inyo and San Bernardino Counties in California and from Clark and Nye  
11 Counties in Nevada. The plant consists of a densely branched shrub that is 12 to 24 in. (30 to  
12 60 cm) tall and is usually wider than tall. The erect to spreading stems are smooth and bear thick,  
13 opposite leaves that are long, narrow, and lance-shaped. The leaves are usually folded lengthwise  
14 or curved inward. The Death Valley beardtongue blooms from April to June, with wide-mouthed  
15 tubular flowers in shades of white, blue, pink or purple, in clusters that arise from the bases of  
16 leaves or bracts at stem nodes. The bottom petal of each flower has a tuft of yellowish hair in its  
17 center and several purple veins. The outside of the flower petals are glandular-hairy. The fruit is  
18 an oval capsule that contains numerous irregularly angled seeds (Jepson 2010;  
19 NatureServe 2010).

20  
21 The Death Valley beardtongue grows in Mojave desertscrub communities at elevations  
22 between 2,800 and 4,600 ft (851 and 1,398 m) (Jepson 2010; NatureServe 2010).

23  
24 Major threats are associated with habitat disturbance or destruction, recreation, fire,  
25 grazing, effects of small population size, exotic species invasion, succession, global climate  
26 change, and pollution (NatureServe 2010).

27  
28 The Death Valley beardtongue could occur in the affected area of the proposed Amargosa  
29 Valley SEZ.  
30  
31

32 **Desert Night-Blooming Cereus (*Peniocereus greggii* var. *greggii*)**

33  
34 ESA Listing Status: Not Listed  
35 BLM Listing Status: Sensitive (New Mexico)  
36 State Listing Status: Endangered in New Mexico  
37 Rarity: New Mexico State Rank S1; USFWS Species of Concern  
38

39 The desert night-blooming cereus (*Peniocereus greggii* var. *greggii*) occurs in southern  
40 New Mexico and western Texas. Within New Mexico, it occurs in Doña Ana, Grant, Hidalgo,  
41 and Luna Counties. Habitat is gently broken to level terrain in desert grassland, Chihuahuan  
42 desertscrub, and gravelly flats and washes. Substrate is sandy to silty gravelly soil. It is typically  
43 found growing through shrubs, especially creosotebush and honey mesquite (*Prosopis*  
44 *glandulosa*) (NMRPTC 2010).  
45

1           Flowering nocturnally in June, the desert night-blooming cereus produces fragrant, white  
2 flowers. The fruit have small blackish spines and turn red when ripe. The species depends on  
3 insect pollinators such as hawkmoths, which is difficult because of the species' extremely patchy  
4 dispersal. Pesticide use in the southwestern United States adversely affects pollinator  
5 populations, which in turn limits the reproduction of the desert night-blooming cereus  
6 (NatureServe 2010; NMRPTC 2010).

7  
8           Although 15 occurrences have been reported in New Mexico, most of these populations  
9 are historic or have been extirpated.

10  
11           Threats include private and commercial collectors, agriculture, and urbanization.

12  
13           Currently, the desert night-blooming cereus is listed as sensitive by the BLM, listed as  
14 endangered in New Mexico, ranked S1 in New Mexico, and is a USFWS species of concern.

15  
16           The desert night-blooming cereus may occur within the affected area of the proposed  
17 Afton SEZ (NatureServe 2010; NMRPTC 2010).

18  
19  
20 **Eastwood Milkweed (*Asclepias eastwoodiana*)**

21  
22           ESA Listing Status: Not Listed

23           BLM Listing Status: Sensitive (Nevada)

24           State Listing Status: Not Listed

25           Rarity: Nevada State Rank S2; USFWS Species of Concern

26  
27           The Eastwood milkweed is a perennial herbaceous dicot in the Asclepiadaceae  
28 (milkweed) family that is native and endemic to Arizona on public and private lands in  
29 Esmeralda, Lander, Lincoln, and Nye Counties. The plant consists of several erect to spreading  
30 thick stems arising from a buried root crown. The stems are 4 to 8 in. (10 to 20 cm) tall and bear  
31 thick, widely separated, opposite leaves that are oval in outline and pointed. The leaf margins are  
32 covered with short, woolly hair. The Eastwood milkweed blooms in late spring, with white  
33 hooded flowers in clusters that arise from leaf bases near the ends of the stems. After opening,  
34 each flower is subtended by a ring of small, purplish, leaf-like bracts. The fruit is an erect,  
35 spindle-shaped, dry follicle (capsule) on a short stalk that splits open on one side when mature.  
36 Each of the numerous seeds has a tuft of silky hairs that help the seeds disburse on the wind  
37 (NatureServe 2010).

38  
39           The Eastwood milkweed grows in open areas on a wide variety of basic (pH usually >8)  
40 soils—including calcareous clay knolls, sand, carbonate or basaltic gravels, and shale outcrops—  
41 generally barren and lacking competition. It frequently occurs in small washes or other moisture-  
42 accumulating microsites in the shadscale, mixed-shrub, sagebrush, and lower pinyon-juniper  
43 zones at elevations between 4,700 and 7,100 ft (1,428 and 2,158 m) (NNHP 2010).

44  
45           Major threats are associated with habitat disturbance or destruction, recreation, effects of  
46 small population size, exotic species invasion, succession, global climate change, and pollution.

1  
2 The Eastwood milkweed could occur in the affected areas of the proposed Dry Lake  
3 Valley North, Gold Point, and Millers SEZs.  
4

5  
6 **Flat-Seeded Spurge (*Chamaesyce platysperma*)**  
7

8 ESA Listing Status: Not Listed  
9 BLM Listing Status: Sensitive (California)  
10 State Listing Status: Not Listed  
11 Rarity: California State Rank S1  
12

13 The flat-seeded spurge is an herbaceous annual dicot in the Euphorbiaceae family that is  
14 native to California but also occurs in Arizona. The plant forms sprawling mounds from 20 to  
15 40 in. (50 to 100 cm) in diameter. The stems are arching-ascending when young but become  
16 more prostrate with age, and they contain milky sap. The widely spaced leaves are opposite and  
17 oval. The flat-seeded spurge blooms from February to September, with solitary yellowish  
18 flowers on short stalks that arise from leaf bases along the stems. The fruit is a round capsule that  
19 is exerted from the flower base on a lax stalk and contains a white seed (AZGFD 2010;  
20 Jepson 2010; NatureServe 2010).  
21

22 The flat-seeded spurge grows on sandy substrates of desert dunes within Sonoran  
23 desertscrub communities at elevations below 650 ft (200 m) (California Native Plant  
24 Society 2010).  
25

26 Major threats are associated with habitat disturbance or destruction, recreation, fire,  
27 grazing, effects of small population size, woody plant encroachment, exotic species invasion,  
28 succession, global climate change, and pollution.  
29

30 The flat-seeded spurge could occur in the affected area of the proposed Imperial East  
31 SEZ.  
32

33  
34 **Fragile Rockbrake (*Cryptogramma stelleri*)**  
35

36 ESA Listing Status: Not Listed  
37 BLM Listing Status: Sensitive (Colorado)  
38 State Listing Status: Not Listed  
39 Rarity: Colorado State Rank S2  
40

41 The fragile rockbrake is a perennial fern that is native to Colorado but also occurs in  
42 several western states and Canada. Ferns reproduce via tiny spores shed into the air; therefore,  
43 the plants have no flowers, fruits, or seeds. The spores eventually settle to the soil and germinate  
44 to form inconspicuous subterranean gametophytes, from which aerial plants (sporophytes)  
45 develop. Fragile rockbrake consists of scaly creeping stems (rhizomes) that are fleshy and brittle,  
46 which produce erect pinnately compound fronds (leaves) that are 2 to 8 in. (5 to 20 cm) tall and

1 only persist until late summer, when they die and are shed. In this species, the fertile (spore-  
2 bearing) and sterile fronds are different in appearance. The fertile fronds are narrower but  
3 slightly longer than the sterile ones, and the edges of the pinnules curl under to cover the spore-  
4 bearing structures on their underside edges. Spores are shed during summer (eFloras.org 2010;  
5 NatureServe 2010).

6  
7 The fragile rockbrake grows in moist soils on shaded limestone cliffs and rock ledges,  
8 often in association with mosses, at elevations higher than 7,000 ft (2,100 m) (eFloras.org 2010;  
9 NatureServe 2010). The fragile rockbrake is afforded some protection by the remote, relatively  
10 inaccessible location of its habitat.

11  
12 Major threats are associated with habitat disturbance or destruction, recreation, effects of  
13 small population size, exotic species invasion, succession, global climate change, and pollution.

14  
15 The fragile rockbrake could occur in the affected areas of the proposed Antonito  
16 Southeast, Fourmile East, and Los Mogotes East SEZs.

17  
18  
19 **Frisco Buckwheat (*Eriogonum soredium*)**

20  
21 ESA Listing Status: Under review for listing

22 BLM Listing Status: Sensitive (Utah)

23 State Listing Status: Not Listed

24 Rarity: Utah State Rank S1

25  
26 The Frisco buckwheat is a densely matted, mound-forming, perennial dicot herb that is  
27 native to Utah and endemic to the San Francisco Mountains in Beaver County. The plant is 1 to  
28 1.6 in. (2 to 4 cm) tall, and the herbage is white-hairy. The vegetative stems are densely crowded  
29 with elongated oval leaves that have a tendency to curl. The short, erect, leafless, flowering  
30 stalks (scapes) are hairy and rise above the cushion of vegetative stems, and they bear round  
31 clusters of white or pinkish flowers at their ends from June to September. The fruit is a light  
32 brown, three-sided achene (eFloras.org 2010; NatureServe 2010; Utah Native Plant Society  
33 2010).

34  
35 The Frisco buckwheat grows on gravelly to rocky limestone slopes, in mixed saltbush  
36 and sagebrush communities and in pinyon-juniper communities on white limestone outcrops at  
37 elevations between 6,600 and 7,300 ft (2,006 and 2,220 m) (eFloras.org 2010;  
38 NatureServe 2010).

39  
40 Major threats are associated with habitat disturbance or destruction, mining, timber  
41 harvest, recreation, fire, grazing, effects of small population size, woody plant encroachment,  
42 exotic species invasion, succession, global climate change, and pollution.

43  
44 The Frisco buckwheat could occur in the affected area of the proposed Wah Wah Valley  
45 SEZ.

1 **Frisco Clover (*Trifolium friscanum*)**

2  
3 ESA Listing Status: Under review for listing  
4 BLM Listing Status: Sensitive (Utah)  
5 State Listing Status: Not Listed  
6 Rarity: Utah State Rank S1  
7

8 The Frisco clover is a mat-forming herbaceous perennial dicot in the Fabaceae (bean)  
9 family that is endemic to Beaver and Millard Counties in Utah. The plant consists of numerous  
10 short stems arising from a rhizomatous woody crown to form a cushion that is 0.3 to 1 in. (0.8 to  
11 3 cm) tall. The stems are obscured by densely crowded, alternate, trifoliate compound leaves.  
12 The stems and leaves are silvery-hairy. The Frisco clover blooms in June, with clusters of  
13 reddish-purple, pea-like flowers that are produced on stalks arising from leaf bases at the ends of  
14 the stems. The fruits are oblong pods that are enclosed in the persistent, withered petals and  
15 calyx and contain several smooth brown or black seeds (eFlorae.org 2010; NatureServe 2010;  
16 Utah Native Plant Society 2010).  
17

18 The Frisco clover grows on volcanic gravels and limestone substrates in association with  
19 pinyon-juniper woodlands at elevations between 6,900 and 7,300 ft (2,098 and 2,219 m) (Utah  
20 Native Plant Society 2010).  
21

22 Major threats are associated with habitat disturbance or destruction, mining, timber  
23 harvest, recreation, fire, grazing, effects of small population size, woody plant encroachment,  
24 exotic species invasion, succession, global climate change, and pollution.  
25

26 The Frisco clover could occur in the affected area of the proposed Wah Wah Valley SEZ.  
27  
28

29 **Giant Spanish-Needle (*Palafoxia arida* var. *gigantea*)**

30  
31 ESA Listing Status: Not Listed  
32 BLM Listing Status: Sensitive (California)  
33 State Listing Status: Not Listed  
34 Rarity: California State rank S1  
35

36 The giant Spanish-needle is a large, shrubby, annual or perennial herbaceous dicot in the  
37 Asteraceae (sunflower) family that is native to California but also occurs in Arizona. The plant  
38 consists of numerous erect, slender, much-branched stems that are 36 to 72 in. (91 to 183 cm)  
39 tall. The stems bear widely spaced, long, linear, pointed, dark green leaves that are opposite near  
40 the base and alternate above. The stems may be glandular and hairy on their upper parts. Giant  
41 Spanish-needle blooms from February to May, with white to pink-purple composite flowers at  
42 the ends of the branches. The fruit is a four-angled achene that has a tuft of scales at the end  
43 (a pappus), is dandelion-like, and is dispersed by the wind (California Native Plant Society 2010;  
44 NatureServe 2010).  
45

1 The giant Spanish-needle grows on desert sand dunes, along riverine environments, and  
2 irrigation canals at elevations lower than 328 ft (100 m) (California Native Plant Society 2010).

3  
4 Major threats are associated with habitat disturbance or destruction, recreation, fire,  
5 grazing, effects of small population size, exotic species invasion, succession, global climate  
6 change, and pollution.

7  
8 The giant Spanish-needle could occur in the affected areas of the proposed Imperial East  
9 and Riverside East SEZs.

10  
11  
12 **Gold Butte Moss (*Didymodon nevadensis*)**

13  
14 ESA Listing Status: Not Listed

15 BLM Listing Status: Sensitive (Nevada)

16 State Listing Status: Not Listed

17 Rarity: Nevada State Rank S1

18  
19 The Gold Butte moss is a small, perennial, evergreen moss that is native to Nevada but  
20 also occurs in Colorado, Texas, British Columbia (Canada), and southern Chihuahua in Mexico.  
21 The plant has a wide distribution but is rare locally. The plants form a dense, mat-like turf,  
22 blackish green above and reddish brown below. The moss turf consists of thin, leafy stems,  
23 branching occasionally, up to 0.4 in. (1 cm) long. The stems bear crowded, overlapping, long-  
24 oval, pointed leaves that are appressed to and twisted around the stem when dry and are weakly  
25 spreading when moist. The leaves have a large midvein and inrolled margins. The base of the  
26 turf produces several rhizoids that arise from leaf bases near the bases of the stems. Rhizoids are  
27 simple root-like structures that anchor the plant and absorb water. Mosses normally reproduce  
28 via tiny spores shed into the air; therefore, the plants have no flowers, fruits, or seeds. However,  
29 only female plants of the Gold Butte moss have been found, and these reproduce asexually by  
30 producing round or oval tubers on branching rhizoids at the soil surface. Seasonal growth is  
31 initiated in autumn by the production of new stems from the tubers. Stem elongation occurs  
32 through the cooler months of autumn, winter, and early spring (eFloras.org 2010;  
33 NatureServe 2010; NNHP 2010).

34  
35 The Gold Butte moss grows on or near gypsiferous deposits and outcrops or limestone  
36 boulders, especially on east- to north-facing slopes of loose, uncompacted soil. It is typically  
37 associated with other mosses and lichens. Its elevation ranges between 1,300 and 2,300 ft  
38 (395 and 700 m) (eFloras.org 2010; NatureServe 2010; NNHP 2010).

39  
40 Major threats are associated with habitat disturbance or destruction, recreation, effects of  
41 small population size, woody plant encroachment, exotic species invasion, succession, global  
42 climate change, and pollution.

43  
44 The Gold Butte moss may occur in the affected area of the proposed Dry Lake SEZ.

1 **Grama Grass Cactus (*Sclerocactus papyracanthus*)**

2  
3 ESA Listing Status: Not Listed  
4 BLM Listing Status: Sensitive (New Mexico)  
5 State Listing Status: Not Listed  
6 Rarity: Not Listed  
7

8 The grama grass cactus (*Sclerocactus papyracanthus*) occurs in southern Arizona,  
9 New Mexico, and Western Texas. Typical habitat is pinyon-juniper woodland, Chihuahuan  
10 desertscrub, and desert and Great Plains grassland on open flats or gentle slopes between  
11 4,900 and 7,200 ft (1,500 and 2,200 m). Sandy soils with a calcareous or gypseous component  
12 are characteristic. Associated vegetation includes blue grama grass (*Bouteloua gracilis*),  
13 Fendler’s three-awn (*Aristida fendleri*), and New Mexico feathergrass (*Stipa neomexicana*)  
14 (eFloras.org 2010; NatureServe 2010; NMRPTC 2010).  
15

16 The grama grass cactus’s white flowers appear in April and May, with fruits appearing in  
17 early June that are dry and tan colored when mature (eFloras.org 2010; NatureServe 2010).  
18

19 Once abundant in parts of its range, grama grass cactus populations are sharply reduced  
20 because of rangeland degradation, collection, and development. Additional threats include the  
21 cactus and succulent trade, overgrazing and trampling by livestock, OHV traffic, and  
22 urbanization (NatureServe 2010).  
23

24 The grama grass cactus may occur in the affected area of the proposed Afton SEZ.  
25  
26

27 **Halfring Milkvetch (*Astragalus mohavensis* var. *hemigyris*)**

28  
29 ESA Listing Status: Not Listed  
30 BLM Listing Status: Sensitive (Nevada)  
31 State Listing Status: Not Listed  
32 Rarity: Nevada State rank S2; USFWS Species of Concern  
33

34 The halfring milkvetch is a small, herbaceous, annual or short-lived perennial dicot in the  
35 Fabaceae (bean) family that is native and endemic to Nevada. The plant consists of a taproot  
36 with a woody crown that gives rise to several open, widely branched, weakly ascending stems  
37 that are 2 to 14 in. (5 to 35 cm) long. All of the herbage is covered with fine hair that gives the  
38 plant a silvery-gray appearance. The stems bear alternate, widely separated, pinnately compound  
39 leaves on long stalks. The oval-pointed, thick leaflets are opposite. The halfring milkvetch  
40 blooms during April to June, with ascending clusters of pea-like flowers on stalks arising from  
41 leaf bases. The flowers are pinkish purple with darker purple veins, and each flower base  
42 (the calyx) is covered with hairs. The fruits are large, oblong, curved, hairy pods that are attached  
43 to the plant by short stalks. The stiffly leathery pods contain numerous smooth seeds  
44 (Jepson 2010; NatureServe 2010; NNHP 2010).  
45

1 The halfring milkvetch grows on carbonate gravels and derivative soils on terraced hills  
2 and ledges, open slopes, and along washes within the creosotebush-bursage, blackbrush, and  
3 mixed-shrub habitat communities. Its elevation ranges between 3,000 and 5,600 ft (914 and  
4 1,707 m) (Jepson 2010; NatureServe 2010; NNHP 2010).

5  
6 Major threats are associated with habitat disturbance or destruction, recreation, fire,  
7 grazing, effects of small population size, woody plant encroachment, exotic species invasion,  
8 succession, global climate change, and pollution (NatureServe 2010; NNHP 2010).

9  
10 The halfring milkvetch could occur in the affected area of the proposed Dry Lake SEZ.

11  
12  
13 **Harwood's Eriastrum (*Eriastrum harwoodii*)**

14  
15 ESA Listing Status: Not Listed  
16 BLM Listing Status: Sensitive (California)  
17 State Listing Status: Not Listed  
18 Rarity: California State rank S2

19  
20 The Harwood's eriastrum is an annual herbaceous dicot in the Polemoniaceae (phlox)  
21 family that is native and endemic to California. The plant consists of a branching erect stem that  
22 is up to 8-in. (20-cm) tall. The stems bear widely separated alternate leaves that are thread-like  
23 and may be three-lobed near the base. The leaves are yellow-green and densely woolly. The  
24 Harwood's eriastrum blooms from March to June, with small, head-like inflorescences that are  
25 densely woolly and arise from leaf bases toward the ends of the stems. The individual flowers  
26 are straw-yellow, cream, or white. The fruit is a capsule that usually contains two seeds  
27 (Jepson 2010; NatureServe 2010).

28  
29 The Harwood's eriastrum is endemic to southern California and grows on desert sand  
30 dunes in creosotebush scrub and other sandy habitats at elevations between 650 and 3,000 ft  
31 (200 and 915 m) (California Native Plant Society 2010; Jepson 2010).

32  
33 Major threats are associated with habitat disturbance or destruction, recreation, fire,  
34 grazing, effects of small population size, exotic species invasion, succession, global climate  
35 change, and pollution (California Native Plant Society 2010).

36  
37 The Harwood's eriastrum could occur in the affected area of the proposed Riverside East  
38 SEZ.

39  
40  
41 **Hohokam Agave (*Agave murpheyi*)**

42  
43 ESA Listing Status: Not Listed  
44 BLM Listing Status: Sensitive (Arizona)  
45 State Listing Status: Arizona Highly Safeguarded (HS)  
46 Rarity: Arizona State Rank S2; USFWS Species of Concern

1 The Hohokam agave is a perennial monocot succulent in the Agavaceae family that is  
2 native and endemic to Nevada and Sonora, Mexico. The plant consists of a basal rosette of  
3 crowded, fleshy, long-lived leaves, and it is 24 to 47 in. (60 to 120 cm) tall. The ascending leaves  
4 are spatula-shaped, have undulating edges armed with spines, and have a stiff spine at the end of  
5 the leaf. The smooth leaves are light bluish-green to yellow-green, often cross-banded, and  
6 slightly incurved toward the center of the rosette. The Hohokam agave matures to reproductive  
7 age after 10 to 30 years. The plant blooms from late winter to spring by producing a very tall,  
8 erect, flowering stalk that reaches 10 to 13 ft (3 to 4 m) in height. The terminal one-quarter of  
9 this stalk bears crowded flower clusters on slightly ascending side branches. The individual  
10 flowers are waxy cream-green with purplish or brownish tips. After flowering, the flower stalk's  
11 side branches produce numerous bulbils that can produce new plants. The Hohokam agave  
12 blooms once and then dies. The fruit is an oval, beaked capsule on a short stalk. However, the  
13 plant rarely produces seed and propagates primarily via bulbils (eFloras.org 2010;  
14 NatureServe 2010).

15  
16 The Hohokam agave grows on benches or alluvial terraces on gentle bajada slopes above  
17 major drainages in desertscrub communities at elevations between 1,300 and 3,200 ft (395 and  
18 973 m). The bulbils are easily transported and transplanted, and some occurrences appear to be  
19 associated with old American Indian living sites (eFloras.org 2010; NatureServe 2010).

20  
21 Major threats are associated with habitat disturbance or destruction, recreation, fire,  
22 grazing, effects of small population size, woody plant encroachment, exotic species invasion,  
23 succession, global climate change, and pollution (AZGFD 2010).

24  
25 The Hohokam agave could occur in the affected area of the proposed Gillespie SEZ.

## 26 27 28 **Holmgren Lupine (*Lupinus holmgrenianus*)**

29  
30 ESA Listing Status: Not Listed

31 BLM Listing Status: Sensitive (Nevada)

32 State Listing Status: Not Listed

33 Rarity: Nevada State Rank S2

34  
35 The Holmgren lupine is an herbaceous perennial dicot in the Fabaceae (bean) family that  
36 is native to Nevada and probably endemic to the Death Valley region of southern Nevada and  
37 California. The plant consists of several stout, erect stems that are 16 to 26 in. (40 to 70 cm) tall.  
38 All of the herbage is covered with long hair. The stems are subtended by large, palmately  
39 compound basal leaves with four to seven spindle-shaped leaflets. The stems bear alternate  
40 leaves that are similar to the basal leaves, but smaller. The Holmgren lupine blooms during April  
41 to June, with attractive spikes of whorled pea-like flowers that rise above the leaves from the  
42 ends of the stems or that arise from leaf bases. The flowers are violet to purple with a yellow  
43 patch on the upper petal. The fruits are oblong, hairy, legume pods that are attached to the plant  
44 by short stalks. Each pod contains five to seven smooth seeds (Jepson 2010; NatureServe 2010).

1 The Holmgren lupine grows on dry desert slopes, washes, and valleys on volcanic  
2 substrates, sometimes in association with big sagebrush (*Artemisia tridentate*)-dominated  
3 communities, and in pinyon-juniper woodlands. Its elevation ranges between 4,600 and 8,200 ft  
4 (1,398 to 2,493 m) (Jepson 2010; NatureServe 2010).

5  
6 Major threats are associated with habitat disturbance or destruction, recreation, fire,  
7 grazing, effects of small population size, woody plant encroachment, exotic species invasion,  
8 succession, global climate change, and pollution (Jepson 2010; NatureServe 2010; NNHP 2010).

9  
10 The Holmgren lupine may occur in the affected areas of the proposed Amargosa Valley  
11 and Gold Point SEZs.

12  
13  
14 **Jones' Globemallow (*Sphaeralcea caespitosa*)**

15  
16 ESA Listing Status: Not Listed

17 BLM Listing Status: Sensitive (Utah)

18 State Listing Status: Not Listed

19 Rarity: Nevada State Rank S2; Utah State Rank S2

20  
21 The Jones' globemallow is an herbaceous perennial dicot in the family Malvaceae that is  
22 native to Utah but also occurs in Nevada. The plant is 1 to 10 in. (2 to 25 cm) tall and consists of  
23 several erect, branching stems arising from a branched woody crown. All of the plant herbage is  
24 densely hairy, giving the plant a gray appearance. Thick, fleshy, alternate leaves are crowded on  
25 the stems. The Jones' globemallow blooms from May to June and again in September with red-  
26 orange flowers on flower stalks that arise from leaf bases at the ends of the stems. The fruit is a  
27 globe-shaped group of wedge-shaped carpels. Each carpel has dense hairs on the wide end and  
28 contains one or more kidney-shaped seeds (NatureServe 2010; Utah Native Plant Society 2010).

29  
30 The Jones' globemallow typically grows on calcareous soils and gravels derived from  
31 Sevy dolomite, in association with mixed shrub, pinyon-juniper, and grassland communities at  
32 elevations between 5,000 and 6,500 ft (1,525 and 1,980 m) (NatureServe 2010; Utah Native  
33 Plant Society 2010).

34  
35 Major threats are associated with habitat disturbance or destruction, timber harvest,  
36 recreation, fire, grazing, effects of small population size, woody plant encroachment, exotic  
37 species invasion, succession, global climate change, and pollution.

38  
39 The Jones' globemallow could occur in the affected areas of the proposed Escalante  
40 Valley, Milford Flats South, and Wah Wah Valley SEZs.

1 **Las Vegas Bearpoppy (*Arctomecon californica*)**

2  
3 ESA Listing Status: Not Listed  
4 BLM Listing Status: Not Listed  
5 State Listing Status: Protected in Nevada  
6 Rarity: USFWS Species of Concern  
7

8 The Las Vegas bearpoppy is an herbaceous, short-lived perennial dicot that is native to  
9 Nevada. The plant consists of a stout taproot, from which arises a crowded basal clump of erect  
10 leaves that is about 5 in. (13 cm) tall. The leaves are wedge-shaped, with several shallow teeth on  
11 the top margin, and densely covered with long, white, shaggy hairs, which make them appear  
12 grayish-blue in color. The base of the plant is often surrounded by a layer of ash- or straw-  
13 colored dead leaves. The Las Vegas bearpoppy blooms from April to May, with several tall,  
14 smooth flowering stems that rise above the basal leaf clump to a height of about 20 in. (50 cm).  
15 Each flowering stem bears at its end a cluster of stalked flower buds that are initially nodding but  
16 become upright when the buds open to produce attractive yellow flowers with a dark center. The  
17 fruit is an upright, egg-shaped, persistent capsule that opens at the top by dark-colored flaps  
18 when the fruit dries and becomes mature. The capsule contains numerous small, shiny, black  
19 seeds (AZGFD 2010; NatureServe 2010; NNHP 2010).  
20

21 The Las Vegas bearpoppy grows on open, dry, spongy or powdery, often dissected  
22 (“badland”) or hummocked soils with a high gypsum content. These soils typically have a well-  
23 developed crust and are in areas of generally low relief on all aspects and slopes, with a sparse  
24 cover of other gypsum-tolerant species. Its elevation ranges between 1,050 and 3,650 ft (319 and  
25 1,110 m) (NatureServe 2010; NNHP 2010).  
26

27 Major threats are associated with habitat disturbance or destruction, recreation, fire,  
28 grazing, effects of small population size, woody plant encroachment, exotic species invasion,  
29 succession, global climate change, and pollution.  
30

31 The Las Vegas bearpoppy could occur in the affected area of the proposed Dry Lake  
32 SEZ.  
33  
34

35 **Las Vegas Buckwheat (*Eriogonum corymbosum* var. *nilesii*)**

36  
37 ESA Listing Status: Candidate  
38 BLM Listing Status: Sensitive (Nevada)  
39 State Listing Status: Not Listed  
40 Rarity: Nevada State Rank S1  
41

42 The Las Vegas buckwheat is a large perennial dicot shrub that is native and endemic to  
43 Nevada. The plant is known only from the Las Vegas and Muddy Mountains region of Clark  
44 County, Nevada. The plant consists of a mounded clump of spreading to upright, densely  
45 branched woody stems that are 12 to 48 in. (30 to 122 cm) tall. The branches are covered with  
46 woolly hair and somewhat swollen at the nodes. The branches bear alternate, oval leaves that are

1 densely hairy on the underside and silvery with very fine hair above. The Las Vegas buckwheat  
2 blooms from August to November, with dense, branching clusters of small, yellow flowers that  
3 are borne at the ends of the branches. The flowering branches are covered with sparse, silvery  
4 tufts of cobwebby hair and may be thorny. The fruit is a light brown, oval, three-sided achene  
5 enclosed by three leaf-like bracts (eFloras.org 2010; NatureServe 2010; NNHP 2010).  
6

7 The Las Vegas buckwheat grows on or near gypsum soils, in washes, drainages, or in  
8 areas of generally low relief in the Mojave Desert. Its elevation ranges between 1,900 and  
9 3,850 ft (578 and 1,170 m) (eFloraS.org 2010; NatureServe 2010; NNHP 2010).  
10

11 Las Vegas buckwheat populations are declining rapidly in Nevada, where the species is  
12 known from 15 occurrences encompassing an area of less than 1,500 acres (6 km<sup>2</sup>). Because the  
13 species is endemic and declining, conservation of this species is essential to ensure it remains a  
14 part of Nevada's flora.  
15

16 Major threats are associated with habitat disturbance or destruction, recreation, fire,  
17 grazing, effects of small population size, woody plant encroachment, exotic species invasion,  
18 succession, global climate change, and pollution (NNHP 2010)  
19

20 The Las Vegas buckwheat could occur in the affected area of the proposed Dry Lake  
21 SEZ.  
22  
23

#### 24 **Latimer's Woodland-Gilia (*Saltugilia latimeri*)**

25

26 ESA Listing Status: Not Listed

27 BLM Listing Status: Sensitive (California)

28 State Listing Status: Not Listed

29 Rarity: California State Rank S2  
30

31 The Latimer's woodland-gilia is an annual herbaceous dicot in the Polemoniaceae  
32 (phlox) family that is native and endemic to California. The plant consists of one to several erect  
33 branching stems that are 2 to 12 in. (5 to 30 cm) tall. The slender stems are subtended by a  
34 rosette of semi-erect basal leaves that are pinnately divided into deep lobes. The widely spaced  
35 stem leaves are similar but smaller or are merely toothed near the ends of the stems. Latimer's  
36 woodland-gilia blooms from March to June with small, ascending, head-like inflorescences that  
37 arise from leaf bases toward the ends of the stems. The individual funnel-shaped flowers are  
38 small and have pinkish-lavender petals and a purple throat. The fruit is a narrow, oval capsule  
39 that contains numerous seeds (Jepson 2010; NatureServe 2010).  
40

41 Latimer's woodland-gilia is endemic to California and grows in Mojave desertscrub  
42 communities, pinyon-juniper woodlands, and dry washes on rocky or sandy substrates at  
43 elevations between 1,300 and 6,500 ft (400 and 2,000 m) (Jepson 2010; NatureServe 2010).  
44

1 Major threats are associated with habitat disturbance or destruction, recreation, fire,  
2 grazing, effects of small population size, exotic species invasion, succession, global climate  
3 change, and pollution (NatureServe 2010).

4  
5 The Latimer's woodland-gilia could occur in the affected area of the proposed Riverside  
6 East SEZ.

7  
8  
9 **Little San Bernardino Mountains Linanthus (*Linanthus maculatus*)**

10  
11 ESA Listing Status: Not Listed  
12 BLM Listing Status: Sensitive (California)  
13 State Listing Status: Not Listed  
14 Rarity: California State Rank S1  
15

16 The Little San Bernardino Mountains linanthus is a very small annual herbaceous dicot in  
17 the Polemoniaceae (phlox) family that is native and endemic to California. The plant arises from  
18 a long taproot and is 0.4 to 1.2 in. (1 to 3 cm) high. The tiny, hairy stems branch to form small  
19 matted clusters on the sand surface. The stems bear oblong-linear, hairy, thick leaves that are  
20 only a few millimeters long. The Little San Bernardino Mountains linanthus blooms from March  
21 to May, with small, crowded, head-like flower clusters at the ends of the stems. The flowers are  
22 white with a red spot near the base of each recurved petal. The fruit is a capsule that contains  
23 several seeds (Jepson 2010; NatureServe 2010).

24  
25 The Little San Bernardino Mountains linanthus is known from fewer than 20 occurrences  
26 in southern California near Joshua Tree National Park in the Little San Bernardino Mountains.  
27 The plant grows on desert dunes and sandy flats in creosotebush scrub and Joshua tree woodland  
28 communities at elevations lower than 6,900 ft (2,100 m) (Jepson 2010; NatureServe 2010).

29  
30 Major threats are associated with habitat disturbance or destruction, recreation, fire,  
31 grazing, effects of small population size, exotic species invasion, succession, global climate  
32 change, and pollution (NatureServe 2010).

33  
34 The Little San Bernardino Mountains linanthus could occur in the affected area of the  
35 proposed Riverside East SEZ.

36  
37  
38 **Long-Calyx Milkvetch (*Astragalus oophorus* var. *lonchocalyx*)**

39  
40 ESA Listing Status: Not Listed  
41 BLM Listing Status: Sensitive (Nevada and Utah)  
42 State Listing Status: Not Listed  
43 Rarity: Nevada State Rank S2; Utah State Rank S1  
44

45 The long-calyx milkvetch is an herbaceous perennial dicot in the Fabaceae (bean) family  
46 that is native to Colorado but also occurs in Nevada. The plant arises from a woody crown; is

1 6 to 12 in. (15 to 30 cm) tall; and has erect, branching, hairy stems. The stems bear alternate,  
2 pinnately compound hairy leaves. Clusters of pea-like flowers are produced in June on stalks  
3 arising from leaf bases at the ends of the stems. The large flowers are pinkish purple and hang  
4 down from the nodding flower stalks. The fruits are large, oblong, inflated, hairy pods that  
5 remain attached to the plant by short stalks and contain numerous smooth seeds  
6 (NatureServe 2010; Utah Native Plant Society 2010).

7  
8 The long-calyx milkvetch grows in a variety of habitats, including pinyon-juniper  
9 woodlands, sagebrush, and mixed desert shrub communities at elevations between 5,800 and  
10 7,500 ft (1,750 and 2,300 m) (Utah Native Plant Society 2010).

11  
12 Major threats are associated with habitat disturbance or destruction, timber harvest,  
13 recreation, fire, grazing, effects of small population size, woody plant encroachment, exotic  
14 species invasion, succession, global climate change, and pollution.

15  
16 The long-calyx milkvetch could occur in the affected areas of the proposed Dry Lake  
17 Valley North, Escalante Valley, and Wah Wah Valley SEZs.

## 18 19 20 **Many-Stemmed Spider-Flower (*Cleome multicaulis*)**

21  
22 ESA Listing Status: Not Listed

23 BLM Listing Status: Sensitive (Colorado)

24 State Listing Status: Not Listed

25 Rarity: Colorado State Rank S2; USFWS Species of Concern

26  
27 The many-stemmed spider-flower is a slender herbaceous annual dicot in the  
28 Capparaceae family that is native to Colorado. The usually unbranched or sparingly branched  
29 leafy stems are 8 to 28 in. (20 to 70 cm) tall, with alternate leaves that are palmately compound  
30 with three narrow leaflets that often fold along the midrib. The many-stemmed spider-flower  
31 blooms from August to September, with pink flowers that are borne on thin stalks arising from  
32 the base of reduced stem leaves. The fruits are large, oblong, multiseeded capsules with a stalk-  
33 like base, and they droop at maturity. The round seeds are light brown and smooth (CNHP 2010;  
34 NatureServe 2010)

35  
36 The many-stemmed spider-flower is restricted to habitats that include the margins of  
37 moist, slightly saline depressions, such as alkali sinks, alkaline meadows, and old lakebeds at  
38 elevations of 3,600 to 4,200 ft (1,098 to 1,281 m) (NatureServe 2010).

39  
40 Major threats are associated with habitat disturbance or destruction, timber harvest,  
41 recreation, fire, grazing, effects of small population size, woody plant encroachment, exotic  
42 species invasion, succession, global climate change, and pollution.

43  
44 The many-stemmed spider-flower could occur in the affected areas of the proposed  
45 Antonito Southeast, Fourmile East, and Los Mogotes East SEZs.

1 **Marble Canyon Rockcress (*Sibara grisea*)**

2  
3 ESA Listing Status: Not Listed

4 BLM Listing Status: Sensitive (New Mexico)

5 State Listing Status: Not Listed

6 Rarity: New Mexico Species of Concern; USFWS Species of Concern

7  
8 The Marble Canyon rockcress (*Sibara grisea*), also known as gray sibara, occurs in  
9 southern New Mexico and western Texas. Within New Mexico, its distribution includes Chaves,  
10 Eddy, and Otero Counties. Habitat includes rock crevices, the bases of limestone cliffs,  
11 limestone or travertine and cliff faces in chaparral, and mesic mountain canyons and pinyon-  
12 juniper woodland communities. Its elevation ranges from 4,500 to 6,000 ft (1,350 to 1,800 m).  
13 This annual forb/herb flowers in May and June (NatureServe 2010; NMRPTC 2010).

14  
15 The Marble Canyon rockcress is listed as sensitive by the BLM New Mexico State Office  
16 and is a New Mexico and USFWS species of concern. Livestock grazing and energy  
17 development do not threaten this species.

18  
19 The Marble Canyon rockcress may occur in the affected area of the proposed Afton SEZ.

20  
21  
22 **Money Wild Buckwheat (*Eriogonum nummulare*)**

23  
24 ESA Listing Status: Not Listed

25 BLM Listing Status: Sensitive (Utah)

26 State Listing Status: Not Listed

27 Rarity: Utah State Rank S1

28  
29 The money wild buckwheat is a large perennial dicot shrub in the Polygonaceae family  
30 that is native to Utah but also occurs in other western states. The plant consists of a mounded  
31 clump of spreading to upright branching stems that are 12 to 31 in. (30 to 80 cm) tall and arise  
32 from a woody base. The stems may be hairy or smooth, and each has a cluster of oval basal  
33 leaves, with a few smaller alternate leaves along the branches. The leaves are densely white-  
34 hairy on the underside and greenish on the upper surface. The money wild buckwheat blooms  
35 from July to October, with clusters of white flowers that are borne at the ends of erect, thin,  
36 branching stems. The fruit is a light brown, three-sided achene enclosed by three bracts  
37 (eFloras.org 2010; NatureServe 2010).

38  
39 The money wild buckwheat occurs in a variety of habitats that include sandy to  
40 occasionally gravelly washes, flats, and slopes; saltbush and sagebrush communities; and  
41 pinyon-juniper woodlands at elevations of 2,625 to 8,530 ft (800 to 2,600 m) (eFloras.org 2010).

42  
43 Major threats are associated with habitat disturbance or destruction, timber harvest,  
44 recreation, fire, grazing, effects of small population size, woody plant encroachment, exotic  
45 species invasion, succession, global climate change, and pollution.

1 The money wild buckwheat could occur in the affected areas of the proposed Escalante  
2 Valley, Milford Flats South, and Wah Wah Valley SEZs.

3  
4  
5 **Munz's Cholla (*Opuntia munzii*)**

6  
7 ESA Listing Status: Not Listed  
8 BLM Listing Status: Sensitive (California)  
9 State Listing Status: Not Listed  
10 Rarity: California State Rank S2; USFWS Species of Concern

11  
12 The Munz's cholla is a large perennial dicot cactus in the Cactaceae family that is native  
13 to California but also occurs in Mexico (Baja California). The plant is a large, erect, spiny cactus  
14 in the form of a shrub or tree that may attain a height of 6.5 to 13 ft (2 to 4 m). One or more  
15 succulent, tree-like trunks produce ascending main branches that are gray-green and bear  
16 terminal tufts of usually drooping, jointed branchlets. These stem segments are easily detached  
17 and can function as vegetative propagules. The entire plant is armed with clusters of stiff spines  
18 arising from wart-like tubercles. Minute detachable bristles (glochids) form tufts at the base of  
19 the spines. The Munz's cholla blooms from March to May, with sparse reddish maroon-brown  
20 flowers on the branches. The fruit is a globose, dry berry that is tan when mature, contains pale  
21 yellow seeds, and is spineless but bears numerous long glochids (eFloras.org 2010; Jepson 2010;  
22 NatureServe 2010).

23  
24 The Munz's cholla grows on gravelly or sandy to rocky soils, often on lower bajadas,  
25 washes, and flats. It also occurs on hills and canyon sides and occurs in Sonoran Desert  
26 creosotebush shrub communities at elevations below 3,280 ft (1,000 m) (California Native Plant  
27 Society 2010; NatureServe 2010).

28  
29 Major threats are associated with habitat disturbance or destruction, recreation, fire,  
30 grazing, effects of small population size, exotic species invasion, succession, global climate  
31 change, and pollution (NatureServe 2010).

32  
33 The Munz's cholla could occur in the affected areas of the proposed Imperial East and  
34 Riverside East SEZs.

35  
36  
37 **Needle Mountains Milkvetch (*Astragalus eurylobus*)**

38  
39 ESA Listing Status: Not Listed  
40 BLM Listing Status: Sensitive (Nevada)  
41 State Listing Status: Not Listed  
42 Rarity: Nevada State Rank S2; USFWS Species of Concern

43  
44 The Needle Mountains milkvetch is a small, herbaceous perennial dicot in the Fabaceae  
45 (bean) family that is native to Nevada and also occurs in Arizona and Utah. In Nevada, the plant  
46 is known from only six sites in Lincoln and Nye Counties. The plant consists of a taproot with a

1 woody crown that gives rise to several prostrate or trailing stems that are woody below, and up to  
2 24 in. (61 cm) long. All of the herbage is covered with hair, making the plant appear silvery. The  
3 stems bear alternate, pinnately compound leaves. The leaflets are oval-pointed and opposite. The  
4 Needle Mountains milkvetch blooms during April to July, with clusters of pink-purple, pea-like  
5 flowers on stalks arising from the leaf bases. The fruits are oblong legume pods that are strongly  
6 curved with pointed tips and are attached to the plant by short stalks. The wrinkled pods, which  
7 may be hairy, lie on the ground and eventually become woody. The pods contain numerous  
8 smooth, heart-shaped seeds that are olive, brown, or black (NatureServe 2010; NNHP 2010).

9  
10 The Needle Mountains milkvetch grows on gravel washes and sandy soils in alkaline  
11 desert and arid grasslands at elevations between 4,250 and 6,250 ft (1,292 and 1,900 m)  
12 (NatureServe 2010; NNHP 2010).

13  
14 Major threats are associated with habitat disturbance or destruction, recreation, fire,  
15 grazing, effects of small population size, woody plant encroachment, exotic species invasion,  
16 succession, global climate change, and pollution.

17  
18 The Needle Mountains milkvetch may occur in the affected areas of the proposed Dry  
19 Lake Valley North and Escalante Valley SEZs.

## 20 21 22 **Nevada Dune Beardtongue (*Penstemon arenarius*)**

23  
24 ESA Listing Status: Not Listed

25 BLM Listing Status: Sensitive (Nevada)

26 State Listing Status: Not Listed

27 Rarity: Nevada State Rank S2; USFWS Species of Concern

28  
29 The Nevada dune beardtongue is an herbaceous perennial dicot in the Scrophulariaceae  
30 family that is native and endemic to Nevada, where it is known only from Churchill, Mineral,  
31 and Nye Counties but is not abundant at any site. The plant consists of several stout, smooth,  
32 erect stems that are 4 to 12 in. (10 to 30 cm) tall, arising from a buried root crown. The stems  
33 bear widely spaced, leathery, opposite leaves that are oval-pointed and have coarse, sharp-  
34 pointed teeth. The leaves are usually folded lengthwise or curved inward along the midvein. The  
35 Nevada dune beardtongue blooms from May to July, with clusters of funnel-shaped flowers that  
36 arise from the bases of leaves or bracts at stem nodes. The flowers are in shades of white to  
37 purple and may be striped with magenta. The bottom petal of each flower has a small tuft of  
38 yellowish hair in its center. The fruit is an oval capsule that contains numerous irregularly angled  
39 seeds (NatureServe 2010; NNHP 2010).

40  
41 The Nevada dune beardtongue is dependent on sand dunes or deep sand occurring on  
42 deep, loose, sandy soils of valley bottoms, aeolian deposits, and dune skirts, often in alkaline  
43 areas, sometimes on road banks and other recovering disturbances crossing such soils, in  
44 shadscale communities at elevations of 3,920 to 5,960 ft (1,195 to 1,817 m) (NatureServe 2010;  
45 NNHP 2010).

1 Populations of Nevada dune beardtongue are declining at the sites where they grow in  
2 Nevada. Because the plant is endemic to Nevada, conservation of this species is needed to ensure  
3 that it remains a part Nevada's flora.

4  
5 Major threats are associated with habitat disturbance or destruction, recreation, fire,  
6 grazing, effects of small population size, exotic species invasion, succession, global climate  
7 change, and pollution (NNHP 2010).

8  
9 The Nevada dune beardtongue may occur in the affected area of the proposed Millers  
10 SEZ.

11  
12  
13 **Nevada Willowherb (*Epilobium nevadense*)**

14  
15 ESA Listing Status: Not Listed

16 BLM Listing Status: Sensitive (Nevada and Utah)

17 State Listing Status: Not Listed

18 Rarity: Nevada State Rank S2; Utah State Rank S1; USFWS Species of Concern

19  
20 The Nevada willowherb is a somewhat shrubby, perennial herb that occurs in Colorado,  
21 Nevada, and Utah. The plant consists of several upright, persistent, woody branches that are 6 to  
22 16 in. (15 to 40 cm) tall, arising from a stout taproot. Lance-shaped leaves that may be hairy or  
23 nearly smooth are crowded along the hairy branches. The Nevada willowherb blooms from June  
24 to September, with flower stalks that arise from leaf bases near the ends of the branches with  
25 clusters of rose-purple flowers. The fruit is an elongated hairy and/or glandular capsule on a  
26 short stalk that contains numerous dark brown seeds with a tuft of white hairs (pappus) at one  
27 end (NatureServe 2010; NNHP 2010; Utah Native Plant Society 2010).

28  
29 The Nevada willowherb grows in pinyon-juniper woodlands and oak/mountain  
30 mahogany communities, on talus slopes and rocky limestone outcrops at elevations between  
31 5,000 and 8,800 ft (1,500 and 2,680 m) (Utah Native Plant Society 2010).

32  
33 Major threats are associated with habitat disturbance or destruction, timber harvest,  
34 recreation, fire, grazing, effects of small population size, woody plant encroachment, exotic  
35 species invasion, succession, global climate change, and pollution.

36  
37 The Nevada willowherb could occur in the affected areas of the proposed Dry Lake  
38 Valley North and Escalante Valley SEZs.

39  
40  
41 **New Mexico Rock Daisy (*Perityle staurophylla* var. *staurophylla*)**

42  
43 ESA Listing Status: Not Listed

44 BLM Listing Status: Sensitive (New Mexico)

45 State Listing Status: Not Listed

46 Rarity: New Mexico Species of Concern; USFWS Species of Concern

1 The New Mexico rock daisy (*Perityle staurophylla* var. *staurophylla*) is endemic to  
2 south-central New Mexico in Doña Ana, Otero, and Sierra Counties and the Sacramento,  
3 San Andres, and Caballo Mountains. It occurs in crevices of dry limestone cliffs and boulders on  
4 protected north and east faces at elevations between 4,900 and 7,000 ft (1,500 and 2,100 m)  
5 (NMRPTC 2010).  
6

7 The New Mexico rock daisy is classified as a perennial subshrub or forb/herb. It flowers  
8 from June to September (NMRPTC 2010). Although the species is locally common in its limited  
9 cliffside habitat that protects it from human impacts, it is listed as sensitive by the BLM  
10 New Mexico State Office and is a USFWS and New Mexico species of concern.  
11

12 The New Mexico rock daisy may occur in the affected area of the proposed Afton SEZ.  
13  
14

### 15 **Orocopia Sage (*Salvia greatae*)**

16  
17 ESA Listing Status: Not Listed  
18 BLM Listing Status: Sensitive (California)  
19 State Listing Status: Not Listed  
20 Rarity: California State Rank S2  
21

22 The Orocopia sage is a large shrubby perennial dicot in the Lamiaceae (mint) family that  
23 is native and endemic to California. The plant is extensively branched from near ground level,  
24 resulting in a very dense, bushy habit. The evergreen, mound-like plants can be up to 4 ft (1.2 m)  
25 tall. The stems are covered with glandular hairs and bear widely separated, nondeciduous,  
26 opposite, hairy leaves. The thick, leathery leaves are oval in outline and have several long,  
27 pointed teeth with a spine at the end of each tooth. The Orocopia sage blooms from March to  
28 April, with clusters of lavender flowers arising from the bases of the paired leaves toward the  
29 ends of the branches. Each flower is subtended by a woolly, spiny base (the calyx). The fruit is a  
30 flat, keeled, gray to brown nutlet. The nutlets develop in groups of four at the base of each flower  
31 (Jepson 2010; NatureServe 2010).  
32

33 The Orocopia sage is endemic to the Sonoran Desert of southern California. Its habitats  
34 include the Orocopia Mountains in Riverside County to the Chocolate Mountains in Imperial  
35 County. It grows in creosotebush scrub communities and dry washes at elevations lower than  
36 2,600 ft (800 m) (Jepson 2010; NatureServe 2010).  
37

38 Major threats are associated with habitat disturbance or destruction, recreation, fire,  
39 grazing, effects of small population size, exotic species invasion, succession, global climate  
40 change, and pollution (NatureServe 2010).  
41

42 The Orocopia sage could occur in the affected area of the proposed Riverside East SEZ.  
43  
44  
45

1 **Parish's Phacelia (*Phacelia parishii*)**

2  
3 ESA Listing Status: Not Listed

4 BLM Listing Status: Sensitive

5 State Listing Status: Not Listed

6 Rarity: California State Rank S1; Nevada State Rank S2; USFWS Species of Concern

7  
8 The Parish's phacelia is an herbaceous annual dicot in the Boraginaceae family that is  
9 native and rare in California but also occurs and is rare in Nevada and Arizona. The plant  
10 consists of several erect to ascending stems, branched from the base, that are 2 to 6 in. (5 to  
11 15 cm) tall. All of the herbage is covered with soft, short, glandular hairs. The leaves are  
12 alternate and mostly basal. These leaves are oval and fleshy with wavy, rounded teeth. Stem  
13 leaves are few and similar to the basal leaves. The Parish's phacelia blooms from April to July,  
14 with coiled, spike-like, fuzzy clusters of crowded flowers at the ends of the stems. The flowers  
15 are trumpet-shaped with lavender recurved petals and yellowish throats emerging from hairy  
16 bases (the calyx). The fruit is a hairy, oblong capsule containing numerous dark-colored, finely  
17 pitted oval seeds (Jepson 2010; NatureServe 2010)

18  
19 The Parish's phacelia is rare in all of the locations where it has been found. The plant  
20 grows in Mojave desertscrub communities, dry lake margins, gypsum beds, and playas on  
21 alkaline-clay soils at elevations between 1,800 and 3,900 ft (550 and 1,200 m) (California Native  
22 Plant Society 2010; Jepson 2010; NatureServe 2010).

23  
24 Major threats are associated with habitat disturbance or destruction, timber harvest,  
25 recreation, fire, grazing, effects of small population size, woody plant encroachment, exotic  
26 species invasion, succession, global climate change, and pollution (NatureServe 2010).

27  
28 The Parish's phacelia could occur in the affected area of the proposed Dry Lake SEZ.

29  
30  
31 **Pioche Blazingstar (*Mentzelia argillicola*)**

32  
33 ESA Listing Status: Not Listed

34 BLM Listing Status: Sensitive (Nevada)

35 State Listing Status: Not Listed

36 Rarity: Nevada State Rank S1

37  
38 The Pioche blazingstar is a perennial herbaceous dicot in the Loasaceae family that is  
39 native and endemic to Nevada. The plant consists of a branching, erect to spreading stem with a  
40 semiwoody base that is up to 10 in. (25 cm) tall. All of the herbage is bristly-hairy. The stem  
41 bears widely separated, alternate, spatula-shaped to long-ovate leaves that are wavy-edged and  
42 have shallow, rounded, irregular teeth. The Pioche blazingstar blooms during the spring with  
43 yellow flowers on short stalks that arise from leaf bases near the ends of the stems. The fruit is an  
44 erect, cylindrical, hairy capsule, tapered to the base, on a short stalk. The capsule has several  
45 pointed bracts on its top and contains several oval seeds that are flat at one end (NNHP 2010;  
46 NatureServe 2010).

1 The Pioche blazingstar grows on dry, soft, silty, clay soils on knolls and slopes with  
2 sparse vegetation consisting mainly of pygmy sagebrush (*Artemisia pygmaea*), money wild  
3 buckwheat, broom snakeweed, and gray ball sage (*Salvia dorrii* var. *dorrii*).  
4

5 Major threats are associated with habitat disturbance or destruction, recreation, fire,  
6 grazing, effects of small population size, exotic species invasion, succession, global climate  
7 change, and pollution.  
8

9 The Pioche blazingstar may occur in the affected area of the proposed Dry Lake Valley  
10 North SEZ.  
11  
12

### 13 **Ripley's Milkvetch (*Astragalus ripleyi*)**

14  
15 ESA Listing Status: Not Listed  
16 BLM Listing Status: Sensitive (Colorado)  
17 State Listing Status: Not Listed  
18 Rarity: Colorado State Rank S2  
19

20 The Ripley's milkvetch is a tall, robust herbaceous perennial dicot in the Fabaceae (bean)  
21 family that is native to Colorado but also occurs in New Mexico. The plant arises from a woody  
22 crown with rhizomes; is 16 to 36 in. (40 to 100 cm) tall, and has erect, branching stems that are  
23 covered with long hairs appressed to the stems. The stems bear alternate, pinnately compound  
24 leaves that are hairy on one or both surfaces. Large clusters of pea-like flowers are produced  
25 from June to July on stalks arising from the leaf bases. The large flowers are pale lemon yellow  
26 and hang down from the nodding flower stalks. The fruits are oblong, pointed legumes (pods)  
27 that may be hairy or smooth, remain attached to the plant by long stalks, and contain numerous  
28 smooth seeds that are olive, brown, or black (NatureServe 2010).  
29

30 The Ripley's milkvetch grows in mixed conifer and shrubland habitats on rocky  
31 substrates at elevations above 8,000 ft (2,400 m). The plant occurs exclusively on volcanic-  
32 derived soils associated with the San Juan volcanic field (CNHP 2010; NatureServe 2010).  
33

34 The Ripley's milkvetch is a regional endemic that is restricted to soils derived from  
35 volcanic formations. Given its limited range, populations are currently vulnerable to habitat  
36 alteration resulting from a variety of potential impacts.  
37

38 Major threats are associated with habitat disturbance or destruction, timber harvest,  
39 recreation, fire, grazing, effects of small population size, woody plant encroachment, exotic  
40 species invasion, succession, global climate change, and pollution (NatureServe 2010).  
41

42 The Ripley's milkvetch could occur in the affected areas of the proposed Antonito  
43 Southeast, Fourmile East, and Los Mogotes East SEZs.  
44  
45  
46

1 **Rock Phacelia (*Phacelia petrosa*)**

2  
3 ESA Listing Status: Not Listed  
4 BLM Listing Status: Sensitive (Nevada)  
5 State Listing Status: Not Listed  
6 Rarity: Nevada State Rank S2  
7

8 The rock phacelia is an herbaceous annual dicot in the Boraginaceae family that is native  
9 to Nevada but also occurs in Arizona and Utah. The plant consists of several erect to ascending  
10 stems, branched from the base, that are 4 to 12 in. (10 to 31 cm) tall. The stems bear leaves that  
11 are alternate and mostly basal. The basal leaves are oval with wavy, rounded teeth. Stem leaves  
12 are widely separated, similar to the basal leaves, and become smaller toward the ends of the  
13 stems. The leaves are densely covered with spreading, shiny hairs. The rock phacelia blooms in  
14 the spring, with coiled, spike-like, fuzzy clusters of crowded flowers at the ends of the stems.  
15 The flowers are bell-shaped with blue petals that become lighter toward their bases. The fruit is a  
16 hairy, globose capsule containing four light brown, oblong seeds that have corrugated surfaces  
17 (NatureServe 2010; NNHP 2010).  
18

19 The rock phacelia grows on dry limestone and volcanic talus slopes of foothills, washes,  
20 and gravelly canyon bottoms on substrates derived from calcareous material. It inhabits mixed  
21 desertscrub and creosotebush and blackbrush communities at elevations between 2,500 and  
22 5,800 ft (760 and 1,763 m) (NatureServe 2010; NNHP 2010).  
23

24 Major threats are associated with habitat disturbance or destruction, recreation, fire,  
25 grazing, effects of small population size, woody plant encroachment, exotic species invasion,  
26 succession, global climate change, and pollution.  
27

28 The rock phacelia could occur in the affected area of the proposed Dry Lake SEZ.  
29  
30

31 **Rock Purpusia (*Ivesia arizonica* var. *saxosa*)**

32  
33 ESA Listing Status: Not Listed  
34 BLM Listing Status: Sensitive (Nevada)  
35 State Listing Status: Not Listed  
36 Rarity: Nevada State Rank S1  
37

38 The rock purpusia (*Ivesia arizonica* var. *saxosa*) is an herbaceous perennial dicot in the  
39 Rosaceae (rose) family that is native and endemic to Nevada. The variety is known from only  
40 five occurrences in Lincoln and Nye Counties. The plant consists of a small tufted or hanging  
41 clump that often grows in crevices in rocks, boulders or cliff walls. All of the herbage may be  
42 glandular-hairy and fragrant. The spreading stems are 2 to 4 in. (5 to 10 cm.) long. The stems are  
43 subtended by a rosette of pinnately compound basal leaves that have opposite, overlapping  
44 leaflets that are round or fan shaped in outline and are coarsely toothed. Old leaf bases often  
45 sheath the simple or branched root crown. The stems may bear a few leaves similar to the basal  
46 leaves, but smaller. The rock purpusia blooms May through August with small, sparse, white

1 flowers borne near the ends of the stems. The fruit is a smooth, ridged, light brown achene  
2 (Jepson 2010; NatureServe 2010; NNHP 2010).

3  
4 The rock purpusia grows in crevices of cliffs and boulders on volcanic substrates in the  
5 upper mixed-shrub, sagebrush, and pinyon-juniper communities at elevations between 4,900 and  
6 6,900 ft (1,490 and 2,098 m) (NNHP 2010).

7  
8 Major threats are associated with habitat disturbance or destruction, mining, recreation,  
9 fire, grazing, effects of small population size, woody plant encroachment, exotic species  
10 invasion, succession, global climate change, and pollution (NNHP 2010)

11  
12 The rock purpusia could occur in the affected areas of the proposed Amargosa Valley and  
13 Dry Lake Valley North SEZs.

14  
15  
16 **Rock-Loving Aletes (*Neoparrya lithophila*)**

17  
18 ESA Listing Status: Not Listed  
19 BLM Listing Status: Sensitive (Colorado)  
20 State Listing Status: Not Listed  
21 Rarity: Colorado State Rank S2

22  
23 The rock-loving aletes is an herbaceous perennial dicot in the Apiaceae (parsley) family  
24 that is endemic to south-central Colorado. The plants grow in clumps from taproots, with upright  
25 stems that are 3 to 11 in. (8 to 29 cm) tall. The stems have alternate pinnately compound leaves  
26 that are thick, glossy, and leathery. The rock-loving aletes blooms from May to early July, with  
27 clusters of pale yellow flowers at the ends of the stems. The fruit consists of two seed-like  
28 carpels (a mericarp) that adhere to each other and then separate when ripe (NatureServe 2010).

29  
30 The habitat of the rock-loving aletes includes igneous outcrops or sedimentary rock  
31 derived from extrusive volcanics and north-facing cliffs and ledges within pinyon-juniper  
32 woodlands at elevations of 7,000 to 10,000 ft (2,100 to 3,048 m) (CNHP 2010;  
33 NatureServe 2010).

34  
35 The rock-loving aletes is known only from Chaffee, Conejos, Fremont, Huerfano,  
36 Rio Grande, and Saguache Counties in south-central Colorado. The rock-loving aletes is afforded  
37 some protection by the remote, relatively inaccessible location of its habitat.

38  
39 Major threats are associated with habitat disturbance or destruction, recreation, effects of  
40 small population size, global climate change, and pollution (CNHP 2010; NatureServe 2010).

41  
42 The rock-loving aletes could occur in the affected areas of the proposed Antonito  
43 Southeast, Fourmile East, and Los Mogotes East SEZs.

1 **Rosy Two-Tone Beardtongue (*Penstemon bicolor* ssp. *roseus*)**

2  
3 ESA Listing Status: Not Listed  
4 BLM Listing Status: Sensitive (Nevada)  
5 State Listing Status: Not Listed  
6 Rarity: USFWS Species of Concern  
7

8 The rosy two-tone beardtongue is a large herbaceous perennial dicot in the  
9 Plantaginaceae family that is native to Nevada and also occurs in California and Arizona. The  
10 plant consists of numerous erect to spreading stout, smooth stems that are up to 60 in. (120 cm)  
11 tall. The stems bear widely separated, thick, leathery, opposite leaves that have strongly toothed  
12 margins; the teeth are often somewhat spiny. The bases of the paired leaves are united around the  
13 stem. The rosy two-tone beardtongue blooms from March to May, with wide-mouthed tubular  
14 flowers in shades of cream to magenta in clusters that arise from the bases of leaves or bracts at  
15 stem nodes near the ends of the stems. The bottom petal of each flower may have several  
16 magenta veins and has a tuft of yellowish hair in its center. The entire inflorescence, including  
17 the outside of the flower petals, is glandular-hairy. The fruit is an oval capsule that contains  
18 numerous irregularly angled seeds (Jepson 2010; NatureServe 2010; NNHP 2010).  
19

20 The rosy two-tone beardtongue grows on calcareous, granitic, or volcanic soils in washes,  
21 roadsides, scree at outcrop bases, rock crevices, or similar places receiving enhanced runoff,  
22 within creosotebush-bursage, blackbrush, and mixed-shrub communities. Elevation ranges  
23 between 1,800 and 4,850 ft (549 and 1,475 m) (NNHP 2010).  
24

25 Populations of the rosy two-tone beardtongue are declining at the sites where it grows in  
26 Nevada. Major threats are associated with habitat disturbance or destruction, recreation, fire,  
27 grazing, effects of small population size, exotic species invasion, succession, global climate  
28 change, and pollution (NNHP 2010).  
29

30 The rosy two-tone beardtongue could occur in the affected area of the proposed Dry Lake  
31 SEZ.  
32

33  
34 **Rough Dwarf Greasebush (*Glossopetalon pungens* var. *pungens*)**

35  
36 ESA Listing Status: Not Listed  
37 BLM Listing Status: Sensitive (Nevada)  
38 State Listing Status: Not Listed  
39 Rarity: Nevada State Rank S2  
40

41 The rough dwarf greasebush is a perennial dicot shrub in the Crossosomataceae family  
42 that is native and endemic to Nevada. The plant is restricted to the Spring and Sheep Ranges in  
43 southern Nevada, where it is known from seven occurrences in Clark and Nye Counties. The  
44 plant is a low, matted, deciduous shrub that is densely branched from near ground level and is  
45 2 to 8 in. (5 to 20 cm) tall. The stems are greenish, smooth to sparsely hairy and angled. The  
46 stems bear crowded alternate leaves that are narrowly elliptical, hairy, and sharply spine-tipped.

1 The leaf margins and veins are thickened and prominent on the underside. The rough dwarf  
2 greasewood blooms from May to June, with small white flowers on short terminal branchlets. The  
3 fruit is an oval, beaked, leathery capsule that splits open on one side and usually contains one  
4 light brown seed (Jepson 2010; NatureServe 2010; NNHP 2010).

5  
6 The rough dwarf greasewood grows in crevices of carbonate cliffs and outcrops, generally  
7 avoiding southerly exposures, within pinyon-juniper, mountain mahogany, and montane conifer  
8 communities. Elevation ranges between 4,400 and 7,800 ft (1,338 and 2,371 m)  
9 (NatureServe 2010; NNHP 2010).

10  
11 Populations of the rough dwarf greasewood are decreasing on the few sites where they  
12 grow in Nevada.

13  
14 Major threats are associated with habitat disturbance or destruction, recreation, fire,  
15 grazing, effects of small population size, exotic species invasion, succession, global climate  
16 change, and pollution (NNHP 2010).

17  
18 The rough dwarf greasewood could occur in the affected area of the proposed Dry Lake  
19 SEZ.

## 20 21 22 **Sand Food (*Pholisma sonora*)**

23  
24 ESA Listing Status: Not Listed

25 BLM Listing Status: Sensitive (California)

26 State Listing Status: Arizona Highly Safeguarded (HS)

27 Rarity: California State Rank S2; Arizona State Rank S1; USFWS Species of Concern

28  
29 The sand food is an herbaceous perennial root parasite that lacks chlorophyll and the  
30 ability to make its own food, as green plants can. It is a rare and unusual dicot in the Lennoaceae  
31 family that is native to California and Arizona. The plant grows in sand dunes and consists of a  
32 long, scaly, fleshy stem that extends below the surface to attach to the roots of a nearby desert  
33 shrub and draw nourishment from that host plant. The underground stem can be up to 6.5 ft (2 m)  
34 long; is grayish, whitish, or brown in color; and has alternate, glandular, scale-like leaves along  
35 its surface. The sand food blooms from April to June, with a saucer-shaped, fuzzy inflorescence  
36 at, or slightly above, the sand surface that is up to 4 in. (10 cm) in diameter. The inflorescence  
37 consists of tightly packed flower buds with hairy bases (the calyx) that are the color of sand. The  
38 flower buds open in concentric circles successively from the outer edge of the head to the center.  
39 The flowers are star-shaped with purple petals that have white edges. The fruit is a small, dry  
40 capsule containing numerous flattened nutlets (AZGFD 2010; California Native Plant  
41 Society 2010; Jepson 2010; NatureServe 2010).

42  
43 The sand food grows in loose, sand dune habitats in creosotebush scrub in the Sonoran  
44 Desert at elevations below 650 ft (200 m) (AZGFD 2010; California Native Plant Society 2010;  
45 NatureServe 2010).

1 Major threats are associated with habitat disturbance or destruction, recreation, fire,  
2 grazing, effects of small population size, exotic species invasion, succession, global climate  
3 change, and pollution.

4  
5 The sand food could occur in the affected area of the proposed Imperial East SEZ.  
6  
7

#### 8 **Sand Prickly-Pear Cactus (*Opuntia arenaria*)**

9  
10 ESA Listing Status: Not Listed  
11 BLM Listing Status: Not Listed  
12 State Listing Status: Endangered in New Mexico  
13 Rarity: New Mexico State Rank S2; USFWS Species of Concern  
14

15 The sand prickly-pear cactus (*Opuntia arenaria*) occurs in the Rio Grande River and  
16 adjacent valleys in southern New Mexico, western Texas, and northern Mexico. Within  
17 New Mexico, populations exist in southern Doña Ana, Luna, and Socorro Counties. It inhabits  
18 sandy, rocky, and silty areas, including semistabilized sand dunes among open Chihuahuan  
19 desertscrub, at elevations ranging from 3,800 to 4,300 ft (1,160 to 1,300 m). The species is often  
20 associated with honey mesquite and a sparse cover of grasses (NatureServe 2010;  
21 NMRPTC 2010).  
22

23 The sand prickly-pear cactus flowers in May to June. Flowers are yellow and may  
24 contain pink or red tints. Green fruits change to tan when ripe, and the dry fruit stays on the plant  
25 throughout the summer. The species has fewer chromosomes and higher morphological stability  
26 than other dry-fruited species of *Opuntia* (NMRPTC 2010).  
27

28 Much of the cactus's former habitat has been destroyed by urbanization and agricultural  
29 development in the Rio Grande Valley. Cactus collectors and road widening also pose a threat to  
30 populations. Currently, only seven populations are known in New Mexico (NatureServe 2010;  
31 NMRPTC 2010).  
32

33 The sand prickly-pear cactus may occur in the affected area of the proposed Afton SEZ.  
34  
35

#### 36 **Sandhill Goosefoot (*Chenopodium cycloides*)**

37  
38 ESA Listing Status: Not Listed  
39 BLM Listing Status: Sensitive (New Mexico)  
40 State Listing Status: Not Listed  
41 Rarity: New Mexico State Rank S2  
42

43 The sandhill goosefoot (*Chenopodium cycloides*) occurs in south-central New Mexico,  
44 southern Colorado, Nebraska, Kansas, Oklahoma, and western Texas. It inhabits open, sandy  
45 areas with sparse vegetation, especially along the edges of blowouts on sand dunes, sand sage  
46 communities, *Quercus havardii* communities, and short-grass prairie communities. Its elevation

1 ranges from 2,600 to 4,900 ft (800 to 1,500 m). It occurs on gentle slopes, with inclines ranging  
2 from 0 to 5%, although it may occur on steeper slopes in dune environments. Its distribution is  
3 patchy and clumped, and its abundance varies temporally. It is difficult to measure population  
4 trends because few sites have been visited more than once (NatureServe 2010; NMRPTC 2010).

5  
6 The sandhill goosefoot flowers in late June to August and fruits from early summer to  
7 fall. Its fruit is red, ovoid, and minutely tuberculate. The plant may be self- or cross-pollinated,  
8 with its pollen dispersed by wind. Seed production varies substantially from year to year  
9 depending on factors such as disease, temperature, precipitation, and the herbivory of the  
10 flowers. It likely has persistent, large seed banks that exhibit some form of dormancy.  
11 Hybridization has not been observed (eFloras.org 2010; NatureServe 2010; NMRPTC 2010).

12  
13 Eleven occurrences of the sandhill goosefoot have been recorded in New Mexico since  
14 1913.

15  
16 Threats include urbanization; mineral, oil and gas development; agriculture; range  
17 conversion; overgrazing by livestock; and invasive species.

18  
19 The sandhill goosefoot may occur in the affected area of the proposed Afton SEZ.

20  
21  
22 **Sanicle Biscuitroot (*Cymopterus ripleyi* var. *saniculoides*)**

23  
24 ESA Listing Status: Not Listed

25 BLM Listing Status: Sensitive (Nevada)

26 State Listing Status: Not Listed

27 Rarity: USFWS Species of Concern

28  
29 The sanicle biscuitroot is an herbaceous perennial dicot in the Apiaceae (carrot) family  
30 that is native to Nevada, and also occurs in California. The plant is restricted to western Nevada  
31 and southeastern California and is rare in both states. The small, stemless, mound-forming plant  
32 consists of a deep taproot with a buried root crown that gives rise directly to a rosette of basal  
33 leaves with long stalks and an erect flowering stalk, which together are 4 to 6 in. (10 to 15 cm)  
34 tall. The glossy, hairless leaves are round in outline and deeply divided into three wedge-shaped  
35 lobes, each of which is further lobed. The Sanicle biscuitroot blooms from April to June, with a  
36 spherical inflorescence at the end of the long, smooth flower stalk (scape) that rises above the  
37 basal leaves. The ball-like inflorescence is composed of numerous tiny purple or off-white  
38 flowers. The fruits are two wedge-shaped, flattened, appressed seeds that are hairy, have ridges,  
39 and have wings on the edges (Jepson 2010; NatureServe 2010; NNHP 2010).

40  
41 The sanicle biscuitroot grows on loose, sandy to gravelly, often somewhat alkaline soils  
42 on volcanic tuff deposits and mixed valley alluvium within blackbrush, mixed-shrub, sagebrush,  
43 and lower pinyon-juniper communities. Elevation ranges between 3,150 and 6,700 ft (960 and  
44 2,048 m) (NNHP 2010).

1 Populations of sanicle biscuitroot are declining at the sites where they grow in Nevada  
2 and California.

3  
4 Major threats are associated with habitat disturbance or destruction, recreation, fire,  
5 grazing, effects of small population size, exotic species invasion, succession, global climate  
6 change, and pollution (NNHP 2010).

7  
8 The sanicle biscuitroot could occur in the affected area of the proposed Millers SEZ.  
9

### 10 **Sheep Fleabane (*Erigeron ovinus*)**

11  
12  
13 ESA Listing Status: Not Listed

14 BLM Listing Status: Sensitive (Nevada)

15 State Listing Status: Not Listed

16 Rarity: Nevada State Rank S2; USFWS Species of Concern  
17

18 The sheep fleabane is an herbaceous perennial dicot in the Asteraceae (sunflower) family  
19 that is native and endemic to Nevada. The plant is restricted to the Mount Irish, Sheep, and  
20 Groom Ranges in southern Nevada, where the species is known from fewer than 15 occurrences  
21 in Clark and Lincoln Counties. The plant consists of a taproot with a crown divided into short,  
22 thick branches, each of which gives rise to a cluster of spatula-shaped, hairy basal leaves and  
23 several erect to ascending hairy stems that are 2 to 6 in. (5 to 15 cm) tall. The widely spaced,  
24 alternate stem leaves are similar to the basal leaves and become smaller toward the ends of the  
25 stems. The sheep fleabane blooms from June to August, with white to pinkish composite flower  
26 heads at the ends of the stems. The fruit is a flattened, oblong achene with a tuft of bristles  
27 (a pappus) at one end (eFloras.org, 2010; NatureServe 2010; NNHP 2010).  
28

29 The sheep fleabane grows in crevices of carbonate cliffs and ridgeline outcrops within  
30 pinyon-juniper and montane conifer communities. Elevation ranges between 3,600 and 8,400 ft  
31 (1,094 and 2,554 m) (NNHP 2010).  
32

33 Populations of sheep fleabane are declining at the sites where it grows in Nevada.  
34

35 Major threats are associated with habitat disturbance or destruction, recreation, fire,  
36 grazing, effects of small population size, exotic species invasion, succession, global climate  
37 change, and pollution (NNHP 2010).  
38

39 The sheep fleabane may occur in the affected area of the proposed Dry Lake SEZ.  
40  
41

### 42 **Sheep Mountain Milkvetch (*Astragalus amphioxys* var. *musimonum*)**

43  
44 ESA Listing Status: Not Listed

45 BLM Listing Status: Sensitive  
46

1 State Listing Status: Not Listed  
2 Rarity: Nevada State Rank S2; USFWS Species of Concern  
3

4 The Sheep Mountain milkvetch is a small, herbaceous, short-lived perennial dicot in the  
5 Fabaceae (bean) family that is native to the foothills of the Sheep Mountains in Clark and  
6 Lincoln Counties in southern Nevada. The plant historically occurred in Arizona. The low, tufted  
7 plant consists of several prostrate or trailing stems that are 0.8 to 2.8 in. (2 to 7 cm) long. All of  
8 the herbage is covered with dense silvery hair. The stems bear alternate, pinnately compound  
9 leaves with leaflets that are oval-pointed and opposite. The Sheep Mountain milkvetch blooms  
10 during April to June, with clusters of bright pink-purple pea-like flowers on stalks arising from  
11 the leaf bases and rising above the prostrate stems. The large top petal of each flower has a white  
12 center that is streaked with purple veins. The fruits are oblong legume pods that are strongly  
13 curved with pointed tips, are covered with fine hairs, and are attached to the plant by short stalks.  
14 The pods are initially ascending, but usually lie on the ground as they enlarge and mature. The  
15 pods contain numerous smooth seeds (NatureServe 2010; NNHP 2010).  
16

17 The Sheep Mountain milkvetch grows on carbonate alluvial gravels, particularly along  
18 drainages, roadsides, and in other microsites with enhanced run-off, at elevations between  
19 4,400 and 6,000 ft (1,338 and 1,824 m) (NNHP 2010).  
20

21 Populations of Sheep Mountain milkvetch are declining at the sites where it grows in  
22 Nevada.  
23

24 Major threats are associated with habitat disturbance or destruction, recreation, fire,  
25 grazing, effects of small population size, exotic species invasion, succession, global climate  
26 change, and pollution (NNHP 2010).  
27

28 The Sheep Mountain milkvetch may occur in the affected area of the proposed Dry Lake  
29 SEZ.  
30  
31

### 32 **Silverleaf Sunray (*Enceliopsis argophylla*)** 33

34 ESA Listing Status: Not Listed  
35 BLM Listing Status: Sensitive (Nevada)  
36 State Listing Status: Not Listed  
37 Rarity: Nevada State Rank S1  
38

39 The silverleaf sunray is an herbaceous, long-lived perennial dicot in the Asteraceae  
40 (sunflower) family that is native to Nevada, and nearly entirely confined to Clark County where  
41 three populations have been found. The species is also known to occur at a few locations in  
42 Arizona and Utah. The plant consists of a stout, branched, woody root crown that gives rise to a  
43 dense cushion-shaped clump of basal leaves with numerous leafless flowering stems (scapes)  
44 rising above the basal leaves. The plant is 6 to 31 in. (15 to 80 cm) tall, and all of the herbage is  
45 silvery-hairy. The basal leaves are closely alternate and diamond-shaped or widely elliptical.  
46 Silverleaf sunray blooms from April to June, with large yellow composite flower heads that are

1 borne at the ends of the long, flowering stems. The fruit is a hairy, wedge-shaped achene that is  
2 flattened and has two bristles (the pappus) at the wide end (AZGFD 2010; eFloras.org 2010;  
3 Jepson 2010, NatureServe 2010; NNHP 2010).

4  
5 The silverleaf sunray grows in dry, open, relatively barren areas on gypsum badlands,  
6 volcanic gravels, or loose sands, within the creosotebush-bursage community. Elevation ranges  
7 between 1,200 and 2,400 ft (365 and 730 m) (NatureServe 2010; NNHP 2010).

8  
9 Major threats are associated with habitat disturbance or destruction, recreation, effects of  
10 small population size, woody plant encroachment, exotic species invasion, succession, global  
11 climate change, and pollution (NNHP 2010).

12  
13 The silverleaf sunray may occur in the affected area of the proposed Dry Lake SEZ.

14  
15  
16 **Sneed's Pincushion Cactus (*Escobaria sneedii* var. *sneedii*)**

17  
18 ESA Listing Status: Endangered

19 BLM Listing Status: Not Listed

20 State Listing Status: Endangered in New Mexico

21 Rarity: New Mexico State Rank S2

22  
23 The Sneed pincushion cactus is restricted to limestone substrates on terraces, ridgetops,  
24 hillsides, and ledges in the high Chihuahuan Desert of the Franklin, Guadalupe, and Organ  
25 Mountains of Texas and New Mexico. Plants occur primarily in cracks in the limestone substrate  
26 or in shallow pockets of loamy soil on hillsides and ridgetops between 3,900 and 7,700 ft  
27 (1,190 and 2,345 m) in elevation. The subspecies typically occurs in semidesert grasslands or  
28 woodlands in an agave-juniper association. In the Guadalupe Mountains, it extends upward in  
29 elevation to the lower pinyon-juniper woodland. Like the Lee pincushion cactus, it usually  
30 occurs in sparsely vegetated areas with shrubby species, but it is rarely under cover. Associated  
31 plant species include lechuguilla (*Agave lechuguilla*), sideoats grama (*Bouteloua curtipendula*),  
32 whitecolumn foxtail cactus (*Escobaria albicolumnaria*), common sotol (*Dasyllirion wheeleri*),  
33 longleaf joint fir (*Ephedra trifurca*), Apache plume (*Fallugia paradoxa*), Pinchot's juniper  
34 (*Juniperus pinchotii*), Texas sacahuista (*Nolina texana*), cactus apple (*Opuntia engelmannii*), oak  
35 (*Quercus* spp.), and pinyon pine (*Pinus edulis*).

36  
37 The Sneed's pincushion cactus is a long-lived, succulent, perennial species. Reproduction  
38 is sexual; although plants can be propagated vegetatively for cutting, they have no natural  
39 mechanism for doing so. Sneed cactus plants likely germinate from late May to early June but do  
40 not begin blooming until after they have attained 3 to 4 years of age. The plants bud in March  
41 and April, flower in mid- to late April, and fruit from August to November.

42  
43 The Sneed's pincushion cactus was federally listed as endangered on November 7, 1979  
44 (USFWS 1979b). Critical habitat has not been designated.

1 This subspecies is threatened by illegal collecting by cactus enthusiasts. Plants are  
2 relatively tough, not being affected by many of the fungi and insect predators that adversely  
3 affect other cacti.

4  
5 The Sneed's pincushion cactus may occur in the affected area of the proposed SEZ.  
6  
7

### 8 **Spring-Loving Centaury (*Centaureum namophilum*)** 9

10 ESA Listing Status: Threatened  
11 BLM Listing Status: Not Listed  
12 State Listing Status: Protected in Nevada  
13 Rarity: Nevada State Rank S2  
14

15 The spring-loving centaury is an endemic to the Ash Meadows area of Nye County,  
16 Nevada. The species occurs along the Amargosa River drainage on open, moist to wet, alkali-  
17 crusted soils of seeps, springs, outflow drainages, meadows, and hummocks. It is found at  
18 elevations of 2,100 to 2,350 ft (640 to 716 m). The species is aquatic or wetland-dependent and  
19 commonly occurs with the following species: saltgrass, goldenweed (*Ericameria* spp.), Baltic  
20 rush, yerba mansa, western niterwort (*Nitrophila occidentalis*), saltbush (*Atriplex* spp.), Tecopa  
21 bird's-beak, ash (*Fraxinus* spp.), mesquite (*Prosopis* spp.), salt cedar, baccharis (*Baccharis* spp.),  
22 and cattail (*Typha* spp.). There are 14 occurrences of this species over a range of 9 mi (14 km) on  
23 lands administered by the USFWS and the BLM and on privately owned land. The spring-loving  
24 centaury is an annual that flowers from July to September. Fruiting occurs in October. Little else  
25 is known about the reproduction and life history of this species.  
26

27 The spring-loving centaury was federally listed as threatened on May 20, 1985  
28 (USFWS 1985). Critical habitat has been designated in the Ash Meadows area of Nye County,  
29 Nevada.  
30

31 The spring-loving centaury may occur in the affected area of the proposed Amargosa  
32 Valley SEZ.  
33  
34

### 35 **Sticky Buckwheat (*Eriogonum viscidulum*)** 36

37 ESA Listing Status: Not Listed  
38 BLM Listing Status: Not Listed  
39 State Listing Status: Protected in Nevada  
40 Rarity: Nevada State Rank S2; USFWS Species of Concern  
41

42 The sticky buckwheat is a large herbaceous annual dicot in the Polygonaceae family that  
43 is native to Nevada and also occurs in Arizona. The plant is known from only a few locations in  
44 Clark and Lincoln Counties, Nevada, and adjacent Mohave County, Arizona. The plant is up to  
45 16 in. (40 cm) tall and consists of several erect to spreading, yellowish green, diffusely branched,  
46 threadlike stems rising from a basal rosette of circular or kidney-shaped leaves. The leaves are

1 densely white-hairy below and hairy to smooth above. The herbage is sticky due to being  
2 covered with glandular hairs, and is often covered with adhering sand particles. Sticky  
3 buckwheat blooms from April to June, with delicate, pale yellow flowers that are borne on thin  
4 stalks that arise from the bases of bracts at stem nodes. The fruit is a brown, oval, three-sided  
5 achene enclosed by three leaf-like bracts (AZGFD 2010; eFloras.org 2010; NatureServe 2010;  
6 NNHP 2010).

7  
8 The sticky buckwheat is dependent on sand dune communities where it occurs on deep,  
9 loose, sandy soils in washes, flats, roadsides, steep aeolian slopes, and stabilized dune areas with  
10 mesquite (*Prosopis* spp.), creosotebush, and indigo bush (*Psoralea* spp.). Elevation ranges  
11 between 1,200 and 2,200 ft (366 and 671 m) (eFloras.org 2010; NatureServe 2010; NNHP 2010).

12  
13 Sticky buckwheat populations are declining at sites where the species grows.

14  
15 Major threats are associated with habitat disturbance or destruction, recreation, fire,  
16 grazing, effects of small population size, woody plant encroachment, exotic species invasion,  
17 succession, global climate change, and pollution (NNHP 2010).

18  
19 The sticky buckwheat may occur in the affected area of the proposed Dry Lake SEZ.

## 20 21 22 **Straw-Top Cholla (*Opuntia echinocarpa*)**

23  
24 ESA Listing Status: Not Listed

25 BLM Listing Status: Not Listed

26 State Listing Status: Arizona Salvage Restricted (SR)

27 Rarity: None

28  
29 The straw-top cholla is a shrubby, perennial, dicot cactus in the Cactaceae family that is  
30 native to Arizona but also occurs in California, Nevada, and Utah. The plant is a large, erect to  
31 spreading, densely branched, spiny cactus in the form of a shrub or tree that is 1.6 to 6.6 ft (0.5 to  
32 2 m) tall. The trunk and branches are round, segmented, and green or gray-green in color. The  
33 stem segments are firmly attached, except for the terminal segments, which are sometimes easily  
34 detached and can function as vegetative propagules. The entire plant is armed with clusters of  
35 stiff spines arising from wart-like oval tubercles. Each tubercle may bear up to 20 spines. The  
36 numerous spines interlace and sometimes obscure the stem. Minute, detachable bristles  
37 (glochids) and fine, yellowish wool form tufts at the base of the spines. The straw-top cholla  
38 blooms from March to June, with clusters of flowers on the older branches. The flowers are light  
39 green to yellow-green, sometimes suffused with maroon or rose. The fruit is a densely spiny,  
40 globose, dry berry that is tan when mature and contains numerous pale yellow, angular seeds  
41 (AZGFD 2010; eFloras.org 2010; NatureServe 2010).

42  
43 The straw-top cholla grows on sandy, loamy, alluvial to gravelly substrates in the Mojave  
44 and Sonoran Deserts, in creosotebush/white bursage, blackbrush, and saltbush scrub, desert  
45 grasslands, juniper and oak-juniper woodlands, flats, bajadas, and canyons at elevations of 164 to  
46 5,575 ft (50 to 1,700 m) (AZGFD 2010; eFloras.org 2010; NatureServe 2010).

1 Major threats are associated with habitat disturbance or destruction, timber harvest,  
2 recreation, fire, grazing, effects of small population size, woody plant encroachment, exotic  
3 species invasion, succession, global climate change, and pollution.

4  
5 The straw-top cholla could occur in the affected areas of the proposed Brenda and  
6 Gillespie SEZs.

7  
8  
9 **Threecorner Milkvetch (*Astragalus geyeri* var. *triquetrus*)**

10  
11 ESA Listing Status: Not Listed  
12 BLM Listing Status: Not Listed  
13 State Listing Status: Protected in Nevada  
14 Rarity: Nevada State Rank S2; USFWS Species of Concern  
15

16 The threecorner milkvetch is a small, herbaceous annual or biennial dicot in the Fabaceae  
17 (bean) family that is native to Nevada and also occurs in Arizona. The plant is known from fewer  
18 than 25 occurrences in a restricted range in Clark and Lincoln Counties in Nevada and in a few  
19 locations in Mohave County in northwestern Arizona. This species is a fast-maturing ephemeral  
20 that is not seen for years at a time. It prefers average to above-average rainfall years to  
21 germinate. The plant consists of a stout, erect stem with spreading branches that is 4 to 8 in.  
22 (10 to 20 cm) tall. All of the herbage is covered with fine hairs that give the plant an ashy  
23 appearance. The branches bear large, widely separated, alternate, pinnately compound leaves  
24 with thick oval-pointed opposite leaflets. The threecorner milkvetch blooms during April to July,  
25 with ascending clusters of pea-like flowers on short stalks arising from leaf bases. The flowers  
26 are whitish with faint pink veins, and each flower base (the calyx) is covered with hairs. The  
27 fruits are large, oblong, curved, hairy pods that are triangular in cross section and attached to the  
28 plant by short stalks. The stiffly leathery pods contain numerous kidney-shaped smooth seeds  
29 (AZGFD 2010; NatureServe 2010; NNHP 2010).

30  
31 The threecorner milkvetch is dependent on open, deep sandy soils, desert washes, or  
32 dunes, generally stabilized by vegetation and/or a gravel veneer. Elevations range between  
33 1,500 and 2,500 ft (456 and 760 m) (NatureServe 2010; NNHP 2010).

34  
35 Threecorner milkvetch populations are declining at sites where the species grows.

36  
37 Major threats are associated with habitat disturbance or destruction, recreation, fire,  
38 grazing, effects of small population size, woody plant encroachment, exotic species invasion,  
39 succession, global climate change, and pollution (NNHP 2010).

40  
41 The threecorner milkvetch may occur in the affected area of the proposed Dry Lake SEZ.  
42  
43  
44

1 **Tiehm Blazingstar (*Mentzelia tiehmi*)**

2  
3 ESA Listing Status: Not Listed  
4 BLM Listing Status: Sensitive (Nevada)  
5 State Listing Status: Not Listed  
6 Rarity: Nevada State Rank S1  
7

8 The Tiehm blazingstar is a perennial herbaceous dicot in the Loasaceae family that is  
9 native and endemic to Nevada. The somewhat shrubby plant is up to 15 in. (39 cm) tall and  
10 consists of a woody base that gives rise to several branching, erect to spreading stems. All of the  
11 herbage is bristly-hairy. The stems bear widely separated, alternate, spatula-shaped to long ovate  
12 leaves that are wavy-edged and have shallow, rounded, irregular teeth. The Tiehm blazingstar  
13 blooms during the spring, with clusters of yellow flowers on stalks that arise from leaf or bract  
14 bases toward the ends of the stems. The fruit is an erect, globose, bristly capsule on a short stalk.  
15 The capsule has several pointed bracts on its top and contains several oval seeds that have a  
16 flattened depression at one end (NatureServe 2010).  
17

18 The Tiehm blazingstar grows on hilltops of white clay soil, sparsely vegetated white  
19 calcareous knolls, and bluffs with scattered perennials. The plants have been observed at an  
20 elevation of 5,198 ft (1,585 m).  
21

22 Major threats are associated with habitat disturbance or destruction, recreation, fire,  
23 grazing, effects of small population size, exotic species invasion, succession, global climate  
24 change, and pollution.  
25

26 The Tiehm blazingstar may occur in the affected area of the proposed Dry Lake Valley  
27 North SEZ.  
28  
29

30 **Tonopah Pincushion (*Sclerocactus nyensis*)**

31  
32 ESA Listing Status: Not Listed  
33 BLM Listing Status: Sensitive (Nevada)  
34 State Listing Status: Protected in Nevada  
35 Rarity: Nevada State Rank S1  
36

37 The Tonopah pincushion is a small, perennial dicot cactus in the family Cactaceae that is  
38 native and endemic to Nevada. This species is a very rare cactus, known only from Nye and  
39 Esmeralda Counties in Nevada, where two extant occurrences are recorded. The plant is an erect,  
40 spiny cactus with a usually unbranched, unsegmented succulent stem that is cylindrical or  
41 globose and is 2 to 4.7 in. (5 to 12 cm) tall and 1.6 to 3 in. (4 to 8 cm) in diameter. The stem has  
42 12 to 15 ribs that are armed with clusters of stiff spines arising from large, wart-like tubercles  
43 (areoles). Each areole has 10 to 14 erect and spreading spines, some of which may be hooked  
44 and others that may be flat. The spines are mostly white, but some may be reddish-brown. The  
45 spines are long and often obscure the stem. The Tonopah pincushion blooms in May, with a  
46 cluster of large, funnel-shaped, rose-purple to magenta flowers, which are crowded among the

1 dense spines at the top of the stem. The fruit is a barrel-shaped green, tan, or pale red berry that  
2 is usually persistent on the parent plant. When dry and mature, the fruit splits open to release  
3 irregularly furrowed black seeds with small warts that are transported by winds and rain  
4 (eFloras.org 2010; NatureServe 2010).

5  
6 The Tonopah pincushion grows on dry rocky volcanic soils and low outcrops of rhyolite,  
7 tuff, and possibly other rock types, on gentle slopes in open areas or under shrubs in the upper  
8 salt desert and lower sagebrush zones. Elevation ranges between 5,700 and 5,800 ft (1,733 and  
9 1,763 m) (NatureServe 2010; NNHP 2010).

10  
11 Major threats are associated with habitat disturbance or destruction, recreation, fire,  
12 grazing, effects of small population size, exotic species invasion, succession, global climate  
13 change, and pollution (NNHP 2010).

14  
15 The Tonopah pincushion may occur in the affected area of the proposed Gold Point SEZ.

16  
17  
18 **Toquima Milkvetch (*Astragalus toquimanus*)**

19  
20 ESA Listing Status: Not Listed  
21 BLM Listing Status: Sensitive (Nevada)  
22 State Listing Status: Not Listed  
23 Rarity: Nevada State Rank S2  
24

25 The Toquima milkvetch is an herbaceous perennial dicot in the Fabaceae (bean) family  
26 that is native and endemic to Nevada. The plant is known only from the Monitor and Toquima  
27 Ranges in Nye County, Nevada, where occurrences are uncommon and widely scattered. The  
28 plant consists of a taproot with a woody crown that gives rise to several erect and spreading wiry  
29 stems that are 4 to 10 in. (10 to 25 cm) tall. Some stems may be prostrate and trailing. All of the  
30 herbage is sparsely to densely hairy. The stems bear alternate, pinnately compound leaves with  
31 oval-pointed opposite leaflets. The Toquima milkvetch blooms during May to June, with clusters  
32 of pea-like flowers arising from the leaf bases. The flowers are pale yellow, tinged, and veined  
33 with lilac. The fruits are oblong legume pods that are beaked and are smooth or finely hairy. The  
34 pods contain numerous mit-shaped smooth seeds that are olive, black, or brown (NatureServe  
35 2010; NNHP 2010).

36  
37 The Toquima milkvetch grows on dry, stiff, sandy to gravelly, generally somewhat basic  
38 or calcareous soils, mostly on flats or gentle slopes, frequently growing under or up through  
39 shrubs, at elevations between 6,500 and 7,500 ft (1,976 and 2,280 m) (NatureServe 2010;  
40 NNHP 2010).

41  
42 Toquima milkvetch populations are declining at sites in Nevada where the species grows.  
43 Major threats are associated with habitat disturbance or destruction, recreation, fire, grazing,  
44 effects of small population size, woody plant encroachment, exotic species invasion, succession,  
45 global climate change, and pollution (NNHP 2010).

1 The Toquima milkvetch may occur in the affected area of the proposed Millers SEZ.  
2  
3

4 **Tumamoc Globeberry (*Tumamoca macdougalii*)**  
5

6 ESA Listing Status: Not Listed

7 BLM Listing Status: Sensitive (Arizona)

8 State Listing Status: Arizona Salvage Restricted (SR)

9 Rarity: None  
10

11 The Tumamoc globeberry is a delicate, perennial dicot vine in the Cucurbitaceae (squash)  
12 family that is native and endemic to southern Arizona and northern Mexico. The plant is dormant  
13 during the winter and early spring. In late spring, slender, smooth, herbaceous stems arise from  
14 succulent tuberous roots and climb, by means of tendrils, up to 10 ft (3 m) into nearby shrubs and  
15 trees. Growth is stimulated by spring and summer rains. The annual stems bear thin, alternate,  
16 three-lobed leaves with clasping tendrils at the leaf bases. Each leaf lobe is further divided into  
17 several irregular lobes. The Tumamoc globeberry blooms from July to August and fruits from  
18 August to September. The plant has separate male and female flowers (monoecious) that are star-  
19 shaped, are white to greenish-yellow, and arise from leaf bases. The fruit is a small, globose,  
20 bright red, several-seeded berry that is relished by wildlife (AZGFD 2010; NatureServe 2010).  
21

22 The Tumamoc globeberry grows in desertscrub and xeric situations, in shady areas of  
23 nurse plants along gullies and washes, in rocky to gravelly, sandy, silty, and clayey soils, at  
24 elevations of 1,476 to 2,608 ft (450 to 795 m) (AZGFD 2010; NatureServe 2010).  
25

26 Major threats are associated with habitat disturbance or destruction, recreation, effects of  
27 small population size, exotic species invasion, succession, global climate change, and pollution.  
28

29 The Tumamoc globeberry could occur in the affected area of the proposed Gillespie SEZ.  
30  
31

32 **Villard Pincushion Cactus (*Escobaria villardii*)**  
33

34 ESA Listing Status: Not Listed

35 BLM Listing Status: Sensitive (New Mexico)

36 State Listing Status: Endangered in New Mexico

37 Rarity: New Mexico State Rank S2; USFWS Species of Concern  
38

39 The Villard pincushion cactus occurs in the northern Franklin and Sacramento Mountains  
40 in Otero and Doña Ana Counties, New Mexico. Its characteristic habitat is nearly flat benches  
41 above vertical north-facing limestone cliffs in Chihuahuan Desert and black grama grassland. Its  
42 substrate is well-developed, loamy soil. Its elevation ranges from 4,500 to 6,500 ft (1,370 to  
43 2,000 m) (NatureServe 2010; NMRPTC 2010).  
44

1 The Villard pincushion cactus is a spiny perennial succulent. Pale yellowish, pinkish, or  
2 white flowers appear in April. Fruit is elongate and green to reddish. Seeds are brown, pitted, and  
3 roughly 0.04 in. (1 mm) long (NatureServe 2010; NMRPTC 2010).  
4

5 The Villard pincushion is listed as sensitive by the BLM, listed as endangered by the  
6 State of New Mexico, is a USFWS species of concern, and is ranked S2 in New Mexico.  
7

8 The species is common within its area of distribution. Its locations are nearly  
9 inaccessible, which severely limits the threat of collection or grazing. Accidental wildfires in  
10 grassland habitat pose a threat.  
11

12 The Villard pincushion cactus may occur within the affected area of the proposed Afton  
13 SEZ (NatureServe 2010; NMRPTC 2010).  
14  
15

### 16 **White Bearpoppy (*Arctomecon merriamii*)**

17  
18 ESA Listing Status: Not Listed  
19 BLM Listing Status: Sensitive (Nevada)  
20 State Listing Status: Not Listed  
21 Rarity: Not Listed  
22

23 The white bearpoppy is an herbaceous perennial dicot in the Papaveraceae (poppy)  
24 family that is native to Nevada and endemic to the Death Valley region of Clark, Lincoln, and  
25 Nye Counties of Nevada and eastern Inyo and San Bernardino Counties of California. The plant  
26 consists of a stout taproot, from which arises a crowded basal clump of erect leaves that is about  
27 5 in. (13 cm) tall. The leaves are wedge-shaped with several shallow teeth on the top margin and  
28 densely covered with long, white, shaggy hairs, which make them appear grayish-blue in color.  
29 The base of the plant is often surrounded by a layer of ash- or straw-colored dead leaves. The  
30 white bearpoppy blooms from April to May, with numerous tall, smooth, flowering stems that  
31 rise above the basal leaf clump to a height of about 20 in. (50 cm). Each waxy flowering stem  
32 bears at its end a large ovoid flower bud that is initially nodding, but becomes upright when the  
33 bud opens to produce an attractive white flower with a dark yellow center. The fruit is an  
34 upright, oblong, persistent capsule that opens at the top by pointed flaps when the fruit dries and  
35 becomes mature. The capsule contains numerous, small, wrinkled, black seeds (eFloras.org,  
36 2010; Jepson 2010; NatureServe 2010; NNHP 2010).  
37

38 The white bearpoppy grows on a wide variety of dry to sometimes moist basic soils,  
39 including alkaline clay and sand, gypsum, calcareous alluvial gravels, and carbonate rock  
40 outcrops at elevations between 2,000 and 6,280 ft (610 and 1,914 m) (NatureServe 2010;  
41 NNHP 2010).  
42

43 Populations of white bearpoppy are declining at the sites where it grows in Nevada and  
44 California.  
45

1 Major threats are associated with habitat disturbance or destruction, recreation, fire,  
2 grazing, effects of small population size, exotic species invasion, succession, global climate  
3 change, and pollution (NatureServe 2010; NNHP 2010).

4  
5 The white bearpoppy may occur in the affected areas of the proposed Amargosa Valley  
6 and Dry Lake SEZs.

7  
8  
9 **White River Cat's-Eye (*Cryptantha welshii*)**

10  
11 ESA Listing Status: Not Listed  
12 BLM Listing Status: Sensitive  
13 State Listing Status: Not Listed  
14 Rarity: USFWS Species of Concern

15  
16 The White River cat's-eye is an herbaceous biennial or short-lived perennial dicot in the  
17 Boraginaceae family that is native to Nevada and endemic to Lincoln, Nye, and White Pine  
18 Counties. The plant consists of several erect stems that are up to 12 in. (30 cm) tall arising from a  
19 branched root crown. All of the herbage is covered with long, stiff hairs. The stems are  
20 subtended by a tuft of spatula-shaped basal leaves. The stems bear widely spaced, alternate,  
21 long-oval leaves. All of the leaves have pustules on their undersides. The White River cat's-eye  
22 blooms in early summer, with clusters of white flowers arising from leaf bases toward the ends  
23 of the stems. The urn-shaped base of each flower (the calyx) is densely covered with long, white,  
24 stiff hairs. The fruit is a brown, triangular-ovate nutlet, covered with small warts, and which has  
25 an open groove on one side. Four nutlets are produced by each flower (NatureServe 2010;  
26 NNHP 2010).

27  
28 The White River cat's-eye grows on dry, open, sparsely vegetated outcrops, and sandy to  
29 silty or clay soils derived from whitish calcareous or carbonate deposits, often forming knolls or  
30 gravelly hills, and on soils adjacent to such habitats at elevations of 4,540 to 6,660 ft (1,384 to  
31 2,030 m) (NatureServe 2010; NNHP 2010).

32  
33 Populations of White River cat's-eye are declining at the sites where it grows in Nevada.

34  
35 Major threats are associated with habitat disturbance or destruction, recreation, fire,  
36 grazing, effects of small population size, exotic species invasion, succession, global climate  
37 change, and pollution (NNHP 2010).

38  
39 The White River cat's-eye may occur in the affected area of the proposed Dry Lake  
40 Valley North SEZ.

41  
42  
43 **White-Margined Beardtongue (*Penstemon albomarginatus*)**

44  
45 ESA Listing Status: Not Listed  
46 BLM Listing Status: Sensitive (California)

1 State Listing Status: Not Listed

2 Rarity: California State Rank S1; Nevada State Rank S2; USFWS Species of Concern

3  
4 The white-margined beardtongue is an herbaceous perennial dicot in the Plantaginaceae  
5 family that is native to California but also occurs in Arizona and Nevada. The plant consists of  
6 several erect, smooth stems that are 6 to 14 in. (15 to 35 cm) tall and arise from a long taproot  
7 whose crown is buried in the sand. The stems bear widely spaced, opposite leaves that are pale  
8 green, oblong-pointed, weakly toothed, and wavy edged and have a distinct white margin. Near  
9 the bases of the stems, the leaves tend to be small and scale-like. The white-margined  
10 beardtongue blooms from March to May, with tubular flowers in shades of pink, lavender, or  
11 white, with darker purple veins and spots, and with yellow hairs on the inside of the lower petals.  
12 The flowers are borne in spike-like inflorescences at the ends of the stems. The fruit is an oval  
13 capsule that contains numerous irregularly angled seeds (eFloras.org 2010; NatureServe 2010).

14  
15 The white-margined beardtongue grows in loose, windblown, desert, sand dune habitats  
16 and Mojave desertscrub communities at elevations below 3,600 ft (1,100 m) (California Native  
17 Plant Society 2010; NatureServe 2010).

18  
19 Major threats are associated with habitat disturbance or destruction, recreation, fire,  
20 grazing, effects of small population size, exotic species invasion, succession, global climate  
21 change, and pollution.

22  
23 The white-margined beardtongue could occur in the affected area of the proposed  
24 Amargosa Valley and Riverside East SEZs.

25  
26  
27 **Yellow Two-Tone Beardtongue (*Penstemon bicolor* ssp. *bicolor*)**

28  
29 ESA Listing Status: Not Listed

30 BLM Listing Status: Sensitive (Nevada)

31 State Listing Status: Not Listed

32 Rarity: Nevada State Rank S2; USFWS Species of Concern

33  
34 The yellow two-tone beardtongue is a large, herbaceous perennial dicot in the  
35 Plantaginaceae family that is native and endemic to Nevada. The species is known from  
36 32 occurrences in Clark County on lands adjacent to the expanding limits of the Las Vegas urban  
37 area. The plant consists of numerous erect to spreading stout, smooth stems that are up to 60 in.  
38 (120 cm) tall. The stems bear widely separated, thick, leathery, opposite leaves that have strongly  
39 toothed margins; the teeth are often somewhat spiny. The bases of the paired leaves are united  
40 around the stem. The yellow two-tone beardtongue blooms from March to May, with wide-  
41 mouthed yellow tubular flowers in clusters that arise from the bases of leaves or bracts at stem  
42 nodes near the ends of the stems. The bottom petal of each flower has a tuft of yellowish hair in  
43 its center. The entire inflorescence, including the outside of the flower petals, is glandular-hairy.  
44 The fruit is an oval capsule that contains numerous irregularly angled seeds (Jepson 2010;  
45 NatureServe 2010; NNHP 2010).

1 The yellow two-tone beardtongue grows on calcareous or carbonate soils in washes,  
2 roadsides, rock crevices, outcrops, or similar places receiving enhanced runoff, in the  
3 creosotebush-bursage, blackbrush, mixed-shrub, and lower juniper zones at elevations between  
4 2,500 and 5,480 ft (762 and 1,670 m) (NNHP 2010).

5  
6 Populations of yellow two-tone beardtongue are declining at the sites where it grows in  
7 Nevada.

8  
9 Major threats are associated with habitat disturbance or destruction, recreation, fire,  
10 grazing, effects of small population size, exotic species invasion, succession, global climate  
11 change, and pollution (NNHP 2010).

12  
13 The yellow two-tone beardtongue may occur in the affected area of the proposed Dry  
14 Lake SEZ.

## 15 16 17 **J.6.2 Invertebrates**

### 18 19 20 **Amargosa Naucorid (*Pelocoris shoshone amargosa*)**

21  
22 ESA Listing Status: Under Review

23 BLM Listing Status: Not Listed

24 State Listing Status: Not Listed

25 Rarity: Nevada State Rank S1

26  
27 The Amargosa naucorid is endemic to the Amargosa Valley in Nye County, Nevada. It  
28 inhabits spring-fed, low-velocity aquatic habitats with an abundance of detritus or aquatic  
29 macrophytes. It is often located under overhanging banks associated with marshy habitats  
30 (NatureServe 2010; USFWS 1998). Amargosa naucorids are oval-shaped, flattened bugs with  
31 front legs that form pincers. The middle and back legs are modified for swimming. They eat  
32 dragonflies, midges, mosquito larva, water boatmen, and mollusks (NatureServe 2010;  
33 USFWS 1998).

34  
35 Currently, the Amargosa naucorid is under review for listing under the ESA, listed as  
36 sensitive by the BLM, and ranked S2 in Nevada.

37  
38 The Amargosa naucorid may occur in the affected area of the proposed Amargosa Valley  
39 SEZ.

### 40 41 42 **Amargosa Tryonia (*Tryonia variegata*)**

43  
44 ESA Listing Status: Under Review

45 BLM Listing Status: Sensitive (Nevada)

1 State Listing Status: Not Listed  
2 Rarity: Nevada State Rank S2  
3

4 The Amargosa tryonia occurs in detritus-covered areas on macrophytes, on travertine  
5 (a calcium-carbonate rock) blocks, and in soft sediment along the sides of upper segments of  
6 freshwater stream outflows. It is endemic to the Amargosa Valley in Nye County, Nevada, and  
7 Inyo County, California (Center for Biological Diversity 2009; NatureServe 2010).  
8

9 The Amargosa tryonia is a springsnail. Springsnails are inextricably linked with their  
10 aquatic habitat, often endemic to single water bodies or local drainage systems. Its shell is 0.1 to  
11 0.3 in. (2.8 to 7.5 mm) in height and is conic to elongate-conic in shape (Center for Biological  
12 Diversity 2009).  
13

14 Because of its naturally limited distribution and poor dispersal abilities, habitat loss will  
15 result in population extirpation or species extinction. Threats include loss and degradation of  
16 spring habitat due to groundwater withdrawal, altered precipitation patterns due to global climate  
17 change, and invasive species such as crayfish (*Procambarus clarki*) and redrim melania snails  
18 (*Melanoides tuberculata*).  
19

20 Currently, the Amargosa tryonia is under review for listing under the ESA (Center for  
21 Biological Diversity 2009).  
22

23 The Amargosa tryonia may occur in the affected area of the proposed Amargosa Valley  
24 SEZ.  
25  
26

### 27 **Anthony Blister Beetle (*Lytta mirifica*)**

28 ESA Listing Status: Not Listed  
29 BLM Listing Status: Sensitive  
30 State Listing Status: New Mexico Species of Concern  
31 Rarity: USFWS Species of Concern  
32  
33

34 The Anthony blister beetle occurs in south-central New Mexico, which includes Sierra,  
35 Otero, and Doña Ana Counties, although finer-scale distributions have not been specified. It is a  
36 terrestrial species that inhabits the flowers and foliage of various plants and agricultural areas,  
37 where it may be a pest of certain crops, including tomatoes, potatoes, beets, and clover  
38 (NMDGF 2010).  
39

40 Blister beetles are both plant feeders and parasites, eating grasses and forbs as well as  
41 deriving nutrients from living hosts. Larvae parasitize bees by climbing onto flowers and  
42 attaching themselves to bees that visit the flowers. The bees carry the larvae to their nest, where  
43 they attack bee eggs. They also feed on grasshopper eggs. Adult beetles are plant feeders and can  
44 completely defoliate plants. Blister beetles reproduce by laying eggs. They undergo  
45 hypermetamorphosis and appear in several forms throughout their life (NMDGF 2010).  
46

1 The Anthony blister beetle is affected by the extirpation of blacktailed and Gunnison  
2 prairie dogs and other large, burrowing rodents. It was listed in the *Federal Register* as a  
3 Category 2 species for consideration to be listed as a threatened or an endangered species on  
4 November 15, 1994. In 1996, the USFWS changed the listing status of federal candidate species  
5 to eliminate category designations, and it no longer considered Category 2 species like the beetle  
6 as candidate species. It was classified as a species of concern in March of 1996. Currently, it is  
7 listed as sensitive by the BLM and is a USFWS and New Mexico species of concern.  
8

9 The Anthony blister beetle may occur within the affected area of the proposed Afton SEZ  
10 (NMDGF 2010; NMSU 2010).  
11  
12

### 13 **Ash Meadows Naucorid (*Ambrysus amargosus*)**

14  
15 ESA Listing Status: Threatened  
16 BLM Listing Status: Not Listed  
17 State Listing Status: Not Listed  
18 Rarity: Nevada State Rank S1  
19

20 The Ash Meadows naucorid is a creeping water bug that is restricted to Ash Meadows in  
21 Nye County, Nevada. It is less than 0.25 in. (0.6 cm) long and is brownish-green to brownish-  
22 black in color. It inhabits a unique desert wetland with a shallow flow of water from the seepage  
23 of more than 30 springs in the area. The water bugs are usually found on substrates of gravel and  
24 stones covered by warm spring water. The adults and nymphs are predatory and move slowly  
25 along submerged aquatic vegetation and the shoreline in search of food. This species feeds on a  
26 variety of insects, spiders, centipedes, and millipedes that live in Ash Meadows. The Ash  
27 Meadows naucorid is believed to occur at only one location in east-central Ash Meadows.  
28

29 The USFWS reported this species as occurring on the Ash Meadows NWR. It is listed as  
30 one of 24 species of plant and animals that are endemic to the refuge.  
31

32 The Ash Meadows naucorid was federally listed as threatened on May 20, 1985  
33 (USFWS 1985). Critical habitat has been designated for this species in the Ash Meadows NWR.  
34

35 Threats to the continued existence of the species have included habitat alteration and  
36 fragmentation from agriculture, stream channelization, peat mining, and water diversion.  
37

38 The Ash Meadows naucorid may occur in the affected area of the proposed Amargosa  
39 Valley SEZ.  
40  
41

### 42 **Ash Meadows Pebblesnail (*Pyrgulopsis erythropoma*)**

43  
44 ESA Listing Status: Under Review  
45 BLM Listing Status: Not Listed  
46

1 State Listing Status: Not Listed  
2 Rarity: Nevada State Rank S1  
3

4 The Ash Meadows pebblesnail occurs in the Ash Meadows area of Nye County, Nevada,  
5 in the Upper Amargosa watershed. It occurs within six springs located within 0.3 mi (0.5 km) of  
6 each other. Habitat includes rocky substrate in flowing freshwater thermal water and on stones  
7 and travertine blocks in swift currents (Center for Biological Diversity 2009; NatureServe 2010).  
8

9 Springsnails are inextricably linked with their aquatic habitat, often endemic to single  
10 water bodies or local drainage systems. It is small in size with a very short-spined globose-  
11 turbinate shell (Center for Biological Diversity 2009).  
12

13 Currently, the Ash Meadows pebblesnail is under review for listing under the ESA.  
14 Threats include groundwater extraction in southern Nevada (Center for Biological  
15 Diversity 2009; NatureServe 2010).  
16

17 The Ash Meadows pebblesnail may occur in the affected area of the Amargosa Valley  
18 SEZ.  
19  
20

### 21 **Big Dune Miloderes Weevil (*Miloderes* sp. 1)**

22

23 ESA Listing Status: Not Listed  
24 BLM Listing Status: Sensitive  
25 State Listing Status: Not Listed  
26 Rarity: Nevada State Rank S1  
27

28 The Big Dune miloderes weevil is endemic to the Big Dune area, approximately 3 mi  
29 (5 km) east of the Amargosa Valley SEZ. It is dependent upon deep sand habitats.  
30

31 The Big Dune miloderes weevil may occur in the affected area of the proposed Amargosa  
32 Valley SEZ.  
33  
34

### 35 **Crescent Dunes Aegialian Scarab (*Aegialia crescenta*)**

36

37 ESA Listing Status: Under Review  
38 BLM Listing Status: Sensitive  
39 State Listing Status: Not Listed  
40 Rarity: Nevada State Rank S1  
41

42 The Crescent Dunes aegialian scarab is a sand dune obligates species primarily restricted  
43 to the Crescent Dunes, approximately 6 mi (10 km) east of the Millers SEZ in Nevada. It may  
44 also occur in the San Antonio Dunes in Nye County and the Game Range Dunes in Clark  
45 County, Nevada. Adults and larvae of the *Aegialia* species are primarily psammophile, living on  
46 stream-deposited sand bars, wind-deposited sand dunes, seaside dunes, or very sandy substrate.

1  
2 The Crescent Dunes aegialian scarab is reddish brown with yellowish brown legs,  
3 mouthparts, and anterior surface. Its head and body are smooth, shiny, and textured with tiny  
4 puncture marks. Specimens range in size from 0.15 to 0.2 in. (3.75 to 5 mm) long and 0.08 to  
5 0.1 in. (2.1 to 2.7 mm) wide (WildEarth Guardians 2010).  
6

7 The Crescent Dunes aegialian scarab is currently under review for listing under the ESA.  
8

9 This species may occur in the affected area of the proposed Millers SEZ.  
10

### 11 12 **Crescent Dunes Serican Scarab (*Serica ammomenisco*)**

13  
14 ESA Listing Status: Under Review

15 BLM Listing Status: Sensitive

16 State Listing Status: Not Listed

17 Rarity: Nevada State Rank S1  
18

19 The Crescent Dunes serican scarab is a sand dune obligates species primarily restricted to  
20 the Crescent Dunes, approximately 6 mi (10 km) east of the Millers SEZ in Nevada. The  
21 Crescent Dunes serican scarab is a dark brown beetle. Some body parts have scattered, erect,  
22 pale-colored hairs. Average length is 0.3 in. (7.2 mm) (WildEarth Guardians 2010).  
23

24 Currently, the species is under review for listing under the ESA.  
25

26 The Crescent Dunes serican scarab may occur in the affected area of the proposed Millers  
27 SEZ.  
28

### 29 30 **Crystal Springsnail (*Pyrgulopsis crystalis*)**

31  
32 ESA Listing Status: Under Review

33 BLM Listing Status: Not Listed

34 State Listing Status: Not Listed

35 Rarity: Nevada State Rank S1  
36

37 The crystal springsnail is a freshwater mollusk endemic to the Ash Meadows region of  
38 Nye County, Nevada, where it is known only from Crystal Spring. Within this spring, this  
39 species is found clinging to the walls of deep orifices. The crystal springsnail is a small-sized  
40 snail with a globose-neritiform shell. The spire is very short, and the aperture is broad and  
41 enlarged. Its total length is less than 0.1 in. (2.5 mm), and it has approximately 3 whorls. The  
42 shell is colorless, transparent, and thin (Center for Biological Diversity 2009).  
43

44 The Crystal springsnail may occur in the affected area of the proposed Amargosa Valley  
45 SEZ.  
46  
47

1 **Distal Gland Springsnail (*Pyrgulopsis nanus*)**

2  
3 ESA Listing Status: Under Review  
4 BLM Listing Status: Not Listed  
5 State Listing Status: Not Listed  
6 Rarity: Nevada State Rank S1  
7

8 The distal gland springsnail is endemic to the Ash Meadows NWR of southern Nye  
9 County, Nevada, in the Upper Amargosa watershed. It is known from only four spring systems  
10 within the refuge: Five Springs, Mary Scott Spring, Collins Ranch Spring, and a spring north of  
11 Collins Ranch Spring. All these springs occur within 6 mi (10 km) of each other. Habitat is soft  
12 sediment and loose travertine in the upper segments of thermal streams (Center for Biological  
13 Diversity 2009). This small-sized snail has a globose, short-spined shell. It is less than 0.1 in.  
14 (1.5 to 2.4 mm) in height and has 3.0 to 4.0 whorls (Center for Biological Diversity 2009).  
15

16 Although locally common, the distal gland springsnail's highly limited range is a threat to  
17 its survival.  
18

19 Currently, the distal gland springsnail is under review for listing under the ESA.  
20

21 The distal gland springsnail may occur in the affected area of the proposed Amargosa  
22 Valley SEZ.  
23  
24

25 **Elongate Gland Springsnail (*Pyrgulopsis isolata*)**

26  
27 ESA Listing Status: Under Review  
28 BLM Listing Status: Not Listed  
29 State Listing Status: Not Listed  
30 Rarity: Nevada State Rank S1  
31

32 The elongate gland springsnail is endemic to the Ash Meadows NWR in southern Nye  
33 County, Nevada. Within the refuge, it is known only from the spring south of Clay Pits. It is  
34 locally common on soft substrates in its thermal habitat and can be found on outflows from the  
35 marsh (Center for Biological Diversity 2009).  
36

37 This large-sized snail has a colorless, transparent, broadly conical shell with a moderate  
38 spire. The shell is less than 0.1 in. (2.6 to 3.1 mm). It has 3.75 to 4.25 highly convex whorls. The  
39 aperture is slightly separated from the body whirl, and the inner lip is complete and thickened  
40 (Center for Biological Diversity 2009).  
41

42 Currently, the elongate gland springsnail is under review for listing under the ESA. It is  
43 threatened by its endemic nature and poor dispersal capabilities, which makes populations  
44 vulnerable to disturbance.  
45

1 The elongate gland springsnail may occur in the affected area of the proposed Amargosa  
2 Valley SEZ.

3  
4  
5 **Fairbanks Springsnail (*Pyrgulopsis fairbanksensis*)**

6  
7 ESA Listing Status: Under Review  
8 BLM Listing Status: Not Listed  
9 State Listing Status: Not Listed  
10 Rarity: Nevada State Rank S1

11  
12 The Fairbanks springsnail is endemic to the Ash Meadows NWR in southern Nye County  
13 Nevada. Within the refuge, it is known only from Fairbanks Spring. Habitat is soft travertine  
14 substrate at the orifice of a large, low-elevation spring (Center for Biological Diversity 2009).  
15 The Fairbanks springsnail has 3 to 4 whorls and is less than 0.1 in. (2.5 to 3.4 mm) in height. It is  
16 a moderate-sized snail with a short-spined, globose-turbinata shell with a thickened inner lip  
17 (Center for Biological Diversity 2009).

18  
19 Because of its endemic nature, the Fairbanks springsnail is naturally limited in  
20 distribution and has very poor dispersal abilities. As a result, habitat loss will result in population  
21 extirpation or species extinction.

22  
23 The Fairbanks springsnail is currently under review for listing under the ESA.

24  
25 This species may occur in the affected area of the proposed Amargosa Valley SEZ.

26  
27  
28 **Giuliani's Dune Scarab Beetle (*Pseudocotalpa giulianii*)**

29  
30 ESA Listing Status: Under Review  
31 BLM Listing Status: Sensitive  
32 State Listing Status: Not Listed  
33 Rarity: Nevada State Rank S1

34  
35 The Giuliani's dune scarab beetle is an insect that is endemic to the Big Dune and Lava  
36 Dune in Nye County, Nevada. Within these habitats, the species primarily lives beneath the sand  
37 surface; adults are active above ground for short periods near sunset. Adults breed on  
38 creosotebush and on sand surfaces; larvae develop beneath the sand surface, where they  
39 apparently feed on plant roots.

40  
41 The Giuliani's dune scarab beetle may occur in the affected area of the proposed  
42 Amargosa Valley SEZ.

1 **Grated Tryonia (*Tryonia clathrata*)**

2  
3 ESA Listing Status: Under Review  
4 BLM Listing Status: Sensitive  
5 State Listing Status: Not Listed  
6 Rarity: Nevada State Rank S2  
7

8 The grated tryonia is endemic to the Muddy River spring system in southeastern Nevada.  
9 In Clark County, it occurs in Oasis Spring, Muddy Spring, Cardy Lamb Spring, Apar Springs,  
10 and springs in the Moapa Valley Water District and the Moapa Valley NWR. In Lincoln County,  
11 it occurs at Warm Spring, Ash Springs, and Crystal Springs in the Pahrnagat Valley. It also  
12 occurs in Nye County at Moorman Spring and Hot Creek Spring. The species occurs on or in  
13 algae and detritus substrates of warm, slow-moving freshwater spring systems. Water tends to be  
14 less than 2 in. (5 cm) deep and moves at less than 8 in. (20 cm) per second. Preferred substrate is  
15 sand and fine to coarse particulate organic matter. Gravel and cobbles are avoided. Nearby  
16 vegetation includes bulrush (*Schoenoplectus* spp.), muskgrass (*Chara vulgaris*), horsehair algae,  
17 spikerush (*Eleocharis* sp.), yerba mansa, and saltgrass (Center for Biological Diversity 2009).  
18 The grated tryonia is 0.1 to 0.3 in. (2.9 to 7.0 mm) tall with 5.75 to 8.75 whorls. It has a medium  
19 to large-sized conical shell with strong collabral sculpture (Center for Biological  
20 Diversity 2009).  
21

22 The grated tryonia is currently under review for listing under the ESA.  
23

24 Threats include decreased spring discharge due to groundwater development, water  
25 diversions, recreation activities, invasive species, and global climate change. In particular,  
26 groundwater withdrawals from alluvial and carbonate aquifers in the Muddy River Springs Area  
27 are expected to increase with increasing development.  
28

29 The grated tryonia may occur in the affected area of the proposed Dry Lake SEZ.  
30  
31

32 **Great Basin Silverspot Butterfly (*Speyeria nokomis nokomis*)**

33  
34 ESA Listing Status: Not Listed  
35 BLM Listing Status: Sensitive (Colorado)  
36 State Listing Status: Not Listed  
37 Rarity: Colorado State Rank S1; New Mexico State Rank S1  
38

39 The Great Basin silverspot butterfly, also known as the Nokomis fritillary, occurs in  
40 isolated populations in streamside meadows, marshes, and open seepage areas associated with  
41 violets in generally desert landscapes. Its range stretches from east-central California, Nevada,  
42 Utah, and Colorado south through Arizona and New Mexico and into Mexico  
43 (NatureServe 2010; Opler et al. 2010).  
44

45 The butterfly exhibits sexual dimorphism. The male is brownish orange with dark  
46 markings, while the female is black with cream-colored spots. Both sexes have hindwings with

1 black-bordered silver spots. The species has only one flight. Mating occurs from July to  
2 September, when males patrol for receptive females. Females lay single eggs near host plants,  
3 such as the northern bog violet (*Viola nephrophylla*). First-stage caterpillars are unfed and  
4 hibernate until spring, when they feed on the leaves of the host. Adults eat flower nectar  
5 (Opler et al. 2010). Threats to this species include habitat drainage and development.  
6

7 The Great Basin silverspot butterfly may occur in the affected areas of the proposed  
8 Antonito Southeast and Los Mogotes East SEZs.  
9

10  
11 **Large Aegialian Scarab Beetle (*Aegialia magnifica*)**  
12

13 ESA Listing Status: Under Review  
14 BLM Listing Status: Sensitive  
15 State Listing Status: Not Listed  
16 Rarity: Nevada State Rank S1  
17

18 The large aegialian scarab beetle is endemic to the Big Dune and Lava Dune regions of  
19 Nye County, Nevada. Adult and larvae of this species live in very sandy substrates, specifically  
20 wind-deposited sand dunes. The large aegialian scarab beetle is dependent upon deep sand  
21 habitats. The beetle is pale red, smooth, and shiny with tiny puncture marks. It is 0.2 in. (4.4 to  
22 (5.9 mm) long and 0.2 in. (2.5 to 3.3 mm) wide (WildEarth Guardians 2010).  
23

24 The beetle is currently under review for listing under the ESA.  
25

26 Threats include small populations, limited range, and habitat destruction (WildEarth  
27 Guardians 2010).  
28

29 The large aegialian scarab beetle may occur in the affected area of the proposed  
30 Amargosa Valley SEZ.  
31  
32

33 **Median Gland Springsnail (*Pyrgulopsis pisteri*)**  
34

35 ESA Listing Status: Under Review  
36 BLM Listing Status: Not Listed  
37 State Listing Status: Not Listed  
38 Rarity: Nevada State Rank S1  
39

40 The median gland springsnail, also known as the median gland Nevada pyrg, is endemic  
41 to the Ash Meadows NWR in southern Nye County, Nevada. It is known from only three spring-  
42 fed habitats, all within 1 mi (2 km) of each other—North Scruggs Spring, Marsh Spring, and an  
43 observation pond below School Spring. Habitat is the outflows of thermal springs on travertine,  
44 aquatic macrophytes, or soft substrates (Center for Biological Diversity 2009).  
45

1 The springsnail is small with a globose shell that is less than 0.1 in. (1.8 to 2.7 mm) high.  
2 The shell is colorless and transparent and has a short spire and 3.25 to 4.5 whorls (Center for  
3 Biological Diversity 2009).

4  
5 The median gland springsnail is currently under review for listing under the ESA.  
6

7 Threats include loss and degradation of spring habitat due to groundwater development  
8 (Center for Biological Diversity 2009).  
9

10 The median gland springsnail may occur in the affected area of the proposed Amargosa  
11 Valley SEZ.  
12  
13

#### 14 **Minute Tryonia (*Tryonia ericae*)**

15  
16 ESA Listing Status: Under Review  
17 BLM Listing Status: Not Listed  
18 State Listing Status: Not Listed  
19 Rarity: Nevada State Rank S1  
20

21 The minute tryonia is endemic to the Ash Meadows NWR in southern Nye County,  
22 Nevada. It is known from less than four spring-fed habitats, including North Scruggs Spring and  
23 a spring north of Collins Ranch Spring. Habitat includes macrophytes, stream outflows,  
24 travertine bits, and mats of algae at small low-elevation springs (Center for Biological Diversity  
25 2009). This small springsnail is less than 0.1 in. (< 0.19 cm) long. It has a conical shell with  
26 impressed sutures and a thickened aperture. Unlike most springsnails, the female sperm tube and  
27 brood pouch are fused rather than opening separately (Center for Biological Diversity 2009).  
28

29 The minute tryonia is under review for listing under the ESA and is ranked S1 (critically  
30 imperiled) in Nevada.  
31

32 Threats include habitat destruction from groundwater development.  
33

34 The minute tryonia may occur in the affected area of the proposed Amargosa Valley  
35 SEZ.  
36  
37

#### 38 **Moapa Pebblesnail (*Pyrgulopsis avernalis*)**

39  
40 ESA Listing Status: Under Review  
41 BLM Listing Status: Not Listed  
42 State Listing Status: Not Listed  
43 Rarity: Nevada State Rank S1  
44

45 The Moapa pebblesnail is endemic to Moapa Springs in Clark County, Nevada. It is a  
46 benthic species that inhabits freshwater springs and brooks. The pebblesnail is associated with

1 coarse gravel substrate, higher current velocities, and warmer water temperatures ranging from  
2 73 to 90°F (23 to 32°C). Nearby vegetation includes ash (*Fraxinus* spp.), mesquite, salt cedar,  
3 fan palm (*Washingtonia filifera*), grasses like saltgrass, and perennial herbs. The pebblesnail  
4 occupies a wide range of depths, preferring 12 to 16 in. (30 to 40 cm) (Center for Biological  
5 Diversity 2009). The Moapa pebblesnail is a medium-sized snail with a globose-trochoid shell. It  
6 eats algae and detritus (Center for Biological Diversity 2009).

7  
8 The Moapa pebblesnail is currently under review for listing under the ESA.

9  
10 Threats include decreased spring discharge due to groundwater development, water  
11 diversions, recreation, invasive species, and global climate change (Center for Biological  
12 Diversity 2009).

13  
14 The Moapa pebblesnail may occur in the affected area of the proposed Dry Lake SEZ.

15  
16  
17 **Moapa Valley Pebblesnail (*Pyrgulopsis carinifera*)**

18  
19 ESA Listing Status: Under Review

20 BLM Listing Status: Not Listed

21 State Listing Status: Not Listed

22 Rarity: Nevada State Rank S1

23  
24 The Moapa Valley pebblesnail, also known as the Moapa Valley pyrg, is endemic to the  
25 Moapa Valley in Clark County, Nevada. It occurs in Apar Springs, Muddy Spring, springs west  
26 of Muddy Spring, and a spring in Moapa Valley NWR. The pebblesnail inhabits freshwater  
27 springs with temperatures of around 32°C (90°F). Surrounding vegetation includes ash,  
28 mesquite, salt cedar, fan palm (*Washingtonia filifera*), grasses (especially *Distichlis spicata*), and  
29 perennial herbs. The pebblesnail prefers waters less than 4 in. (10 cm) deep. Substrate is gravel,  
30 with sand, coarse particulate organic matter, fines, and cobbles (Center for Biological Diversity  
31 2009).

32  
33 The Moapa Valley pebblesnail is currently under review for listing under the ESA and is  
34 ranked S1 (critically imperiled) in Nevada.

35  
36 Threats include decreased spring discharge due to groundwater development, water  
37 diversions, recreation, invasive species, and global climate change (Center for Biological  
38 Diversity 2009).

39  
40 The Moapa Valley pebblesnail may occur in the affected area of the proposed Dry Lake  
41 SEZ.

1 **Moapa Warm Spring Riffle Beetle (*Stenelmis moapa*)**

2  
3 ESA Listing Status: Under Review  
4 BLM Listing Status: Sensitive  
5 State Listing Status: Not Listed  
6 Rarity: Nevada State Rank S1  
7

8 The Moapa Warm Spring riffle beetle is endemic to the Warm Springs Area of Clark  
9 County, Nevada. Its global distribution is restricted to an area of approximately 988 acres  
10 (4 km<sup>2</sup>). It occurs in swift, shallow waters of freshwater outlet springs on gravel substrates,  
11 warm freshwater streams, and vegetated marshy areas. The beetle is often found near vegetation  
12 and bare tree roots. Preferred temperature ranges from 83 to 96°F (28 to 36°C). This reddish-  
13 brown, black, and greenish beetle feeds on aquatic plants and algae (NatureServe 2010).  
14

15 The Moapa Warm Spring riffle beetle is currently under review for listing under the ESA.

16  
17 Threats include alteration to habitat by human activity.  
18

19 The Moapa Warm Spring riffle beetle may occur in the affected area of the proposed Dry  
20 Lake SEZ.  
21

22  
23 **Mojave Gypsum Bee (*Andrena balsamorhizae*)**

24  
25 ESA Listing Status: Not Listed  
26 BLM Listing Status: Sensitive  
27 State Listing Status: Not Listed  
28 Rarity: Nevada State Rank S2  
29

30 The Mojave gypsum bee is an insect that is endemic to Nevada, where the species is  
31 restricted to gypsum soils associated with habitats of its single larval host plant, silverleaf sunray  
32 (*Enceliopsis argophylla*). Such habitats include warm desert shrub communities; dry, open,  
33 relatively barren areas on gypsum badlands; and volcanic gravels.  
34

35 The Mojave gypsum bee may occur in the affected area of the proposed Dry Lake SEZ.  
36  
37

38 **Mojave Poppy Bee (*Perdita meconis*)**

39  
40 ESA Listing Status: Not Listed  
41 BLM Listing Status: Sensitive  
42 State Listing Status: Not Listed  
43 Rarity: Nevada State Rank S2  
44

45 The Mojave poppy bee is an insect known only from Clark County, Nevada, where it is  
46 dependent on poppy plants (*Arctemocon* spp.). Such habitats include roadsides, washes, and

1 barren desert areas. The bee belongs to the complex of poppy specialists. It feeds on large-  
2 flowered poppy plants. Males are roughly 0.2 in. (5.0 mm) long with a dark green head, black  
3 legs with pale yellow stripes, and transparent colorless wings. Females are approximately  
4 0.27 in. (7 mm) long with similar coloring as males. Its flight period is from mid-April to early  
5 June.

6  
7 The Mojave poppy bee may occur in the affected area of the proposed Dry Lake SEZ.  
8  
9

10 **Oasis Valley Springsnail (*Pyrgulopsis micrococcus*)**

11  
12 ESA Listing Status: Under Review  
13 BLM Listing Status: Sensitive  
14 State Listing Status: Not Listed  
15 Rarity: Nevada State Rank S2  
16

17 The Oasis Valley springsnail is a freshwater mollusk endemic to the Amargosa River  
18 drainage and the Death, Panamint, and Saline Valleys in Inyo County, California, and Nye  
19 County, Nevada. The species occurs in small springs and stream outflows, where it is typically  
20 found on stone, travertine, and detritus. The springsnail has a globose to ovate-conic shell. It is  
21 small to medium-sized with 3.25 to 3.5 whorls.  
22

23 The Oasis Valley springsnail may occur in the affected area of the proposed Amargosa  
24 Valley SEZ.  
25  
26

27 **Pahranagat Naucorid (*Pelocoris shoshone shoshone*)**

28  
29 ESA Listing Status: Not Listed  
30 BLM Listing Status: Sensitive  
31 State Listing Status: Not Listed  
32 Rarity: Nevada State Rank S1  
33

34 The Pahranagat naucorid is an aquatic insect known to occur only in the Muddy and  
35 White River Basins in southern Nevada. It inhabits warm, quiet waters of spring-fed systems.  
36

37 The Pahranagat naucorid may occur in the affected area of the proposed Dry Lake SEZ.  
38  
39

40 **Point of Rocks Tryonia (*Tryonia elata*)**

41  
42 ESA Listing Status: Under Review  
43 BLM Listing Status: Not Listed  
44 State Listing Status: Not Listed  
45 Rarity: Nevada State Rank S1  
46

1 The Point of Rocks tryonia is a freshwater mollusk endemic to the Ash Meadows region  
2 of Nye County, Nevada. It is found at only two localities at Point of Rocks Springs. Within these  
3 habitats, the species is found on travertine mounds near spring outflows.  
4

5 The Point of Rocks Tryonia has a small to medium-sized, narrow-conic shell (0.1 in.  
6 [0.3 cm] long). The penial ornament consists of two distal and one basal papillae along the inner  
7 edge. It is distinguished from its congeners by the combination of its small size and narrow-conic  
8 shell, and because the brood pouch lacks a posteriorly folded component (Center for Biological  
9 Diversity 2009).  
10

11 The Point of Rocks tryonia may occur in the affected area of the proposed Amargosa  
12 Valley SEZ.  
13  
14

### 15 **Sporting Goods Tryonia (*Tryonia angulata*)**

16  
17 ESA Listing Status: Under Review  
18 BLM Listing Status: Not Listed  
19 State Listing Status: Not Listed  
20 Rarity: Nevada State Rank S1  
21

22 The sporting goods tryonia is a freshwater mollusk endemic to the Ash Meadows region  
23 of Nye County, Nevada, where it is known from only three springs: Fairbanks Spring, Big  
24 Spring, and Crystal Pool. Within these habitats, the species is found on soft substrates in thermal  
25 waters. The sporting goods tryonia is a fairly large-sized snail with an elongate conic shell. It has  
26 5 to 7 whorls, and the shell is colorless and transparent (Center for Biological Diversity 2009).  
27

28 The sporting goods tryonia may occur in the affected area of the proposed Amargosa  
29 Valley SEZ.  
30  
31

### 32 **Spring Mountains Springsnail (*Pyrgulopsis deaconi*)**

33  
34 ESA Listing Status: Not Listed  
35 BLM Listing Status: Sensitive  
36 State Listing Status: Not Listed  
37 Rarity: New Mexico State Rank S1; Nevada State Rank S1  
38

39 The Spring Mountains springsnail is endemic to freshwater springs of the Spring  
40 Mountains in the drainages of Las Vegas and Pahrump Valleys in Clark and Nye Counties of  
41 southern Nevada. In the Las Vegas Valley (Clark County), it occurs at Red Spring and Willow  
42 Spring. In the Pahrump Valley (Clark County), it occurs at Kiup Spring. Also in the Pahrump  
43 Valley (Nye County), it historically occurred in a spring at Manse Ranch, but it has been  
44 extirpated from that site.  
45

1 The Spring Mountains springsnail depends on artesian spring ecosystems with permanent  
2 flowing, unpolluted, highly oxygenated waters with high mineral content. Documented habitat  
3 characteristics include the presence of emergent vegetation, water depths between 1.5 and 2.7 in.  
4 (4 and 7 cm), and water temperatures between 63 and 68°F (17 and 20°C) (Center for Biological  
5 Diversity 2009).

6  
7 The Spring Mountains springsnail may occur in the affected area of the proposed Dry  
8 Lake SEZ.

### 9 10 11 **J.6.3 Fish**

#### 12 13 14 **Ash Meadows Amargosa Pupfish (*Cyprinodon nevadensis mionectes*)**

15  
16 ESA Listing Status: Endangered  
17 BLM Listing Status: Not Listed  
18 State Listing Status: Protected in Nevada  
19 Rarity: Nevada State Rank S2  
20

21 The Ash Meadows Amargosa pupfish is found in 10 spring areas within the Ash  
22 Meadows of Nye County, Nevada. Most of these springs are on public land within the Ash  
23 Meadows NWR (USFWS 2010a). Typical habitat consists of ephemeral pools, headwater spring  
24 pools, and outfall drainage and marshes that connect to the spring system. This species feeds  
25 mainly on blue-green algae and small invertebrates. It breeds throughout the year, with peaks in  
26 spring and early summer (NatureServe 2010).

27  
28 The Ash Meadows Amargosa pupfish was federally listed as endangered on  
29 September 28, 1983 (USFWS 1983). Critical habitat was also designated on this date within the  
30 Ash Meadows NWR.

31  
32 Threats to the species include competition and predation from introduced non-native  
33 species, channelization, water impoundment and diversion, groundwater pumping, pollution, and  
34 elimination of riparian vegetation (NatureServe 2010).

35  
36 The Ash Meadows Amargosa pupfish may occur in the affected area of the proposed  
37 Amargosa Valley SEZ.

#### 38 39 40 **Ash Meadows Speckled Dace (*Rhinichthys osculus nevadensis*)**

41  
42 ESA Listing Status: Endangered  
43 BLM Listing Status: Not Listed  
44 State Listing Status: Protected in Nevada  
45 Rarity: Nevada State Rank S1  
46

1 The Ash Meadows speckled dace, also known as the Nevada speckled dace, is endemic to  
2 spring systems and aquatic habitats formed by spring waters at Ash Meadows, in Nye County,  
3 Nevada. Although formerly more widespread in the area, the species is currently restricted to  
4 Jackrabbit Spring, Big Spring, the two westernmost springs of the Bradford Springs group, and  
5 the outflows of these springs. This dace is known to occur in headwater spring pools, spring  
6 outflow creeks (including areas of the creek up to a mile or more from their spring sources), and  
7 marshes formed by spring flows. The subspecies also occurs in irrigation ditches and canals that  
8 utilize the spring flows for irrigation. The Ash Meadows speckled dace appears to be rather  
9 general in its habitat requirements, utilizing areas with a rather fast stream current as well as  
10 quiet spring pools (NatureServe 2010).

11  
12 Speckled dace are typically omnivores. They often feed on bottom materials, including  
13 aquatic insect larvae, crustaceans, attached diatoms, snails, and algae. Some mid-water foods or  
14 even an occasional surface insect will be taken. Terrestrial insects that fall in the water may also  
15 be consumed. Speckled dace typically mature in their second summer. Spawning often occurs  
16 during the spring, but some spawning may take place all year, especially in spring habitats with a  
17 rather narrow range of temperatures. Speckled dace typically spawn on the gravel edge or riffles  
18 in stream habitats. Eggs hatch in approximately 6 days.

19  
20 Human development in the area consists primarily of small, scattered residences with  
21 which subsistence gardens, small orchards, or agricultural fields may be associated. During the  
22 early 1970s, a large farm began operating in Ash Meadows. Development of the farm involved  
23 the extensive removal of natural vegetation; land leveling; the construction of irrigation wells,  
24 ditches, and fences; and other activities necessary for commercial farming. The former major  
25 threats from dewatering and development were eliminated with the establishment of the Ash  
26 Meadows NWR. However, some of the spring outflows that were diverted into ditches in the  
27 past remain today.

28  
29 The Nevada speckled dace was federally listed as endangered on September 2, 1983  
30 (USFWS 1983). Critical habitat was also designated on this date.

31  
32 The primary threats to the Nevada speckled dace consist of habitat destruction and the  
33 effects of exotic fish introductions. Because of the acquisition of many spring areas by the  
34 USFWS, the major threats in the future will most likely consist of additional exotic species  
35 introductions rather than physical habitat alteration (NatureServe 2010).

36  
37 The Ash Meadows speckled dace may occur in the affected area of the proposed  
38 Amargosa Valley SEZ.

39  
40  
41 **Devil's Hole Pupfish (*Cyprinodon diabolis*)**

42  
43 ESA Listing Status: Endangered  
44 BLM Listing Status: Not Listed  
45 State Listing Status: Protected in Nevada  
46 Rarity: Nevada State Rank S1  
47

1 The Devil's Hole pupfish is a small species about 1 in. (2.5 cm) long that occurs in  
2 Devil's Hole in the Amargosa Valley of Nevada, located about 90 mi (149 km) northwest of  
3 Las Vegas (USFWS 1990). While this species is naturally restricted to Devil's Hole, the species  
4 has been introduced in artificial refugia at the Amargosa Pupfish Station in Ash Meadows and in  
5 facilities constructed by the Bureau of Reclamation located near the Hoover Dam. It lives only  
6 for 1 year or less and spawns between April and mid-June. Population levels vary from about  
7 125 to 550 individuals (USFWS 1990). The variation between spring and fall counts is a function  
8 of severe environmental conditions, low oxygen levels, and low sunlight during the winter  
9 months, which is a factor in algal production in the cavern. A population maintained within a  
10 refugium seems to survive longer and fluctuate less between spring and fall than does the natural  
11 population (USFWS 1990). Food of the pupfish includes algae and detritus obtained from the  
12 sides and bottom of the cavern.

13  
14 The Devil's Hole pupfish was federally listed as endangered on March 11, 1967  
15 (USFWS 1967). Critical habitat has not been designated for this species.

16  
17 The greatest threat to continued survival of the species is the small numbers existing in  
18 Devil's Hole. The presence of non-native snails is a threat if they are not controlled. These snails  
19 consume algae that the pupfish feed on and rely on for oxygen production (NatureServe 2010).

20  
21 The Devil's Hole pupfish may occur in the affected area of the proposed Amargosa  
22 Valley SEZ.

### 23 24 25 **Moapa Dace (*Moapa coriacea*)**

26  
27 ESA Listing Status: Endangered  
28 BLM Listing Status: Not Listed  
29 State Listing Status: Protected in Nevada  
30 Rarity: Nevada State Rank S1

31  
32 The Moapa dace is endemic to the warm spring area at the headwaters of the Moapa  
33 (Muddy) River, in northern Clark County, southeastern Nevada. It is restricted to 10 warm  
34 springs, their outflows, and the warm waters of the upper mainstream Muddy River. The velocity  
35 of the water flow is variable, but in many areas, it can be swift. Streamside vegetation is dense  
36 throughout most of the Moapa dace habitat, frequently forming a complete canopy over the  
37 stream and filling the channel with snags and brush. Streamside vegetation consists of ash  
38 (*Fraxinus* spp.), cottonwood (*Populus* spp.), screwbean mesquite (*Prosopis pubescens*), willow  
39 (*Baccharis* spp.), salt cedar, grape vines (*Vitis* spp.), and a variety of shrubs, grasses, and herbs  
40 (NatureServe 2010). The Moapa dace appears to be predominantly carnivorous and feeds on  
41 invertebrates and on lesser amounts of detritus and filamentous algae. Observation of feeding  
42 indicates that the species feeds relatively indiscriminately on organisms drifting with the current.  
43 Fish tend to congregate at dawn and dusk in swift water near snags and dash up into the current  
44 to pick off drift material passing by. Moapa dace will consume benthic invertebrates directly off  
45 the bottom in pool habitats. Larvae living in shallower, more slowly moving water probably feed  
46 on smaller micro-crustaceans.

1 Moapa dace can reproduce throughout the year in the nearly constant temperatures of  
2 their habitat. Peak reproduction probably occurs from February to April, followed by peak  
3 emigration of the young in May. This species has been observed spawning on sandy substrate in  
4 a water depth of 6 to 7.5 in. (15 to 19 cm) and a near-bed velocity of 0.1 to 0.3 ft/s (3 to 9 cm/s).

5  
6 The Moapa dace was federally listed as endangered on March 11, 1967 (USFWS 1967).  
7 Critical habitat has not been designated.

8  
9 The most important factor limiting the distribution and abundance of the Moapa dace  
10 within its former range was probably the turbidity caused by irrigation return flows into the  
11 formerly clear water. The feeding ability of the Moapa dace may have been severely curtailed by  
12 this increased turbidity. Other apparent reasons for the decline of the species include competitive  
13 interactions with introduced exotic species, parasites (commonly associated with aquarium fishes  
14 and introduced through these exotic fish), and declining water quality (chemical parameters and  
15 physical parameters) from channelization and irrigation for agricultural development. Future  
16 threats to the species include additional water development for irrigation or any activity that  
17 would increase the water turbidity, reduce the low gene pool, channelize the stream course, or  
18 add exotic species to the stream in the headwaters of the Muddy River (NatureServe 2010).

19  
20 The Moapa dace may occur in the affected area of the proposed Dry Lake SEZ.

21  
22  
23 **Moapa Speckled Dace (*Rhinichthys osculus moapae*)**

24  
25 ESA Listing Status: Under Review  
26 BLM Listing Status: Sensitive  
27 State Listing Status: Protected in Nevada  
28 Rarity: Nevada State Rank S1

29  
30 The Moapa speckled dace is one of several subspecies of the widely distributed speckled  
31 dace (*Rhinichthys osculus*). This species is endemic to the Muddy River of Clark County in  
32 southern Nevada, where its distribution is confined to the middle portion of the river. Preferred  
33 habitats include stream bottoms in shallow, low-velocity cobble riffles. The Moapa speckled  
34 dace is omnivorous, feeding primarily on algae, invertebrates, fish eggs, and detritus occurring  
35 on the surface or drifting within the water column. Populations have declined because of water  
36 depletions from diversions and groundwater pumping, as well as the introduction of non-native  
37 fish species (The Nevada Biodiversity Initiative 2008).

38  
39 The Moapa speckled dace may occur in the affected area of the proposed Dry Lake SEZ.

40  
41  
42 **Moapa White River Springfish (*Crenichthys baileyi moapae*)**

43  
44 ESA Listing Status: Under Review  
45 BLM Listing Status: Not Listed

1 State Listing Status: Protected in Nevada  
2 Rarity: Nevada State Rank S2

3  
4 The Moapa White River springfish is endemic to southern Nevada, where it is restricted  
5 to five warmwater springs in the upper Muddy River. This species prefers headwaters springs  
6 and spring pools with warmwater temperatures of (80 to 90°F [27 to 32 °C]) and low oxygen  
7 concentrations. Primary food items include filamentous algae and small aquatic invertebrates.  
8 Current levels of abundance and distribution have decreased because of habitat modifications,  
9 primarily dam construction and the introduction of non-native fish (The Nevada Biodiversity  
10 Initiative 2008).

11  
12 The Moapa White River springfish may occur in the affected area of the proposed Dry  
13 Lake SEZ.

14  
15  
16 **Oasis Valley Speckled Dace (*Rhinichthys osculus* ssp. 6)**

17  
18 ESA Listing Status: Under Review  
19 BLM Listing Status: Sensitive  
20 State Listing Status: Protected in Nevada  
21 Rarity: Nevada State Rank S1; USFWS Species of Concern

22  
23 The Oasis Valley speckled dace is a small fish species that is restricted to spring-fed  
24 habitats in the Oasis Valley, Nye County, Nevada. This species is primarily known from the  
25 Amargosa River in the Oasis Valley. There is little information published on this species.

26  
27 The Oasis Valley speckled dace may occur in the affected area of the proposed Amargosa  
28 Valley SEZ.

29  
30  
31 **Pahrump Poolfish (*Empetrichthys latos*)**

32  
33 ESA Listing Status: Endangered  
34 BLM Listing Status: Not Listed  
35 State Listing Status: Protected in Nevada  
36 Rarity: Nevada State Rank S1

37  
38 The Pahrump poolfish is a small omnivore that is about 2 in. (5 cm) long at maturity. It is  
39 endemic to the Pahrump Valley in southern Nye County, Nevada. After nearly becoming extinct,  
40 three populations were re-established at the following locations: Corn Creek Spring on the  
41 Desert NWR north of Las Vegas, Nevada; Shoshone Springs southeast of Ely, Nevada; and an  
42 irrigation reservoir located on the Spring Mountains Ranch State Park west of Las Vegas. No  
43 information was found on reproduction in this species.

44  
45 Prior to the loss of the Manse Spring population, the habitat consisted of water with a  
46 constant temperature of 76°F (24°C), with emergent vegetation in the shallow areas. Larger fish

1 used the open, deeper waters of the spring; juveniles were in the shallows with emergent  
2 vegetation.

3  
4 The Pahrump poolfish was federally listed as endangered on March 11, 1967  
5 (USFWS 1967). Critical habitat has not been designated for this species.

6  
7 The greatest threat to the re-introduced populations is competition and predation from  
8 other fish.

9  
10 The Pahrump poolfish may occur in the affected area of the proposed Dry Lake SEZ.

### 11 12 13 **Rio Grande Chub (*Gila pandora*)**

14  
15 ESA Listing Status: Not Listed

16 BLM Listing Status: Sensitive

17 State Listing Status: Colorado Species of Concern

18 Rarity: Colorado State Rank S1; New Mexico State Rank S2

19  
20 The Rio Grande chub is known from isolated areas in the Rio Grande drainage system in  
21 south-central Colorado, New Mexico, and western Texas. Formerly, this species was widespread  
22 in creeks of the upper Rio Grande and Pecos River watersheds. Currently, the distribution is  
23 reduced in the Pecos system, and the species is considered extirpated from the mainstem  
24 Rio Grande (USFS 2005). It is known to still occur in tributary streams and some impoundments.  
25 In Colorado, the species is currently only known from Hot Creek. It may be introduced  
26 elsewhere. The Rio Grande chub is estimated to occur in only 25% of its historic locations.

27  
28 The Rio Grande chub occurs in flowing pools of headwaters, creeks, and small rivers,  
29 often near inflow of riffles and in association with cover such as undercut banks, aquatic  
30 vegetation, and plant debris. It may be more associated with sandy substrates than with gravelly  
31 or rocky substrates (NatureServe 2010).

32  
33 Threats to this species include stream degradation and effects of non-native species  
34 (NatureServe 2010).

35  
36 The Rio Grande chub may occur in the affected areas of the proposed Antonito  
37 Southeast, De Tilla Gulch, and Los Mogotes East SEZs.

### 38 39 40 **Rio Grande Sucker (*Catostomus plebeius*)**

41  
42 ESA Listing Status: Not Listed

43 BLM Listing Status: Not Listed

44 State Listing Status: Endangered in Colorado

45 Rarity: Colorado State Rank S1; New Mexico State Rank S2

1 The Rio Grande sucker occupies a wide-ranging distribution from the Rio Grande basin  
2 in Colorado and New Mexico, south to the Rio Yaqui basin in Mexico. It has also been  
3 introduced into the Gila River basin in Arizona and New Mexico. It is restricted to pools, runs,  
4 and riffles of small to moderately large streams; usually over gravel and/or cobble. It also occurs  
5 in backwaters and pools below riffles. It rarely occurs in waters with heavy silt and organic  
6 detritus. Its diet includes diatoms, detritus, and benthic invertebrates found among rocks and  
7 boulders (NatureServe 2010).

8  
9 Threats to this species include hybridization and competition with the introduced white  
10 sucker (*Catostomus commersoni*). In some areas, populations may have been extirpated by the  
11 introduction of predaceous northern pike (*Esox lucius*) (NatureServe 2010).

12  
13 The Rio Grande sucker may occur in the affected areas of the proposed Antonito  
14 Southeast, De Tilla Gulch, and Los Mogotes East SEZs.

### 15 16 17 **Roundtail Chub (*Gila robusta*)**

18  
19 ESA Listing Status: Not Listed

20 BLM Listing Status: Sensitive

21 State Listing Status: Arizona Wildlife Species of Concern

22 Rarity: Nevada State Rank S1, Arizona State Rank S2; Utah State Rank S2;

23 USFWS Species of Concern  
24

25 The roundtail chub occupies a wide range in the Colorado River basin. It is known from  
26 larger tributaries in the Colorado Basin, from Wyoming south to Arizona, Nevada, New Mexico,  
27 as well as through the Rio Yaqui basin in Mexico. It historically occurred in the Little Colorado  
28 River basin but is now presumed extirpated from that basin. It is also presumed extirpated from  
29 the Zuni and San Francisco drainages in New Mexico. Populations in the Gila River basin in  
30 Arizona and New Mexico are recognized as a distinct species (headwater chub; *G. nigra*).

31  
32 The roundtail chub is a relatively large (10 to 14 in. [25 to 35 cm] long) minnow. Both  
33 sexes have an orange-red color on their ventrolateral surfaces and on all fins except their dorsal  
34 fin. This coloration becomes more intense among males during the breeding season. Spawning  
35 typically occurs from March to May. The roundtail chub occupies cool to warmwater streams  
36 and rivers consisting of pools adjacent to riffles and runs. It is an opportunistic forager,  
37 consuming available aquatic and terrestrial insects, gastropods, crustaceans, fish, and algae.

38  
39 Threats to this species include alterations of hydrology such as impoundment,  
40 channelization, sedimentation, water diversion, and groundwater pumping. The competition and  
41 predation by non-native species also poses risks to this species (NatureServe 2010).

42  
43 The roundtail chub may occur in the affected area of the proposed Gillespie SEZ.  
44  
45  
46

1 **Warm Springs Pupfish (*Cyprinodon nevadensis pectoralis*)**

2  
3 ESA Listing Status: Endangered  
4 BLM Listing Status: Not Listed  
5 State Listing Status: Protected in Nevada  
6 Rarity: Nevada State Rank S1  
7

8 The warm springs pupfish occupies six springs, outflow drainages, and marsh habitats in  
9 Ash Meadows, Nye County, Nevada. These springs are North Scruggs Springs, South Scruggs  
10 Springs, Marsh Springs, North Indian Springs, South Indian Springs, and School Springs. The  
11 characteristics of the habitat of the springs are fairly constant. Temperatures in the springs range  
12 from 86 to 91°F (30 to 33°C), and the pools are less than 4 ft (1.3 m) deep. *Chara* and *Spirogyra*  
13 are the common submerged plants; *Scirpus* and *Typha* make up most of the emergent vegetation.  
14 Salinity in these habitats is generally low. Little is known of the food habits of the warm springs  
15 pupfish, but it is thought to feed primarily on algae and detritus throughout the year.  
16

17 Reproduction occurs throughout the year at some springs and from February through  
18 September in both North and South Indian Springs. Several generations may be produced in a  
19 given year. Spawning habitat is in open water with soft silt or sandy substrate. Fry occupy  
20 shallow areas where algal growth is high.  
21

22 The warm springs pupfish was federally listed as endangered on October 13, 1970  
23 (USFWS 1970). No critical habitat is designated for this species.  
24

25 Threats to the species include competition and predation from introduced non-native fish  
26 species. Bullfrogs and crayfish are potential predators in much of the pupfish's habitat  
27 (NatureServe 2010).  
28

29 The warm springs pupfish may occur in the affected area of the proposed Amargosa  
30 Valley SEZ.  
31  
32

33 **J.6.4 Amphibians**

34  
35  
36 **Amargosa Toad (*Bufo nelsoni*)**

37  
38 ESA Listing Status: Under Review  
39 BLM Listing Status: Sensitive  
40 State Listing Status: Protected in Nevada  
41 Rarity: Nevada State Rank S2  
42

43 The Amargosa toad is a small toad that is endemic to a very small range (<40 mi<sup>2</sup>  
44 [100 km<sup>2</sup>]) in the Amargosa Valley in Nye County, Nevada. The species is confined to isolated  
45 riparian and spring-fed habitats along the Amargosa River. Amargosa toads require early-to-  
46 intermediate successional stage riparian habitats. Within these habitats, wetlands characterized

1 as being open, ponded, or flowing; having low, emergent vegetation along the edges; and partial  
2 canopy closure are necessary for breeding and population recruitment (USFWS 2010d). Other  
3 habitat components include burrows, debris piles, spaces under logs or rocks, and areas of dense  
4 vegetation that are utilized daily shelters. Foraging for spiders, insects, and scorpions occurs  
5 along the edges of wetlands as well as within adjacent upland areas (USFWS 2010d).  
6

7 The Amargosa toad was designated as a Category 1 Candidate species under the ESA in  
8 1982. In 1996, after a review of available scientific and commercial information, the USFWS  
9 determined that listing of the species was not warranted (USFWS 1996). In 2010, the USFWS  
10 responded to a 2008 petition to list the species with the determination that listing of the  
11 Amargosa toad is not warranted (USFWS 2010d). Despite its limited distribution, recent surveys  
12 indicate that the status of the Amargosa toad is relatively stable.  
13

14 The Amargosa Toad may occur in the affected area of the proposed Amargosa Valley  
15 SEZ.  
16

### 17 **Lowland Leopard Frog (*Lithobates yavapaiensis*)**

18 ESA Listing Status: Not Listed

19 BLM Listing Status: Sensitive (Arizona)

20 State Listing Status: Arizona Wildlife Species of Concern

21 Rarity: California Species of Concern; USFWS Species of Concern  
22  
23  
24

25 The lowland leopard frog occurs in a variety of natural and man-made aquatic systems.  
26 General habitat associations include small to medium-sized streams, rivers, channels, springs,  
27 ponds, and stock ponds within desertscrub, grassland, woodland, and pinyon-juniper habitats  
28 dominated by bulrushes, cattails, and riparian grasses near or under an overstory of Fremont  
29 cottonwoods (*Populus fremonti*) and willows and mesquite (*Prosopis* sp.). Selected sites are  
30 characterized as having a semipermanent to permanent hydrological cycle, a salinity range of  
31 6.0 to 9.0%, and a thermal range of 51.8 to 84.2°F (11 to 29°C) (AmphibiaWeb 2010). Within  
32 these communities, individuals select daily basking sites close to refugia in the form of emergent  
33 and perimeter vegetation, deep water, root masses, undercut banks, and debris piles. Foraging is  
34 also conducted within these sites, since a wide variety of insects and other arthropods make up  
35 this frog's diet (NatureServe 2010).  
36

37 The historic distribution of the lowland leopard frogs once extended discontinuously  
38 from Arizona and New Mexico in the south, west to California, and north to Nevada and Utah.  
39 Recent studies, however, indicate that habitat changes associated with agriculture, livestock  
40 grazing, development, reservoir construction, and exotic predatory species have caused this  
41 range to contract by nearly 50%. Populations of lowland leopard frogs are currently limited to  
42 Arizona and New Mexico at an elevation ranging from sea level to 5,961 ft (0 to 1,817 m).  
43

44 The lowland leopard frog was formerly a Category 2 candidate species under the ESA  
45 until the classification system was modified and subsequently removed from the list.  
46

1 The lowland leopard frog could occur in the affected areas of the proposed Brenda and  
2 Gillespie SEZs.  
3  
4

5 **Northern Leopard Frog (*Lithobates pipiens*)**  
6

7 ESA Listing Status: Under Review

8 BLM Listing Status: Sensitive

9 State Listing Status: Not Listed

10 Rarity: California State Rank S2; Nevada State Rank S2; New Mexico State Rank S2;  
11 Colorado Species of Concern  
12

13 The northern leopard frog requires a broad range of habitats in close proximity because of  
14 its complicated life history (Smith and Keinath 2007). Critical habitat types vary by season and  
15 life stage, and they tend to exhibit a high degree of site fidelity (Jennings and Hayes 1994).  
16 Breeding habitat consists of a variety of aquatic habitats, with preferred sites characterized as  
17 having a semipermanent to seasonal hydrological cycle; a shallow water depth (<7 ft [<2 m]); an  
18 areal extent of less than 20 acres (0.08 km<sup>2</sup>); abundant emergent vegetation dominated by  
19 cattails; an unconsolidated bottom; a low canopy cover (<30%); low salinity; and an absence of  
20 predatory fish (Smith and Keinath 2007). Following reproduction, adult and juvenile northern  
21 leopard frogs disperse into adjacent riparian habitat that is dominated by dense, relatively tall  
22 grasses or forbs and has a moist substrate, where they forage opportunistically for insects,  
23 arachnids, worms, and crustaceans (Jennings and Hayes 1994). Overwintering occurs beneath  
24 leaf litter or below logs or within ponds or flowing streams.  
25

26 The size of the home range of the northern leopard frog is determined by the spatial  
27 configuration of breeding and nonbreeding habitats across the landscape. This area typically  
28 encompasses a relatively small areal extent of 161 to 6,458 ft<sup>2</sup> (15 to 600 m<sup>2</sup>). Within these  
29 territories, individuals disperse from 16 to 26,247 ft (5 to 8,000 m) from natal ponds into  
30 terrestrial habitat, with juveniles making larger movements (>2,625 ft [>800 m]) than adults  
31 (<328 ft [<100 m]) (Jennings and Hayes 1994).  
32

33 Historically, the northern leopard frog was one of the most common and widespread  
34 anurans in North America, occurring from southern Canada, south to Pennsylvania and  
35 Kentucky, and west to the Pacific states. However, since the 1970s, this species has experienced  
36 significant declines and local extirpations throughout most of its range, particularly in the  
37 western states of California, Colorado, Montana, Idaho, eastern Washington, and Arizona  
38 (Smith and Keinath 2007).  
39

40 The western population of the northern leopard frog, including populations within  
41 California, Arizona, Colorado, Idaho, Iowa, Minnesota, Missouri, Montana, Nebraska, Nevada,  
42 New Mexico, North Dakota, Oregon, South Dakota, Texas, Utah, Washington, Wisconsin, and  
43 Wyoming, was petitioned for listing under the ESA on July 9, 2009. In response to that petition,  
44 the USFWS initiated a status review for this species on October 28, 2009, to determine whether  
45 listing is warranted (USFWS 2009a).  
46

1 The northern leopard frog could occur in the affected areas of the proposed Antonito  
2 Southeast and Los Mogotes East SEZs.

3  
4  
5 **Southwestern Toad (*Bufo microscaphus*)**

6  
7 ESA Listing Status: Under Review

8 BLM Listing Status: Sensitive

9 State Listing Status: Utah Species of Concern

10 Rarity: Nevada State Rank S2; Utah State Rank S2; USFWS Species of Concern

11  
12 The southwestern toad is associated with desert, pine-fir forest, and pine-oak woodlands  
13 at an elevational range of 480 to 8,400 ft (146 to 2,560 m) (AZGFD 2002). Within these natural  
14 communities, individuals occupy gravelly areas of permanent or intermittent streams, arroyos,  
15 and washes having sandy or rocky substrates, where both breeding and foraging of invertebrates  
16 occur.

17  
18 The southwestern toad has a scattered distribution along the headwaters and tributaries of  
19 the Colorado River from southwestern Utah, southern Nevada, central Arizona, southwestern  
20 New Mexico, and south into Mexico. Throughout its range, this species is locally common;  
21 however, population trends are currently declining (Hammerson and Schwaner 2004).

22  
23 The southwestern toad may occur in the affected areas of the proposed Dry Lake and  
24 Gillespie SEZs.

25  
26  
27 **J.6.5 Reptiles**

28  
29  
30 **Colorado Desert Fringe-Toed Lizard (*Uma notata*)**

31  
32 ESA Listing Status: Not Listed

33 BLM Listing Status: Sensitive (Arizona)

34 State Listing Status: Not Listed

35 Rarity: California State Rank S2

36  
37 The Colorado Desert fringe-toed lizard, an aeolian sand specialist, is restricted to sparsely  
38 vegetated areas with fine, loose, windblown sand, including dunes, flats, and riverbanks and  
39 washes of very arid desert (NatureServe 2010). Individuals establish home ranges that extend  
40 from 0.2 to 0.5 acres (0.001 to 0.002 km<sup>2</sup>) within areas that provide critical habitat components,  
41 including (1) access to sands on windward ends of small accretion dunes, and (2) sparse shrubs  
42 and annual vegetation that provide primary dietary resources (e.g., ants, beetles, true bugs,  
43 grasshoppers, and caterpillars) (Mayhew 1964). Preferred habitats generally occur within  
44 creosote scrub desert communities at elevations ranging from sea level to 1,600 ft (0 to 490 m).

1 The geographic distribution of the Colorado Desert fringe-toed lizard extends from  
2 extreme southeast California in the Colorado Desert from the Salton Sea and Imperial sand hills  
3 east to the Colorado River, south to the Colorado River delta, and on into extreme northeastern  
4 Baja California. The lizard's range extends west as far as the east base of Borrego Mountain.  
5

6 Specific estimates of population size are not known, but the lizard's status is considered  
7 relatively stable rangewide. However, recent investigations have suggested that many  
8 populations are vulnerable to, or have already undergone, local extirpation as a result of  
9 disruption to dune formation processes, OHVs, and increased predator populations  
10 (CaliforniaHerps 2010; Murphy et al. 2006; NatureServe 2010).  
11

12 The Colorado Desert fringe-toed lizard may occur within the affected area of the  
13 proposed Imperial East SEZ.  
14  
15

### 16 **Desert Tortoise (*Gopherus agassizii*)**

17

18 ESA Listing Status: Threatened (Mojave Desert populations);  
19 Candidate (Sonoran populations)

20 BLM Listing Status: Sensitive (Arizona)

21 State Listing Status: Arizona Wildlife Species of Concern; Threatened in California

22 Rarity: None  
23

24 The desert tortoise occurs in desert regions of the southwestern United States and  
25 northwestern Mexico. Within the six-state study area, it occurs in portions of Arizona,  
26 California, Nevada, and Utah. Populations of this species are found in the Mojave and Sonoran  
27 Deserts. The Mojave population, which includes desert tortoises north and west of the Colorado  
28 River, is currently listed as threatened under the ESA. The Sonoran population, which occurs  
29 south and east of the Colorado River, is currently a candidate for listing under the ESA.  
30

31 Within the varied plant communities of the Mojave and Sonoran Desert regions, desert  
32 tortoises can potentially survive and reproduce where their basic habitat requirements are met.  
33 These requirements include sufficient suitable plants for forage and cover and suitable substrates  
34 for burrow and nest sites. Desert tortoises occur primarily on flats and bajadas that have soils  
35 ranging from sand to sandy-gravel and that are characterized by scattered shrubs and abundant  
36 inter-shrub space for growth of herbaceous plants. Desert tortoises are also found on rocky  
37 terrain and slopes in parts of the Mojave and Sonoran Desert regions. There is substantial  
38 geographic variation in the way tortoises use available resources. Desert tortoises spend much of  
39 their lives in burrows; they emerge to feed and mate during late winter and early spring. They  
40 typically remain active through the spring, and they sometimes emerge again after summer  
41 storms. During these activity periods, desert tortoises eat a wide variety of herbaceous plants,  
42 particularly grasses and the flowers of annual plants. Desert tortoises exhibit delayed maturity  
43 and live long lives. Females typically create a nest under a large shrub or at a burrow entrance  
44 and lay from 2 to 14 eggs from May to July (UDWR 2010). Adults are well protected against  
45 most predators (apart from humans) and other environmental hazards. During hibernation,  
46 several individuals often occupy the same burrow (UDWR 2010). Their longevity helps

1 compensate for their variable annual reproductive success, which is correlated with  
2 environmental conditions.

3  
4 Several factors have led to declining populations of the desert tortoise. Reductions in  
5 tortoise numbers have been attributed to direct and indirect human-caused mortality, coupled  
6 with the inadequacy of existing regulatory mechanisms to protect desert tortoises and their  
7 habitat. Impacts, such as the destruction, degradation, and fragmentation of habitat, result from  
8 urbanization, agricultural development, livestock grazing, mining, and roads. In addition, an  
9 upper respiratory tract disease is an additional major cause of mortality and population decline,  
10 particularly in the western Mojave Desert. Predators that prey on adult desert tortoises include  
11 the coyote (*Canis latrans*), kit fox (*Vulpes macrotis*), raccoon (*Procyon lotor*), bobcat (*Felis*  
12 *rufus*), badger (*Taxidea taxus*), and feral dog (*Canis familiaris*). Predators of tortoise eggs and  
13 young include the common raven (*Corvus corax*), gila monster (*Heloderma suspectum*), snakes,  
14 roadrunner (*Geococcyx californianus*), red-tailed hawk (*Buteo jamaicensis*), and American  
15 badger (*Taxidea taxus*). (USFWS 2008a).

16  
17 The Mojave population of desert tortoise (including any Sonoran Desert tortoises that are  
18 outside their normal range) was federally listed as threatened on April 2, 1990. On February 8,  
19 1994, the USFWS designated approximately 6.4 million acres (25,900 km<sup>2</sup>) of desert as critical  
20 habitat for this species. The Mojave population was listed in response to precipitous declines in  
21 desert tortoise numbers in many areas.

22  
23 Mojave populations of the desert tortoise, listed as threatened under the ESA, may occur  
24 in the affected areas of the proposed Amargosa Valley, Dry Lake, Dry Lake Valley North, and  
25 Riverside East SEZs. Sonoran populations of the desert tortoise, currently considered as a  
26 candidate for listing under the ESA, may occur in the affected areas of the proposed Brenda and  
27 Gillespie SEZs.

### 30 **Flat-Tailed Horned Lizard (*Phrynosoma mcallii*)**

31  
32 ESA Listing Status: Not Listed  
33 BLM Listing Status: Sensitive (California)  
34 State Listing Status: Arizona Wildlife Species of Concern  
35 Rarity: Arizona State Rank S2; California State Rank S2

36  
37 The flat-tailed horned lizard is confined to dunes, sandy hills and washes, badlands, and  
38 salt flats within desertscrub communities. It occurs at an elevational range of 0 to 1,606 ft (0 to  
39 520 m) primarily on fine, windblown silica sand deposits, with gravelly soils utilized to a lesser  
40 extent. White bursage (*Ambrosia dumosa*), indigo bush (*Dalea emoryi*), saltbush (*Atriplex*  
41 *canescens* and *A. polycarpa*), and big galleta grass (*Pleuraphis rigida*) are highly correlated to  
42 high species density, presumably for their ability to trap windblown sand and provide shade for  
43 thermal cover (Flat-Tailed Horned Lizard Interagency Coordinating Committee 2003). Home  
44 ranges encompass a spatial extent of 0.5 to 8.8 acres (0.02 to 0.4 km<sup>2</sup>) and coincide closely with  
45 the presence of the lizard's primary prey item, harvester ants (*Pogonomyrex californicus*).

1 The geographic distribution of the flat-tailed lizard is the most limited of any horned  
2 lizard species in the United States; its range is in the extreme southwestern corner of Arizona, the  
3 southeastern corner of California, and adjoining portions of Sonora and Baja California, Mexico.  
4 Populations occur in (1) southwestern Yuma County south of the Gila River and west of the  
5 Butler and Gila Mountains of Arizona, and (2) Imperial, Riverside, and San Diego Counties in  
6 California, where they are experiencing slight to moderate declines, respectively (AZGFD 2010;  
7 CaliforniaHerps 2010; NatureServe 2010).  
8

9 The USFWS originally proposed listing the flat-tailed horned lizard as a threatened  
10 species on November 29, 1993. The proposal was withdrawn in 1997, challenged, and later  
11 reinstated in 2002. After an extensive comment period and data review, the USFWS again  
12 withdrew the proposed listing in 2003. Following additional challenges against the withdrawal of  
13 the proposed rule, the USFWS reinstated the proposed rule to list this species as threatened under  
14 the ESA on March 2, 2010 (USFWS 2010b). On March 15, 2011, the USFWS determined that  
15 listing of the flat-tailed horned lizard was not warranted and withdrew the proposal  
16 (USFWS 2011).  
17

18 The flat-tailed horned lizard could occur in the affected area of the proposed Imperial  
19 East SEZ.  
20  
21

## 22 **Gila Monster (*Heloderma suspectum*)**

23  
24 ESA Listing Status: Not Listed

25 BLM Listing Status: Sensitive

26 State Listing Status: Protected in Nevada

27 Rarity: California State Rank S1; Utah State Rank S1; Nevada State Rank S2;

28 USFWS Species of Concern  
29

30 The gila monster is a large-bodied venomous lizard that primarily inhabits desertscrub  
31 habitats along low mountain slopes or rocky canyons dominated by paloverde, saguaro, willow,  
32 mesquite, salt cedar, and mulefat. Thorn scrub, riparian, xero-riparian, desert grassland, and oak  
33 woodland plant associations are also utilized, however, but to a lesser extent. Within these  
34 communities, gila monsters establish home ranges (14.8 to 363.2 acres [0.06 to 1.5 km<sup>2</sup>]) that  
35 encompass spring, summer, and winter shelters. They spend the majority of their time within  
36 these shelters and exhibit high site-fidelity toward them (Beck and Jennings 2003; Beck 2005).  
37 Boulder piles, rock crevices, tortoise burrows, or woodrat (*Neotoma lepida*) mounds serve as  
38 such shelters and are selected based on specific internal structural and micro-environmental  
39 attributes.  
40

41 The gila monster is an opportunistic carnivore; nestling birds, rodents, small rabbits,  
42 squirrels, lizards, as well as bird and reptile eggs, are common prey items (CDFG 2010). This  
43 species apparently takes almost anything on the surface, underground, or in low bushes.  
44

45 The geographic distribution of the gila monster extends broadly throughout the  
46 southwestern United States and northwestern Mexico at an elevational range of sea level to more

1 than 3,937 ft (1,200 m). However, despite the availability of visually similar habitat types, this  
2 species is rare in California and is confined to the Mojave and Colorado Deserts east of  
3 116° longitude (Lovich and Beaman 2007). Such a sporadic and scattered distribution may be the  
4 result of a number of factors, including (1) gila monsters are a relict population in California;  
5 (2) the requirement of a biphasic climate; or (3) a low availability of shelters within the state, as  
6 the occurrence and persistence of this subterranean species is dictated by its ability to find  
7 suitable refugia. Specific estimates of population size are not known because of its fossorial  
8 tendencies, but its status is apparently declining rangewide because of overcollection and habitat  
9 loss (NatureServe 2010).

10  
11 The gila monster may occur in the affected areas of the proposed Brenda, Dry Lake, and  
12 Gillespie SEZs.

### 13 14 15 **Milk Snake (*Lampropeltis triangulum*)**

16  
17 ESA Listing Status: Not Listed  
18 BLM Listing Status: Sensitive (Colorado)  
19 State Listing Status: Not Listed  
20 Rarity: Not Listed

21  
22 The milk snake is a widely distributed species with a total of 25 subspecies known from  
23 the snake's geographical range. Each is distinguished by slight color variations and habitat  
24 affinities. Of these subspecies, two occur in Colorado: *L. t. taylori* and *L. t. gentilis*. Milk snakes  
25 of these subspecific groups use a variety of rocky grassland and shrubland habitat types,  
26 including scrub, shortgrass prairie, sagebrush desert, and pinyon-juniper woodland communities.  
27 Individuals select microhabitats with limestone or igneous outcroppings on hillsides, canyons,  
28 river valleys, and high plains at elevations primarily below 8,000 ft (2,440 m), where they  
29 generally remain concealed within rock crevices or beneath debris.

30  
31 Geographically, milk snakes range throughout much of the continental United States,  
32 with a species presence in Colorado that occurs in Conejos County in the West. Accurate  
33 information on its population status within the states is not known because of the snake's  
34 fossorial and nocturnal behavior.

35  
36 The milk snake could occur in the affected areas of the proposed Antonito Southeast and  
37 Los Mogotes East SEZs.

### 38 39 40 **Mojave Fringe-Toed Lizard (*Uma scoparia*)**

41  
42 ESA Listing Status: Not Listed  
43 BLM Listing Status: Sensitive (Arizona and California)  
44 State Listing Status: Arizona Wildlife Species of Concern  
45 Rarity: Arizona State Rank S1  
46

1 The Mojave fringe-toed lizard, an aeolian sand specialist, is restricted to sparsely  
2 vegetated areas with fine, loose, windblown sand, including dunes, flats, and riverbanks and  
3 washes of very arid desert (NatureServe 2010). Individuals establish home ranges that extend  
4 from 0.2 to 0.5 acres (0.001 to 0.002 km<sup>2</sup>) within areas that provide critical habitat components,  
5 including (1) access to sands affording adequate nesting opportunities as well as a gradient of  
6 solar and temperature conditions needed to maintain an optimal thermal preferenda of 99.5°F  
7 (37.5°C), and (2) sparse shrubs and annual vegetation that provide primary dietary resources  
8 (e.g., seeds, flowers, grasses, and insects) (Mayhew 1964). Preferred habitats generally occur  
9 within creosote scrub desert communities at an elevation ranging from sea level to 3,002 ft (0 to  
10 915 m).

11  
12 The geographic distribution of the Mojave fringe-toed lizard ranges discontinuously in  
13 the Mojave Desert, from Death Valley south to the Colorado River near Blythe, California, and  
14 extreme southwestern Arizona, where it occurs as small, scattered populations. Specific  
15 estimates of population size are not known; however, recent investigations have suggested that  
16 many populations are vulnerable to, or have already undergone, local extirpation (Murphy et al.  
17 2006).

18  
19 The Amargosa River Population of the Mojave fringe-toed lizard, which occurs in  
20 portions of San Bernardino County, California, was petitioned for listing under the ESA on  
21 April 10, 2006. In response to that petition, the USFWS initiated a status review for this species  
22 to determine whether listing is warranted on January 10, 2008 (USFWS 2008b). However,  
23 populations under review for listing under the ESA do not occur in the vicinity of any of the  
24 SEZs.

25  
26 The Mojave fringe-toed lizard could occur in the affected area of the proposed Riverside  
27 East SEZ.

### 30 **Rosy Boa (*Charina trivirgata*)**

31  
32 ESA Listing Status: Not Listed  
33 BLM Listing Status: Sensitive (Arizona and California)  
34 State Listing Status: Not Listed  
35 Rarity: California State Rank S2  
36

37 The rosy boa is one of two boid species native to the United States. It is a heavy-bodied  
38 snake with smooth, shiny scales and a blunt but tapered tail that is primarily crepuscular in  
39 nature. As a saxicolous species, the rosy boa is strongly associated with rocky habitats, including  
40 deserts, canyons, and arid scrublands. Individuals have well-defined, stable home ranges  
41 averaging 4.0 acre (0.02 km<sup>2</sup>) in size, and a moderate level of site fidelity is displayed  
42 (Diffendorfer et al. 2005). Within these areas, microhabitats characterized as having a moderate  
43 to high density of vegetation and rocks, available intermittent or permanent water, and a southern  
44 exposure at elevations from sea level to 6,791 ft (0 to 2,070 m) are preferred. The diet of the rosy  
45 boa includes such prey items as rodents, small birds, lizards, snakes, and amphibians  
46 (NatureServe 2010).

1 The geographic distribution of the rosy boa extends from southern California and  
2 southwestern Arizona, where it occurs in scattered populations. There are two special status  
3 subspecies of rosy boa that may occur within the affected areas of the SEZs—desert rosy boa  
4 (*C. t. gracia*) and Mexican rosy boa (*C. t. trivirgata*). Specific estimates of population size are  
5 not known because of the boa’s fossorial and nocturnal tendencies. Its status, however, is  
6 apparently secure rangewide, although overcollection and road mortality have resulted in some  
7 local population declines.  
8

9 The desert rosy boa may occur within the affected area of the proposed Riverside East  
10 SEZ. The Mexican rosy boa may occur within the affected area of the proposed Gillespie SEZ.  
11  
12

### 13 **Tucson Shovel-Nosed Snake (*Chionactis occipitalis klauberi*)**

14  
15 ESA Listing Status: Candidate  
16 BLM Listing Status: Sensitive  
17 State Listing Status: Not Listed  
18 Rarity: Arizona State Rank S1  
19

20 The Tucson shovel-nosed snake is a small, nocturnal species which, with its shovel-  
21 shaped head, valved nostrils, flattened ventral side, and smooth scales, is highly adapted to a  
22 subterranean existence. Accordingly, it is strongly associated with deserts, dunes, washes, and  
23 sandy flats of creosote-mesquite floodplain habitats. The species is usually found near sandy  
24 washes, dunes, or bajadas. Individuals establish home ranges encompassing a spatial extent of  
25 5 acres (0.02 km<sup>2</sup>) within which movements away from refugia rarely exceed 30.5 m (100 ft).  
26 Utilized sites are characterized as being sparsely vegetated and composed of soft, sandy loam  
27 substrates devoid of large rocks or stones (AZGFD 2010). The diet of the Tucson shovel-nosed  
28 snakes forage consists primarily of scorpions, centipedes, spiders, ants, beetles, cockroaches, and  
29 moths (NatureServe 2010).  
30

31 Historic geographic distribution of the Tucson shovel-nosed snake extended from  
32 Maricopa and Pinal Counties in the north and south to Pima County. However, severe habitat  
33 loss has caused local population declines, thereby reducing its current range to southwestern  
34 portions of Pinal County and eastern Maricopa County (USFWS 2010e).  
35

36 The Tucson shovel-nosed snake was petitioned for listing under the ESA on  
37 December 15, 2004. In response to that petition on July 29, 2008, the USFWS initiated a status  
38 review for this species to determine whether listing is warranted (USFWS 2010e).  
39

40 The Tucson shovel-nosed snake may occur in the affected area of the proposed Gillespie  
41 SEZ.  
42  
43  
44

1 **J.6.6 Birds**

2  
3  
4 **American Peregrine Falcon (*Falco peregrinus anatum*)**

5  
6 ESA Listing Status: Not Listed

7 BLM Listing Status: Sensitive

8 State Listing Status: Arizona Wildlife Species of Concern; Threatened in New Mexico

9 Rarity: Colorado State Rank S2; New Mexico State Rank S2;

10 Colorado and USFWS Species of Concern

11  
12 The American peregrine falcon has reoccupied much of its historic habitat in  
13 New Mexico, California, and Arizona, where it occurs in mountainous regions in the summer or  
14 year-round. The falcons breed throughout North America south of the arctic tundra, in the Sea of  
15 Cortez region and the Central Plateau in Mexico, and in the southern Appalachian Mountains. It  
16 migrates to the Caribbean and South America in winter. The falcons nest along cliffs in forested  
17 areas near water and bluffs and in urban areas on buildings next to large grasslands, meadows,  
18 and lakes, where these predators can hunt. They use a wide variety of habitat and may be found  
19 at elevations ranging from 3,500 to 9,000 ft (1,070 to 2,740 m) (NMDGF 2010).

20  
21 American peregrine falcons are carnivores and eat primarily birds like jays, woodpeckers,  
22 swifts, mourning doves, and pigeons. They also occasionally feed on bats, small mammals, and  
23 reptiles. Reproduction begins at 3 years of age. The falcons are monogamous and mate for life;  
24 they perform elaborate courtship displays from April to June. Clutches of 3 to 4 eggs are  
25 incubated for 28 days and fledged 35 to 42 days after hatching, with fledgling success ranging  
26 from 0.7 to 1.5 young (NMDGF 2010).

27  
28 The American peregrine falcon was federally listed as endangered in 1970 following  
29 drastic population declines coinciding with the spread of DDT (dichlorodiphenyltrichloroethane)  
30 application. Populations rebounded following bans on the use of DDT, and the species was  
31 delisted in 1999. It was listed as a federal species of concern by the USFWS in 2007.

32  
33 Present threats include pesticide poisoning, low breeding density, reproductive isolation,  
34 lack of gene flow between isolated populations, and reduction in foraging habitat and the  
35 availability of avian prey.

36  
37 This species may occur within the affected areas of the proposed Afton, Antonito  
38 Southeast, Brenda, De Tilla Gulch, Fourmile East, and Los Mogotes East SEZs (NMDGF 2010).

39  
40  
41 **American White Pelican (*Pelecanus erythrorhynchos*)**

42  
43 ESA Listing Status: Not Listed

44 BLM Listing Status: Sensitive

45 State Listing Status: Not Listed

1 Rarity: Colorado State Rank S1; Utah State Rank S1; Nevada State Rank S2;  
2 USFWS Species of Concern  
3

4 The American white pelicans of North America are divided into two populations, roughly  
5 separated by the Continental Divide (BLM 2004). This species occurs primarily throughout the  
6 Canadian and U.S. prairies, patchily south and west through the Intermountain West, reaching  
7 their southwestern limit in southern Oregon, northeastern California, and western Nevada. Their  
8 winter range encompasses the Pacific Coast and lowlands from central California and southern  
9 Arizona south through Baja California and west Mexico to Nicaragua, and from Florida and the  
10 Gulf states south through the Gulf Coast and central plateau of Mexico to the northern Yucatán  
11 Peninsula. American white pelicans inhabit shallow ponds, marshes, and low, bare islands of  
12 large inland lakes. Within such areas, this highly gregarious species congregates in large flocks  
13 of 100 individuals or more to breed and loaf on the banks or shallows (BLM 2004). Nests are  
14 typically a mound of earth approximately 3 ft (1 m) across with a central, unlined hollow  
15 (BLM 2004). They are constructed on muddy, sandy, or rocky shores having a flat to moderate  
16 slope and in either in open or short, shrubby situations (Shuford and Gardali 2008).  
17

18 American white pelicans are highly mobile and participate in both daily and seasonal  
19 migratory movements. Within the breeding season, radiotelemetry studies indicate that  
20 individuals may disperse greater than 280 mi (450 km) to foraging sites (Shuford and Gardali  
21 2008). Seasonally, breeding populations migrate south to winter ranges in the southern states and  
22 Mexico.  
23

24 The American white pelican may occur in the affected areas of the proposed Fourmile  
25 East and Milford Flats South SEZs.  
26

## 27 **Bald Eagle (*Haliaeetus leucocephalus*)** 28

29 ESA Listing Status: Threatened (Sonoran populations); Delisted elsewhere  
30

31 BLM-Sensitive Status: Sensitive  
32

33 State Status: Arizona Wildlife Species of Concern; Threatened in Colorado;  
34 Threatened in New Mexico; Protected in Nevada  
35

36 Rarity: Colorado State Rank S1; New Mexico State Rank S1; Nevada State Rank S1;  
37 Utah State Rank S1; USFWS Species of Concern (all populations but Sonoran);  
38 Utah Species of Concern  
39

40 The bald eagle ranges throughout much of North America and nests on both coasts—  
41 from Florida to Baja California, Mexico, in the south; and from Labrador to the western Aleutian  
42 Islands, Alaska, in the north. Within this range, bald eagles are absent as breeding birds in most  
43 of the Great Basin, the prairie and plains region, and the eastern United States west of the  
44 Appalachian Mountains. It occurs in all states in the six-state study area.  
45

46 The bald eagle is a bird of aquatic ecosystems, which frequents estuaries, large lakes,  
major rivers, and some seacoast habitats. The species may also use prairies if adequate food is  
available. To support bald eagles, these areas must provide an adequate food base, perching areas

1 near the shoreline, and suitable nesting sites. Fish is the major component of the bald eagle's  
2 diet, but waterfowl, seagulls, and carrion are also eaten. In winter (defined as the non-nesting  
3 period), bald eagles often congregate at specific wintering sites that are close to open water and  
4 offer good perch trees, night roosts, and an abundance of shallow-water fish or waterfowl as  
5 prey. Large concentrations of eagles are often observed at salmon spawning rivers.  
6

7 Nest sites are usually in large trees along shorelines, in relatively remote areas that are  
8 free of disturbance. Trees must be sturdy and open to support bald eagle nests, which are often  
9 5 ft (1.5 m) wide and 3 ft (0.9 m) deep. The nesting season lasts about 6 months. Breeding times  
10 for bald eagles vary by elevation as well as by latitude; mating occurs in late September through  
11 November in the south, in January through March in the central states, and in late March to early  
12 April in Alaska. Adults tend to use the same breeding areas year after year, and often use the  
13 same nest, although a breeding area may include one or more alternate nest(s).  
14

15 The decline of bald eagles in most of the United States was caused by a combination of  
16 hunting, a decline in major prey species, and DDT usage. Since a recovery program for the  
17 species was established in the mid-1970s, the bald eagle population has increased in number and  
18 expanded in range. This improvement is attributable to the banning of DDT and other persistent  
19 organochlorides, habitat protection, and other recovery efforts.  
20

21 The bald eagle was once federally listed as endangered in all of the lower 48 states  
22 (March 11, 1967), with the exception of Michigan, Minnesota, Wisconsin, Washington, and  
23 Oregon, where it was designated as threatened. It has since been delisted due to recovery in all  
24 populations (72 FR 37345, 73 FR 23966, 76 FR 54711). Recently, a finding by the USFWS  
25 indicated that listing for the Sonoran population of the bald eagle (those residing in specific  
26 portions of Arizona) is not warranted (75 FR 8601). Critical habitat for this species has not been  
27 designated.  
28

29 Populations of bald eagle that are delisted from the ESA may occur in the affected areas  
30 of the proposed Afton, Antonito Southeast, De Tilla Gulch, Escalante Valley, Fourmile East,  
31 Los Mogotes East, Milford Flats South, and Wah Wah Valley SEZs.  
32

### 33 **Barrow's Goldeneye (*Bucephala islandica*)**

34  
35  
36 ESA Listing Status: Not Listed  
37 BLM Listing Status: Sensitive (Colorado)  
38 State Listing Status: Threatened in New Mexico  
39 Rarity: Colorado State Rank S2; New Mexico State Rank S2  
40

41 The Barrow's goldeneye winters on lakes, rivers, estuaries, and bays and is often seen in  
42 large flocks. The species will nest in wooded or open country near a lake or pond that is  
43 surrounded by dense vegetation. It nests in natural tree or rock cavities, abandoned woodpecker  
44 holes, or on stream banks, and will often nest in the same area in successive years. In summer,  
45 the species is found in small, scattered groups. The Barrow's goldeneye forages for aquatic

1 insects, crustaceans, some plant food, small fishes, and fish eggs in freshwater, and feeds on  
2 mollusks, seastars, and marine worms in saltwater (NatureServe 2010).

3  
4 The Barrow's goldeneye is a winter resident within the San Luis Valley. The Barrow's  
5 goldeneye may occur in the affected areas of the proposed Antonito Southeast, De Tilla Gulch,  
6 and Fourmile East SEZs.

7  
8  
9 **Bell's Vireo (*Vireo bellii*)**

10  
11 ESA Listing Status: Not Listed  
12 BLM Listing Status: Sensitive (New Mexico)  
13 State Listing Status: Threatened in New Mexico  
14 Rarity: New Mexico State Rank S2; USFWS Species of Concern  
15

16 The Bell's vireo breeds from southern California, the Southwest, and the central Great  
17 Plains and adjacent Midwest to northern Mexico. Within New Mexico, it occurs in the lower  
18 Gila Valley, Guadalupe Canyon, lower San Francisco Valley, and Hidalgo and Eddy Counties. It  
19 winters in central and South America. Its habitat includes dense shrublands or woodlands along  
20 lower-elevation riparian areas among willows, scrub oak, and mesquite; annual grasslands;  
21 desertscrub; and marshes. The species may potentially nest in any successional stage with dense  
22 understory vegetation (NMDGF 2010).

23  
24 The Bell's vireo feeds mostly on hemipterans, lepidopterans, orthopterans, coleopterans,  
25 and hymenopterans, although the birds will consume lesser amounts of snails, spiders, dipterans,  
26 and plants. They breed from May to July, laying three to five eggs per clutch (NMDGF 2010).

27  
28 Natural threats include heavy cowbird parasitism, severe weather, and predation.  
29 Anthropogenic threats include livestock grazing, agricultural pesticides, and loss of habitat from  
30 urbanization, flood control, and reservoir construction. Populations have declined in  
31 New Mexico, likely due to extensive habitat destruction. Currently, the species is listed as  
32 threatened by the State of New Mexico and ranked S2 in New Mexico and is a USFWS species  
33 of concern.

34  
35 The Bell's vireo may occur within the affected area of the proposed Afton SEZ  
36 (NMDGF 2010).

37  
38  
39 **Bendire's Thrasher (*Toxostoma bendirei*)**

40  
41 ESA Listing Status: Not Listed  
42 BLM Listing Status: Sensitive  
43 State Listing Status: Not Listed  
44 Rarity: Not Listed  
45

1 The Bendire's thrasher is a small neotropical migrant bird that is a summer breeding  
2 resident in southern California. It is closely associated with flat areas of Mohave desertscrub and  
3 Joshua tree habitats (CDFG 2010). These areas serve as both breeding and foraging grounds and  
4 are characterized as having scattered stands of thorny shrubs and cactus for cover as well as hard,  
5 firmly packed dirt substrates, whereas steep slopes and rocky terrain are generally avoided.  
6 Dominant vegetative components include Joshua tree, Spanish bayonet (*Yucca baccata*), Mohave  
7 yucca (*Yucca schidigera*), and cholla cacti (*Opuntia* spp.). Nests are erected 0.5 to 20 ft (0.2 to  
8 6 m) above ground level within cholla, yucca, paloverde, thorny shrub, or small trees  
9 (CDFG 2010).

10  
11 The breeding range of the Bendire's Thrasher has patchy distribution within the Colorado  
12 and Mohave Deserts, encompassing southern Nevada, Utah, and Colorado south through  
13 southeastern California, Arizona, and western New Mexico to Sonora, northern Sinaloa, and  
14 extreme northern Chihuahua, Mexico. The winter range includes southern Arizona, southwestern  
15 New Mexico, or Mexico (CDFG 2010).

16  
17 There is little information regarding the abundance of the Bendire's thrasher; however,  
18 what is known is that populations are small, disjunct, and isolated, all of which serve to increase  
19 their vulnerability to anthropogenic threats (England and Laudenslaver 1989).

20  
21 The Bendire's thrasher may occur in the affected area of the proposed Riverside East  
22 SEZ.

### 23 24 25 **California Black Rail (*Laterallus jamaicensis coturniculus*)**

26  
27 ESA Listing Status: Not Listed

28 BLM Listing Status: Sensitive

29 State Listing Status: Arizona Wildlife Species of Concern; Threatened in California  
30 (California Fully Protected)

31 Rarity: Arizona State Rank S1; California State Rank S1; USFWS Species of Concern

32  
33 The California black rail is a small, wetland bird that inhabits coastal and freshwater  
34 marshes of southern California and western Arizona. This species is dependent upon upper zones  
35 of tidal emergent wetlands dominated by common threesquare (*Schoenoplectus pungens*),  
36 pickleweed, arrow weed (*Pluchea sericea*), rush (*Juncus effusus* and *J. balticus*), and cattail  
37 (CDFG 2010). Occupied site characteristics include high vegetation density, close proximity to  
38 open water, low human disturbance, and surrounded by open grassland, pastures, or oak  
39 savannas.

40  
41 California black rails are insectivorous and glean isopods, insects, and other arthropods  
42 from the surface of mud and vegetation. Populations establish nonoverlapping home ranges.  
43 However, they do perform limited local movements away from wetlands in late summer and  
44 autumn (CDFG 2010).

1 The California black rail may occur in the affected area of the proposed Imperial East  
2 SEZ.

3  
4  
5 **Ferruginous Hawk (*Buteo regalis*)**

6  
7 ESA Listing Status: Not Listed

8 BLM Listing Status: Sensitive

9 State Listing Status: Arizona Wildlife Species of Concern

10 Rarity: Arizona State Rank S2; California State Rank S2; New Mexico State Rank S2;

11 Nevada State Rank S2; Utah State Rank S2; Colorado Species of Concern;

12 USFWS Species of Concern

13  
14 The ferruginous hawk is known to occur throughout the western United States. This  
15 species inhabits open grasslands, sagebrush flats, desertscrub, and the edges of pinyon-juniper  
16 woodlands. The ferruginous hawk nests in tall trees or willows along streams, on steep slopes,  
17 cliff ledges, hillsides, and power line towers.

18  
19 The main threat to the ferruginous hawk is habitat loss due to agricultural development.  
20 In addition, the invasion of exotic annuals compromises the ability of native grasslands and  
21 shrublands to support viable populations of the species. The density and productivity of the  
22 ferruginous hawk is associated with cycles of prey abundance. The species avoids areas of  
23 intensive agriculture or human activity (NatureServe 2010).

24  
25 The ferruginous hawk may occur in the affected areas of the proposed Afton, Amargosa  
26 Valley, Antonito Southeast, Brenda, De Tilla Gulch, Dry Lake, Dry Lake Valley North,  
27 Escalante Valley, Fourmile East, Gillespie, Gold Point, Imperial East, Los Mogotes East,  
28 Milford Flats South, Millers, Riverside East, and Wah Wah Valley SEZs.

29  
30  
31 **Gila Woodpecker (*Melanerpes uropygialis*)**

32  
33 ESA Listing Status: Not Listed

34 BLM Listing Status: Not Listed

35 State Listing Status: Endangered in California

36 Rarity: California State Rank S1

37  
38 The geographic distribution of the Gila woodpecker extends from southwestern  
39 New Mexico, through southern Arizona, north to the Mogollon Rim, and west to extreme  
40 southeast California. Within Nevada and California, populations are confined to the last riparian  
41 remnants of the Colorado River and the Imperial Valley (McCreedy 2008). Gila woodpeckers  
42 occur primarily in desert riparian and desert wash communities with old-growth xeric riparian  
43 woodlands, orchards, vineyards, and urban areas being utilized to a lesser extent. As a cavity  
44 nester, the Gila woodpecker requires the occurrence of mature saguaro cacti (*Carnegiea*  
45 *gigantea*), Fremont cottonwood (*Populus fremontii*), Goodding's willow (*Salix gooddingii*),  
46 Arizona sycamore (*Platanus wrightii*), blue palo verde (*Cercidium floridum*), honey mesquite,

1 screwbean mesquite (*Prosopis pubescens*), Athel tamarisk (*Tamarix aphylla*), eucalyptus  
2 (*Eucalyptus* sp.), or blue fan palm (*Erythea armata*) having a height of at least 4.0 m (12 ft) and  
3 an average diameter at breast height (DBH) of 22 in. (56.0 cm) (McCreedy 2008). The Gila  
4 woodpecker is omnivorous and gleans insects, mistletoe berries, cactus fruits, and acorns from  
5 trunks and branches (Zeiner et al. 1990).

6  
7 The Gila woodpecker is considered uncommon throughout its range as it has experienced  
8 significant declines in its abundance in recent decades (Zeiner et al. 1990). In Arizona, research  
9 indicates a negative population trend (-2.2%), while near extirpations have occurred in  
10 southeastern California (McCreedy 2008). It is a fairly uncommon resident in southern  
11 California and southwestern Arizona, where it occurs in desert riparian and wash habitats along  
12 the lower Colorado River Basin.

13  
14 The Gila woodpecker is listed as an endangered species under the California Endangered  
15 Species Act (CESA).

16  
17 The Gila woodpecker may occur in the affected area of the proposed Riverside East SEZ.

#### 18 19 20 **Gray Vireo (*Vireo vicinior*)**

21  
22 ESA Listing Status: Not Listed

23 BLM Listing Status: Sensitive

24 State Listing Status: Threatened in New Mexico

25 Rarity: California State Rank S2; Colorado State Rank S2; New Mexico State Rank S2;  
26 USFSW Species of Concern

27  
28 The gray vireo is an uncommon summer resident in arid pinyon-juniper and chaparral  
29 habitats of southern California, New Mexico, Texas, Colorado, Utah, and Arizona. Within  
30 New Mexico, gray vireos summer in the Guadalupe Mountains and Doña Ana and Otero  
31 Counties in arid juniper woodlands on foothills and mesas with a well-developed grass  
32 component. Nonforest habitat is open to dense stands of shrubs and low trees. Associated  
33 vegetation includes juniper, oak, big sagebrush, saltbush, greasewood (*Sarcobatus vermiculatus*),  
34 and creosotebush. Its elevation ranges from 2,000 to 6,500 ft (600 to 2,000 m) (NMDGF 2010).

35  
36 Gray vireos are insectivores and eat mainly Lepidopterans. They also feed on the fruits of  
37 the elephant tree (*Bursera microphylla*). The species incubates clutches of 3 to 5 eggs for 14 to  
38 15 days. Nests are parasitized frequently by cowbirds (NMDGF 2010; NatureServe 2010).

39  
40 The gray vireo was listed as endangered in New Mexico on July 22, 1983. It was ranked  
41 S2 in New Mexico in 2006. Currently, it is listed as sensitive by the BLM; listed as threatened in  
42 New Mexico; ranked S2 in Colorado, California, and New Mexico; and is a USFWS species of  
43 concern.

44  
45 Threats include old-growth forest, fire exclusion, loss and alteration of quality juniper-  
46 grassland habitat, and cowbird nest parasitism.

1 The species is unlikely to occur in the affected area of any SEZ because of the lack of  
2 suitable habitat; however, it may occur within the affected area of the proposed Afton SEZ  
3 (NMDGF 2010).

4  
5  
6 **Great Egret (*Ardea alba*)**

7  
8 ESA Listing Status: Not Listed  
9 BLM Listing Status: Sensitive  
10 State Listing Status: Arizona Wildlife Species of Concern  
11 Rarity: Arizona State Rank S1  
12

13 The geographic distribution of the great egret extends from southern Oregon and southern  
14 Idaho; south through California, Nevada, and southwestern Arizona; east from southern Canada,  
15 central Minnesota, southwestern Wisconsin, central Illinois, southern Indiana, northern Ohio,  
16 Vermont, and Maine; south through the Gulf states; west to eastern Colorado, southern  
17 New Mexico, and south-central Texas; along both coasts of Mexico; and through the Bahamas,  
18 Antilles, Middle America, and South America (AZGFD 2010). The great egret is considered to  
19 be a year-round resident in the lower Colorado River Valley in southwestern Arizona and  
20 southeastern California. This species is primarily associated with open water areas such as  
21 marshes, lakes, ponds, and reservoirs.

22  
23 Great egrets are highly mobile and participate in both daily and seasonal migratory  
24 movements. Within its summer range, individuals may disperse several kilometers to foraging  
25 sites (NatureServe 2010). Seasonally, northern populations migrate south to winter ranges in the  
26 southern states and Mexico. Little information is available regarding population trends of the  
27 great egret. However, it has been suggested that the amount of suitable nesting habitat is  
28 restricted (NatureServe 2010).

29  
30 The great egret may occur in the affected areas of the proposed Brenda and Gillespie  
31 SEZs.  
32

33  
34 **Greater Sage-Grouse (*Centrocercus urophasianus*)**

35  
36 ESA Listing Status: Candidate  
37 BLM Listing Status: Sensitive  
38 State Listing Status: Utah Species of Concern  
39 Rarity: Utah State Rank S2  
40

41 The greater sage-grouse inhabits plains, foothills, and mountain valleys dominated by  
42 sagebrush (*Artemisia* sp.). Lek sites are located in relatively open areas surrounded by sagebrush  
43 or in areas where sagebrush density is low. Nesting usually occurs on the ground, where  
44 sagebrush density is higher. Some populations may travel up to 60 mi (96 km) between summer  
45 and winter habitats.  
46

1 The greater sage-grouse nests in the same area in successive years; on the ground in a  
2 shallow depression with thick cover in sagebrush habitat. Sagebrush of varying densities and  
3 heights, native grass cover for nesting, and high protein forbs and insects for feeding during  
4 nesting and brood-rearing are necessary for brood survival.

5  
6 Males and females gather in separate flocks in winter, as do broodless hens in summer.  
7 Hens move their broods to wetter sites in June and July and use seeps, wet meadows, riparian  
8 areas, alfalfa and potato fields, and other cultivated areas. Males and broodless females will  
9 inhabit uplands and high mountain meadows and grasslands. The greater sage-grouse is adapted  
10 to winter extremes, but sagebrush is necessary for food and cover.

11  
12 The species was once abundant in many areas of the West. Early declines of the species  
13 are attributed to hunting, with more recent declines due to loss, fragmentation, and degradation  
14 of sagebrush habitat. Sagebrush habitats have been converted to agricultural use and are now at  
15 risk for energy development.

16  
17 Increases in wildfire frequency, the spread of invasive species, and livestock management  
18 and domestic grazing all threaten sagebrush habitats (NatureServe 2010).

19  
20 The greater sage-grouse may occur in the affected areas of the proposed Escalante  
21 Valley, Gold Point, Milford Flats South, Millers, and Wah Wah Valley SEZs.

## 22 23 24 **Gunnison Sage-Grouse (*Centrocercus minimus*)**

25  
26 ESA Listing Status: Under Review

27 BLM Listing Status: Sensitive (Colorado)

28 State Listing Status: Not Listed

29 Rarity: Colorado State Rank S1; Colorado Species of Concern

30  
31 The status of the Gunnison sage-grouse is under review by the USFWS to determine  
32 whether it should be listed as endangered or threatened under the ESA (USFWS 2009b). The  
33 Gunnison sage-grouse is considered a distinct species of sage-grouse on the basis of  
34 morphological, genetic, behavioral, and geographical characteristics. The species is about  
35 one-third smaller than the greater sage-grouse (*Centrocercus urophasianus*). The geographic  
36 range for the Gunnison sage-grouse is restricted to those portions of Colorado and Utah that are  
37 south of the Colorado River. The greatest concentration of this species (estimated between  
38 2,000 and 3,000 birds) exists within the Gunnison Basin in southwestern Colorado. The total  
39 adult (breeding) population is estimated to be fewer than 4,000 (NatureServe 2010).

40  
41 The mating behavior of sage-grouse is perhaps one of the most complex and stereotyped  
42 behaviors known among birds. From mid-March to early June, males will exhibit a display on  
43 leks, which are open areas that provide good visibility for acoustics and predator detection. The  
44 male mating display is characterized by the male inflating its esophageal air sac in a strut  
45 behavior with the wings held stiffly at either side. During this period, the air sac is evident  
46 through the apteria (area of bare skin) on the male's neck. These skin patches inflate repeatedly

1 to create an acoustic and visual display to attract females. The strutting display of the Gunnison  
2 sage-grouse is distinct from other sage-grouse species. During a typical strutting display,  
3 Gunnison sage-grouse inflate the apteria of their necks nine times, as compared to twice for the  
4 greater sage-grouse (USFWS 2009c).

5  
6 Following courtship, females will select nests in tall and dense stands of shrubs—usually  
7 sagebrush—from about 650 ft (200 m) to 5 mi (8 km) from the leks. Clutches average 7 to 9 eggs  
8 that will hatch after a 27- or 28-day incubation period (American Bird Conservancy 2010).

9  
10 The Gunnison sage-grouse utilizes a variety of habitats throughout the year, but it is  
11 mostly associated with sagebrush ecosystems. Sagebrush provides shelter for nests and supports  
12 diverse insect and forb communities that serve as food sources for young and adult individuals.  
13 During the winter, Gunnison sage-grouse become dependent on sagebrush leaves as their sole  
14 food source (American Bird Conservancy 2010). During the spring and summer months, the  
15 species may also utilize healthy grasslands and riparian ecosystems.

16  
17 Population declines and range contractions of the Gunnison sage-grouse are attributable  
18 to a number of anthropogenic factors. As identified in the *Gunnison Sage-Grouse Conservation*  
19 *Plan* (Gunnison Sage-Grouse Rangewide Steering Committee 2005), these factors were grouped  
20 into three major categories that may contribute to the continued decline of the species. These  
21 factors include (1) degradation in sagebrush-steppe habitat quality and composition; (2) loss or  
22 fragmentation of sagebrush-steppe habitats from agricultural, energy, residential, and  
23 transportation infrastructure developments; and (3) physical disturbance of individuals through  
24 predation, diseases, invasive species, and recreational activities, such as hunting, bird watching,  
25 and OHV use.

26  
27 The Gunnison sage-grouse may occur in the affected area of the proposed De Tilla Gulch  
28 SEZ.

### 31 **LeConte's Thrasher (*Toxostoma lecontei*)**

32  
33 ESA Listing Status: Not Listed

34 BLM Listing Status: Sensitive (Nevada)

35 State Listing Status: Protected in Nevada

36 Rarity: Nevada State Rank S2; USFWS Species of Concern

37  
38 The LeConte's thrasher is an uncommon year-round resident in Arizona, southern  
39 California, and southern Nevada. Elevational range is below sea level to 5,250 ft (1,600 m). This  
40 species inhabits saltbush-cholla scrub communities in desert flats, dunes, or alluvial fans. The  
41 majority of shrubs rarely exceed 8 ft (2.5 m) in height, with occasional desert trees. Surface  
42 water rarely exists within several kilometers. Nests are located in thick, dense, thorny desert  
43 shrubs, small trees, or cholla cactus. They will also nest in artificial sites, up to 11 ft (3.5 m)  
44 above ground. The diet of LeConte's thrasher consists of spiders, scorpions, small fruits and  
45 seeds, and occasionally lizards and small snakes. Accumulated leaf litter is important as cover  
46 for arthropod prey.

1 Threats to the species included degradation, fragmentation, and loss of habitat to  
2 agriculture, irrigation, urbanization, oil and gas development, fire, and overgrazing by sheep or  
3 cattle. The fragile habitat is easily altered by vehicular traffic, such as OHVs  
4 (NatureServe 2010).

5  
6 The LeConte's thrasher may occur in the affected area of the proposed Dry Lake SEZ.  
7  
8

9 **Long-Billed Curlew (*Numenius americanus*)**

10  
11 ESA Listing Status: Not Listed  
12 BLM Listing Status: Sensitive  
13 State Listing Status: Utah Species of Concern  
14 Rarity: Colorado State Rank S2; Utah State Rank S2; Nevada State Rank S2  
15

16 The long-billed curlew is known to occur in the region as a summer resident and migrant  
17 in short-grass grasslands near standing water. The species will nest in dry prairies and moist  
18 meadows. In Utah, the nests tend to be in small patches of short vegetation near barren ground.  
19 The long-billed curlew is an opportunistic feeder and eats various insects and berries. During  
20 migration, the species will feed on crayfishes, crabs, snails, and toads.  
21

22 The long-billed curlew may occur in the affected areas of the proposed Escalante Valley,  
23 Milford Flats South, and Wah Wah Valley SEZs.  
24  
25

26 **Mountain Plover (*Charadrius montanus*)**

27  
28 BLM Listing Status: Sensitive (Colorado)  
29 State Listing Status: Not Listed  
30 Rarity: Utah State Rank S1; California State Rank S2; California Species of Concern;  
31 Utah Species of Concern  
32

33 The mountain plover inhabits prairie grasslands and arid plains and fields; nesting occurs  
34 in shortgrass prairie habitats within shallow depressions on the ground. The breeding range  
35 extends from northern Montana, south to Arizona, with most nesting occurring in Colorado,  
36 Wyoming, and Montana. Most of the population overwinters in California, with fewer birds in  
37 Arizona, Texas, and Mexico. Significant populations of nonbreeding, nonwintering birds occur  
38 in southeastern Colorado and New Mexico. Mountain plovers feed primarily on insects.  
39

40 Outside of breeding season, mountain plovers forage and roost in loose flocks of  
41 changing composition, and flock size may exceed 1,000 on the southern Great Plains in late  
42 summer.  
43

44 The USFWS originally proposed to list the mountain plover on December 5, 2002.  
45 However, that proposal was withdrawn on September 9, 2003, on the basis that threats to the  
46 species were not as significant as previously believed. On June 29, 2010, the USFWS reinstated

1 the proposed rule to list the mountain plover as a threatened species (USFWS 2010f), but this  
2 proposal was dropped on May 12, 2011 (76 FR 27756).

3  
4 Threats to the mountain plover include the conversion of shortgrass prairie to agricultural  
5 land, and the conversion to crops where the ground stays fallow until after the mountain plover  
6 has begun nesting (NatureServe 2010).

7  
8 The mountain plover may occur in the affected areas of the proposed Antonito Southeast,  
9 De Tilla Gulch, Fourmile East, and Los Mogotes East SEZs.

10  
11  
12 **Northern Aplomado Falcon (*Falco femoralis septentrionalis*)**

13  
14 ESA Listing Status: Endangered  
15 BLM Listing Status: Not Listed  
16 State Listing Status: Endangered in New Mexico  
17 Rarity: New Mexico State Rank S1

18  
19 The northern aplomado falcon inhabits the desert grasslands and savannas of  
20 Latin America. In the United States, the subspecies historically inhabited desert grasslands with  
21 mesquite and yucca, riparian woodlands in open grasslands, and sand ridges with yuccas on the  
22 coastal prairies of Texas, New Mexico, and southeastern Arizona. In general, open landscapes  
23 with scattered trees and shrubs provide good habitat. Other necessary habitat components include  
24 moderately low ground cover, an abundance of small to medium-sized birds, and a supply of  
25 nesting platforms. There are a total of 22 grassland areas within the historical range of the  
26 species in southeastern Arizona and southern New Mexico that offer suitable habitat conditions  
27 for the aplomado falcon (NMDGF 2010; NatureServe 2010).

28  
29 Aplomado falcons prey primarily on other birds (e.g., cuckoos, doves, woodpeckers,  
30 blackbirds, flycatchers, and thrushes) and supplement their diet with insects, small mammals,  
31 reptiles, and amphibians (e.g., grasshoppers, butterflies, crickets, wasps, frogs, lizards, bats, and  
32 rodents). Aplomado falcons do not construct their own nests and are thus dependent on nesting  
33 platforms constructed by other species, such as the stick nests of Swainson's hawks, crested  
34 caracaras, and Chihuahuan ravens. In desert habitats, nest availability is determined by the  
35 presence of species that build large nests, such as crows, kites, ravens, or hawks. The breeding  
36 season lasts for 6 to 8 months, with most eggs laid between March and May. Clutches consist of  
37 2 to 3 eggs, and the incubation period (both parents tending) lasts 32 days. Nestlings fledge after  
38 approximately 35 days and remain in the vicinity of the nest for another month  
39 (NatureServe 2010).

40  
41 The northern aplomado falcon was federally listed as endangered on February 25, 1986.  
42 Critical habitat has not been designated. At the time of listing, the falcon was no longer breeding  
43 in the United States. Recently, however, there have been sightings of falcons in New Mexico,  
44 which suggests that the subspecies is dispersing from breeding locations in Mexico back into the  
45 southwestern United States.

1 The northern aplomado falcon previously experienced large population declines because  
2 of pesticides, especially DDT applied in Mexico. It has also lost large areas of suitable habitat  
3 through brush encroachment and agriculture clearing (NatureServe 2010).

4  
5 The northern aplomado falcon may occur in the affected area of the proposed Afton SEZ.  
6  
7

8 **Northern Goshawk (*Accipiter gentilis*)**  
9

10 ESA Listing Status: Not Listed  
11 BLM Listing Status: Sensitive  
12 State Listing Status: Arizona Wildlife Species of Concern; Protected in Nevada  
13 Rarity: New Mexico State Rank S2; Nevada State Rank S2;  
14 New Mexico Species of Concern; USFWS Species of Concern  
15

16 The northern goshawk inhabits mature mountain forest and riparian zone habitats. It nests  
17 in trees in mature deciduous, coniferous, and mixed forests. It forages in both heavily forested  
18 and relatively open shrubland habitats.  
19

20 The northern goshawk may occur in the affected areas of the proposed Afton, Amargosa  
21 Valley, Escalante Valley, Milford Flats South, and Wah Wah Valley SEZs.  
22  
23

24 **Phainopepla (*Phainopepla nitens*)**  
25

26 ESA Listing Status: Not Listed  
27 BLM Listing Status: Sensitive (Nevada)  
28 State Listing Status: Protected in Nevada  
29 Rarity: Nevada State Rank S2; USFWS Species of Concern  
30

31 The phainopepla occurs in the southwestern United States and Mexico in desertscrub,  
32 mesquite, and pinyon-juniper woodland communities as well as in desert riparian areas and  
33 orchards. Nests are typically constructed in trees and shrubs from 3 to 45 ft (1 to 15 m) above the  
34 ground.  
35

36 The phainopepla may occur in the affected areas of the proposed Amargosa Valley and  
37 Dry Lake SEZs.  
38  
39

40 **Prairie Falcon (*Falco mexicanus*)**  
41

42 ESA Listing Status: Not Listed  
43 BLM Listing Status: Sensitive (Nevada)  
44 State Listing Status: Not Listed  
45 Rarity: Not Listed  
46

1 The prairie falcon is known to occur throughout the western United States. The species  
2 occurs in open habitats in mountainous areas, sagebrush-steppe, grasslands, or cultivated areas.  
3 Nests are typically constructed in well-sheltered ledges of rocky cliffs and outcrops.  
4

5 The prairie falcon may occur in the affected areas of the proposed Amargosa Valley, Dry  
6 Lake Valley North, Gold Point, and Millers SEZs.  
7  
8

9 **Short-Eared Owl (*Asio flammeus*)**

10  
11 ESA Listing Status: Not Listed  
12 BLM Listing Status: Sensitive  
13 State Listing Status: Not Listed  
14 Rarity: Utah Species of Concern; Colorado State Rank S2; Utah State Rank S2;  
15 New Mexico State Rank S2  
16

17 The short-eared owl inhabits grasslands, shrublands, and other open habitats. It is  
18 nomadic, often selecting unique breeding sites each year, depending on local rodent densities. It  
19 nests on the ground near shrubs.  
20

21 The short-eared owl may occur in the affected areas of the proposed Antonito Southeast,  
22 De Tilla Gulch, Escalante Valley, Fourmile East, Los Mogotes East, Milford Flats South, and  
23 Wah Wah Valley SEZs.  
24  
25

26 **Snowy Egret (*Egretta thula*)**

27  
28 ESA Listing Status: Not Listed  
29 BLM Listing Status: Sensitive  
30 State Listing Status: Wildlife Species of Concern in Arizona  
31 Rarity: Arizona State Rank S1; Colorado State Rank S2  
32

33 The snowy egret is considered to be a year-round resident in the lower Colorado River  
34 Valley in southwestern Arizona and southeastern California. This species is primarily associated  
35 with open water areas such as marshes, lakes, ponds, and reservoirs.  
36

37 The snowy egret may occur in the affected area of the proposed Gillespie SEZ.  
38  
39

40 **Southwestern Willow Flycatcher (*Empidonax traillii extimus*)**

41  
42 ESA Listing Status: Endangered  
43 BLM Listing Status: Not Listed  
44 State Listing Status: Arizona Wildlife Species of Concern; Endangered in California;  
45 Endangered in Colorado; Endangered in New Mexico;  
46 Protected in Nevada

1           Rarity: Arizona State Rank S1; California State Rank S1; Nevada State Rank S1;  
2           Utah State Rank S1; New Mexico State Rank S2  
3

4           The southwestern willow flycatcher is a subspecies of willow flycatcher that breeds in  
5 southern California, southern Nevada, southern Utah, Arizona, New Mexico, western Texas, and  
6 extreme northwest Mexico. It may also breed in southwestern Colorado, but nesting records are  
7 lacking. All willow flycatchers are migratory.  
8

9           The southwestern willow flycatcher occurs in riparian habitats along rivers, streams, or  
10 other wetlands, where there are dense growths of willows, baccharis (*Baccharis* spp.),  
11 cottonwood, buttonbush, and other deciduous shrubs and trees. Flycatchers nest in thickets of  
12 trees and shrubs that are approximately 13 to 23 ft (4 to 7 m) or more in height, have dense  
13 foliage from approximately 13 ft (7 m) above the ground, and often have a high percentage of  
14 canopy cover. The diversity of nest site plant species may be low or comparatively high, and nest  
15 site vegetation may be even- or uneven-aged, but it is usually dense and structurally  
16 homogeneous. Although the southwestern willow flycatcher historically nested in native plant  
17 communities, and it still does so when such vegetation is available, the species is now known to  
18 nest in thickets dominated by the non-native species tamarisk and Russian olive (*Elaeagnus*  
19 *angustifolia*). The subspecies virtually always nests near surface water or saturated soil. At some  
20 nest sites, surface water may be present early in the breeding season, but by late June or early  
21 July, only damp soil is present. Ultimately, a water table close enough to the surface to support  
22 riparian vegetation is necessary (NatureServe 2010).  
23

24           The southwestern willow flycatcher is an insectivore. It forages within and above dense  
25 riparian vegetation and takes insects on the wing or gleans them from foliage. It also forages in  
26 areas adjacent to nest sites, which may be more open. No information is available on specific  
27 prey species.  
28

29           Southwestern willow flycatchers arrive at breeding sites and begin singing by mid-May,  
30 and they build nests in late May and early June. Birds construct a cup-shaped nest in a fork or  
31 horizontal branch of a medium-sized bush or small tree, approximately 3.2 to 15 ft (1 to 4.5 m)  
32 above the ground. Typically, there is dense vegetation above and around the nest. The subspecies  
33 fledges young in early to mid-July. Some variations in these dates have been observed; they may  
34 be related to altitude, latitude, and renesting.  
35

36           The southwestern willow flycatcher was federally listed as endangered on February 27,  
37 1995 (60 FR 10693). On July 22, 1997, approximately 599 river mi (960 km) of waterways and  
38 their adjacent riparian habitats in Arizona, California, and New Mexico were designated as  
39 critical habitat.  
40

41           Threats to continued existence have primarily included habitat loss and degradation.  
42 Extensive loss of the habitat of this subspecies has occurred through the conversion of  
43 floodplains to agriculture, flood-control projects, and urban development. Other threats include  
44 overgrazing and brood-parasitism by the brown-headed cowbird (NatureServe 2010).  
45

1 The southwestern willow flycatcher may occur in the affected areas of the proposed  
2 Antonito Southeast, De Tilla Gulch, Dry Lake, Fourmile East, Gillespie, and Los Mogotes East  
3 SEZs.

4  
5  
6 **Swainson's Hawk (*Buteo swainsoni*)**

7  
8 ESA Listing Status: Not Listed

9 BLM Listing Status: Sensitive (Nevada)

10 State Listing Status: Protected in Nevada

11 Rarity: California State Rank S2; Nevada State Rank S2; USFWS Species of Concern

12  
13 The Swainson's hawk occurs throughout the southwestern United States. It inhabits  
14 desert, savanna, open pine-oak woodland, grassland, and cultivated habitats. Nests are typically  
15 constructed in solitary trees, bushes, or small groves; sometimes the hawks nest near urban areas.

16  
17 The Swainson's hawk may occur in the affected areas of the proposed Amargosa Valley,  
18 Dry Lake Valley North, Gold Point, and Millers SEZs.

19  
20  
21 **Western Burrowing Owl (*Athene cunicularia hypugaea*)**

22  
23 ESA Listing Status: Not Listed

24 BLM Listing Status: Sensitive

25 State Listing Status: Threatened in Colorado

26 Rarity: Species of Concern in Arizona, California, New Mexico, and Utah;

27 Arizona State Rank S2; California State Rank S2; USFWS Species of Concern

28  
29 The western burrowing owl is a year-round resident throughout the southwestern  
30 United States. California, New Mexico, and Arizona are important wintering areas within the  
31 United States. It forages in grasslands, shrublands, and open disturbed areas, and it nests in  
32 burrows usually constructed by mammals. It forages on invertebrates and small mammals. The  
33 western burrowing owl spends much of its time on the ground or on low perches or soil mounds.  
34 The species feeds on insects and rodents and occasionally birds and amphibians. Prey is caught  
35 during flight or on the ground.

36  
37 Primary threats include the loss of habitat and fragmentation to agricultural and urban  
38 land uses, and the control and extermination of colonial burrowing mammals  
39 (NatureServe 2010).

40  
41 The western burrowing owl may occur in the affected areas of the proposed Afton,  
42 Amargosa Valley, Antonito Southeast, Brenda, De Tilla Gulch, Dry Lake, Dry Lake Valley  
43 North, Escalante Valley, Fourmile East, Gillespie, Gold Point, Imperial East, Los Mogotes East,  
44 Milford Flats South, Millers, Riverside East, and Wah Wah Valley SEZs.

1 **Western Least Bittern (*Ixobrychus exilis hesperis*)**

2  
3 ESA Listing Status: Not Listed

4 BLM Listing Status: Sensitive

5 State Listing Status: Arizona Wildlife Species of Concern; Protected in Nevada;  
6 Species of Concern in California

7 Rarity: California State Rank S1; Nevada State Rank S2; USFWS Species of Concern

8  
9 The least bittern is a common summer resident in suitable habitats of the lower Colorado  
10 River in southwestern California and southwestern Arizona. The species inhabits freshwater  
11 marsh habitats containing dense, emergent vegetation, such as cattail and reeds (*Phragmites* sp.).  
12

13 The western least bittern may occur in the affected area of the proposed Imperial East  
14 SEZ.  
15

16  
17 **Western Snowy Plover (*Charadrius alexandrinus nivosus*)**

18  
19 ESA Listing Status: Not Listed

20 BLM Listing Status: Sensitive

21 State Listing Status: Arizona Wildlife Species of Concern; Protected in Nevada

22 Rarity: Species of Concern in Colorado; Arizona State Rank S1; Colorado State Rank S1;  
23 USFWS Species of Concern  
24

25 There are two distinct populations of western snowy plover *Charadrius alexandrinus*  
26 *nivosus*), only one of which is federally listed. The Pacific Coast population of the western  
27 snowy plover, which is genetically isolated from interior-breeding western snowy plovers, is  
28 defined as those individuals that nest adjacent to or near tidal waters, including all nesting  
29 colonies on the mainland coast, peninsulas, offshore islands, adjacent bays, and estuaries  
30 (USFWS 2007).  
31

32 Snowy plovers forage on invertebrates (NatureServe 2010). The western snowy plover  
33 breeds on alkali flats around reservoirs and sandy shorelines. Nest initiation and egg laying occur  
34 from mid-March through mid-July. Typically, the clutch size is 3 eggs, and incubation averages  
35 27 days, with both sexes incubating the eggs. This species is a known summer breeder and  
36 winter resident in portions of the six-state study area.  
37

38 The Pacific Coast population is federally listed as threatened and does not occur in the  
39 vicinity of the six-state study area. The interior population of the western snowy plover is not  
40 listed under the ESA; this species may occur in the vicinity of the solar energy program areas.  
41

42 The western snowy plover may occur in the affected areas of the proposed Dry Lake  
43 Valley North, Fourmile East, and Gillespie SEZs.  
44  
45  
46

1 **Western Yellow-Billed Cuckoo (*Coccyzus americanus occidentalis*)**

2  
3 ESA Listing Status: Candidate

4 BLM Listing Status: Not Listed

5 State Listing Status: Arizona Wildlife Species of Concern; Endangered in California;  
6 Protected in Nevada

7 Rarity: California State Rank S1; Nevada State Rank S1; Utah State Rank S1;  
8 New Mexico Species of Concern  
9

10 The western yellow-billed cuckoo is considered by the USFWS as a Distinct Population  
11 Segment (DPS) (subspecies *occidentalis*) of the yellow-billed cuckoo. Populations of the yellow-  
12 billed cuckoo are more common in the central and eastern United States; the western yellow-  
13 billed cuckoo DPS, however, has experienced significant population declines. This species is a  
14 medium-sized, insectivorous, migratory bird species that occupies scattered, isolated habitats  
15 west of the Rocky Mountains in Arizona, California, Colorado, Nevada, and New Mexico.  
16

17 Typical breeding habitats for the western yellow-billed cuckoo are deciduous riparian  
18 woodlands, particularly cottonwood and willow. Dense riparian understory foliage is an  
19 important factor in nest site selection in some areas. Nests are commonly created in dense covers  
20 of trees and shrubs. The species does not appear to select specific habitats types during the  
21 nonbreeding season, as they are known to inhabit various types of forest, woodland, and shrub-  
22 scrub habitats.  
23

24 The USFWS determined that the western yellow-billed cuckoo was a candidate for  
25 federal listing under the ESA on July 25, 2001 (66 FR 38611).  
26

27 Primary threats to the western yellow-billed cuckoo DPS include habitat destruction and  
28 pesticide application. Most habitat loss results from the conversion of riparian habitats to  
29 agriculture (including livestock grazing) and water development infrastructure. The spread of  
30 invasive non-native species, particularly salt cedar, has also contributed to the decline of suitable  
31 breeding habitats.  
32

33 The western yellow-billed cuckoo may occur in the affected areas of the proposed Afton  
34 and Gillespie SEZs.  
35  
36

37 **White-Faced Ibis (*Plegadis chihi*)**

38  
39 ESA Listing Status: Not Listed

40 BLM Listing Status: Sensitive

41 State Listing Status: Not Listed

42 Rarity: New Mexico Species of Concern; California State Rank S1;

43 Arizona State Rank S2; Colorado State Rank S2; New Mexico State Rank S2;

44 USFWS Species of Concern  
45

1 The white-faced ibis is a migratory wading bird with distinct breeding and wintering  
2 areas. Breeding primarily occurs in temperate areas of western North America in marshes,  
3 swamps, and riverine systems. Wintering occurs in marshes, meadows, riverine systems, and  
4 meadows from southern California and Arizona, to coastal Texas and Louisiana, and south to  
5 Central and South America.

6  
7 The white-faced ibis may occur in the affected area of the proposed Imperial East SEZ.  
8  
9

### 10 **Yuma Clapper Rail (*Rallus longirostris yumanensis*)**

11  
12 ESA Listing Status: Endangered

13 BLM Listing Status: Not Listed

14 State Listing Status: Arizona Wildlife Species of Concern; Threatened in California;  
15 Protected in Nevada

16 Rarity: California State Rank S1; Nevada State Rank S1  
17

18 The Yuma clapper rail is a subspecies that occurs in inland habitats in the southwestern  
19 United States. Yuma clapper rails are found in shallow, freshwater marshes containing dense  
20 stands of cattails and bulrushes, along the Colorado River from California, southern Nevada, and  
21 Arizona south into Mexico. They also occur in dense, near-monotypic stands of cattail at the  
22 Salton Sea in Imperial County, California, and in marshes and riparian habitats in western  
23 Arizona and southern Nevada. Unlike other clapper rails, which are associated with tidal  
24 marshes, the Yuma clapper rail occupies freshwater marshes during the breeding season. Until  
25 recently, most of the population was thought to retreat to Mexico during the winter; it is now  
26 estimated that more than 70% of the breeding population winters along the Lower Colorado  
27 River.

28  
29 The Yuma clapper rail feeds on crayfish and other crustaceans, and it is believed that the  
30 abundance of food animals at a particular site is a better predictor of rail population densities  
31 than is vegetation. Yuma clapper rails breed from March through July. Nests are built in three  
32 major microhabitats: at the base of living clumps of cattail or bulrush, under wind-thrown  
33 bulrush, or on the top of dead cattails remaining from the previous year's growth. Nesting  
34 materials and cover are obtained from mature cattail/bulrush stands. Clutch size is typically six  
35 to eight eggs, and most eggs hatch during the first week of June (NatureServe 2010).  
36

37 The Yuma clapper rail was federally listed as endangered on March 11, 1967  
38 (USFWS 1967). Critical habitat for this subspecies has not been designated.  
39

40 Threats to continued survival of the Yuma clapper rail include loss and degradation of  
41 habitat by activities such as water projects and the draining or filling of marshes for development  
42 or agriculture. Other threats to this species include catastrophic flooding, invasion of non-native  
43 plant species such as salt cedar, and pollution from urban runoff, industrial discharges, and  
44 sewage effluent. Although population numbers of the species appear to be stable, habitat  
45 throughout its range is not secure (NatureServe 2010).  
46

1 The Yuma clapper rail may occur in the affected areas of the proposed Gillespie and  
2 Imperial East SEZs.

3  
4  
5 **J.6.7 Mammals**

6  
7  
8 **Arizona Myotis (*Myotis occultus*)**

9  
10 ESA Listing Status: Not Listed  
11 BLM Listing Status: Sensitive  
12 State Listing Status: Not Listed  
13 Rarity: New Mexico Species of Concern; California State Rank S2;  
14 USFWS Species of Concern  
15

16 The Arizona myotis is known from extreme southeastern California and southern Arizona  
17 and New Mexico, where it occurs along river lowlands and in adjacent desert mountain ranges. It  
18 inhabits ponderosa pine and oak-pine woodlands in close proximity to water; it also occurs in  
19 riparian forests within desert areas along the Colorado River.

20  
21 Arizona myotis feeds predominantly on mosquitoes and midges. Specific foraging habitat  
22 types vary by altitude, with orchards, permanent water, and riparian areas being utilized at low  
23 elevations; ponds within forest clearings are utilized at higher elevations (Western Bat Working  
24 Group 2010).

25  
26 Home range size of the Arizona myotis is not known. Seasonal migration between  
27 summer ranges and hibernacula, as well as daily movements from day roosts and foraging areas  
28 are likely to be local within a short distance, as summer and winter ranges are thought to  
29 coincide (AZGFD 2010).

30  
31 The Arizona myotis may occur in the affected area of the proposed Riverside East SEZ.

32  
33  
34 **Big Free-Tailed Bat (*Nyctinomops macrotis*)**

35  
36 ESA Listing Status: Not Listed  
37 BLM Listing Status: Sensitive  
38 State Listing Status: Not Listed  
39 Rarity: California Species of Concern; Nevada State Rank S1; California State Rank S2;  
40 New Mexico State Rank S2; Utah State Rank S2; USFWS Species of Concern  
41

42 The big free-tailed bat is associated with bare rock/talus/scree, cliff, shrub desert,  
43 hardwood woodland, and riparian communities. This species roosts in rock crevices on cliff  
44 faces or in buildings (Ellison et al. 2003). It forages primarily in coniferous forests and arid  
45 shrublands to feed on moths. Foraging occurs in the open and often ranges up to high altitudes  
46 (Hester and Grenier 2005).

1  
2 Home range size of the big free-tailed bat is determined by the spatial distribution of  
3 specific roosting and prey resources. This species has not been found hibernating and is probably  
4 a seasonal migrant throughout much of its range. During the activity season, summer ranges may  
5 extend greater than 50 mi (80 km) from day roosts to foraging areas (Hester and Grenier 2005).  
6

7 The big free-tailed bat is widely distributed; however, the species occurs discontinuously  
8 throughout the southwestern United States. Its geographic range encompasses most of  
9 South America, Mexico, Arizona, New Mexico, southern and western Texas, southern California  
10 and southeastern Nevada, southern Utah, and north to central Colorado (Ellison et al. 2003).  
11

12 The big free-tailed bat may occur in the affected areas of the proposed Antonito  
13 Southeast, De Tilla Gulch, Dry Lake, Fourmile East, and Los Mogotes East SEZs.  
14  
15

### 16 **Brazilian Free-Tailed Bat (*Tadarida brasiliensis*)**

17

18 ESA Listing Status: Not Listed  
19 BLM Listing Status: Sensitive  
20 State Listing Status: Protected in Nevada  
21 Rarity: Not Listed  
22

23 The Brazilian free-tailed bat is known from isolated locations throughout the  
24 southwestern United States. It is found in a variety of habitats with dry, open woodlands,  
25 shrublands, and grasslands being preferred (Harris 1999). Roost and hibernation habitat  
26 components include caves, rock crevices of cliffs, tree hollows, buildings, or mines.  
27

28 Brazilian free-tailed bats are opportunistic insectivores. This species utilizes echolocation  
29 to feed on swarming insects, primarily small-sized moths. Home range size of the Brazilian free-  
30 tailed bat is determined by the spatial distribution of roosting and prey resources. Seasonal and  
31 daily movements of this species are extensive. Seasonally, populations migrate up to 1,125 mi  
32 (1,800 km) from their winter range in Central America to their summer ranges within the  
33 southern portion of the United States, while daily movements from night roosts and foraging  
34 areas range from 25 to 40 mi (40 to 65 km) (Harris 1999; Bradley et al. 2006).  
35

36 The geographic distribution of the Brazilian free-tailed bat encompasses southern  
37 Oregon, Nevada, northern Utah, northern Nebraska, Arkansas, northern Alabama, Mississippi,  
38 Georgia, and southern North Carolina in the north, to Central America in the south occurring at  
39 an elevational range of 660 to 10,500 ft (220 to 3,500 m). However, despite their widespread  
40 distribution, recent studies have suggested that populations have declined drastically in the  
41 southern states, whereby the majority of individuals are confined to only 20 caves  
42 (NatureServe 2010).  
43

44 The Brazilian free-tailed bat may occur in the affected areas of the proposed Dry Lake  
45 and Gold Point SEZs.  
46  
47

1 **California Leaf-Nosed Bat (*Macrotus californicus*)**

2  
3 ESA Listing Status: Not Listed

4 BLM Listing Status: Sensitive

5 State Listing Status: Arizona Wildlife Species of Concern

6 Rarity: California State Rank S2; California Species of Concern;

7 USFWS Species of Concern

8  
9 The California leaf-nosed bat is confined to lowland Sonoran Desert habitats, including  
10 desert riparian, desert wash, desert scrub, desert succulent shrub, alkali desert scrub, and palm  
11 oasis. Since this species neither migrates nor hibernates, it relies on the availability of suitable  
12 roost sites that afford precise season-specific microclimatic conditions in order to successfully  
13 exploit temperate zone deserts. Such roost sites occur almost exclusively within mines or caves  
14 and have the following characteristics: They are a source of geothermal heat, have a stable  
15 temperature of about 84°F (29°C), have high humidity (>50%), have no air circulation, have high  
16 ceilings, and are at least 300 ft (100 m) in length. The proximal occurrence of desert wash  
17 vegetation is an additional critical habitat component, because it provides California leaf-nosed  
18 bats with a local source of their primary prey; this resource is necessary to minimize winter  
19 foraging excursions (NatureServe 2010; Western Bat Working Group 2010).

20  
21 California leaf-nosed bats are purely insectivorous, with moths (sphingid, noctuid, and  
22 cossid), butterflies, grasshoppers, and katydids making up the majority of their diet. Foraging  
23 occurs close to the ground (<2 ft [ $<6$  m]), where prey items are gleaned from vegetation. The  
24 sizes of the home ranges of California leaf-nosed bat populations are determined by the spatial  
25 distribution of roosting and resources. Seasonally, movements between summer and winter  
26 roosts are typically less than 2 mi (2.6 km), with core activity occurring up to 1 mi (1.3 km) from  
27 roost sites (CDFG 2010; NatureServe 2010; Western Bat Working Group 2010).

28  
29 California leaf-nosed bats are the most northerly representative of the family  
30 Phyllostomidae (Western Bat Working Group 2010). Historically, their geographic range  
31 extended across southern California, Arizona, and southern Nevada. However, studies suggest  
32 that during the recent century, this species has disappeared from the coastal basins of California  
33 and is currently limited to the eastern portion of its former range (CDFG 2010;  
34 NatureServe 2010; Western Bat Working Group 2010). Such rapid range contraction has been  
35 attributed to roost disturbance, renewed mining in historic districts, mine closures, and  
36 destruction of foraging habitat. Moreover, the restrictive roosting requirements, limited  
37 distribution, and tendency to form large but relatively few roosting aggregations that are  
38 characteristics of California leaf-nosed bats act to further exasperate the effects incurred by these  
39 threats.

40  
41 The California leaf-nosed bat was formerly a Category 2 candidate (C2) species under the  
42 ESA and is now considered a species of concern (nonstatutory ranking) by the USFWS.

43  
44 The California leaf-nosed bat may occur in the affected areas of the proposed Brenda,  
45 Gillespie, Imperial East, and Riverside East SEZs.

1 **Cave Myotis (*Myotis velifer*)**

2  
3 ESA Listing Status: Not Listed  
4 BLM Listing Status: Sensitive  
5 State Listing Status: Protected in Nevada  
6 Rarity: California State Rank S1; USFWS Species of Concern  
7

8 The cave myotis is generally within the Sonoran and Transition life zones, particularly  
9 deserts scrub, desert succulent shrub, desert wash, desert riparian, and pine-oak communities.  
10 Creosotebush, palo verde, brittlebush, and cactus are dominant vegetative components of utilized  
11 sites (Western Bat Working Group 2005). Within these communities, this crevice-dwelling  
12 species requires cavern-like structures for roosting during all the stages of its life cycle in which  
13 it exhibits a high level of site fidelity (CDFG 2010). Preferred roost sites are typically caves;  
14 however, mines, bridges, or buildings may also be utilized if characterized as having a thermal  
15 range of 46 to 52°F (8 to 11°C), a high relative humidity (>50%), and low air circulation.  
16

17 The diet of the cave myotis consists primarily of lepidopterans and coleopterans, but  
18 weevils, antlions, and other flying insects may also be taken opportunistically. Foraging occurs  
19 over dense riparian vegetation and in drier desert washes at heights of 12 to 50 ft (4 to 12 m)  
20 (Western Bat Working Group 2010).  
21

22 Home range size of the cave myotis is determined by the spatial distribution of roost sites  
23 and prey resources. Because this species tends to make extensive daily movements between  
24 summer roosting areas and foraging habitat, home ranges may encompass areas as large as  
25 618 mi (1,600 km<sup>2</sup>) (AZGFD 2010).  
26

27 The geographic distribution of the cave myotis extends from Kansas, Oklahoma, and  
28 western Texas, to southern Nevada and to southeastern California (along the Colorado River  
29 only), south through Mexico to the Honduras at elevations of 300 to 8,800 ft (92 to 2,684 m). In  
30 California, this species has experienced significant declines as the result of roost disturbance,  
31 loss of riparian vegetation, and pesticides, and it is currently restricted to lowlands of the  
32 Colorado River and adjacent mountain ranges (CDFG 2010).  
33

34 The cave myotis was formerly a Category 2 candidate (C2) species under the ESA and is  
35 now considered a species of concern (nonstatutory ranking) by the USFWS.  
36

37 The cave myotis could occur in the affected areas of the proposed Brenda, Gillespie, and  
38 Riverside East SEZs.  
39

40  
41 **Dark Kangaroo Mouse (*Microdiposops megacephalus*)**

42  
43 ESA Listing Status: Not Listed  
44 BLM Listing Status: Sensitive  
45 State Listing Status: Not Listed  
46 Rarity: Utah Species of Concern; Utah State Rank S2  
47

1 The dark kangaroo mouse occurs in the Great Basin region of the western United States,  
2 including Oregon, Utah, California, and Nevada at an elevational extent of 3,904 to 8,050 ft  
3 (1,190 to 2,455 m) (Kim 1999). Nocturnally active during warm weather, the species remains in  
4 underground burrows during the day and cold winter months. The dark kangaroo mouse occurs  
5 exclusively in shrubland communities of the Upper Sonoran Life-Zone (O'Farrell and Blaustein  
6 1974). Within these temperate shrubland and desert habitats, individuals establish relatively large  
7 home ranges that are centered on burrow systems constructed in fine, gravelly soils (O'Farrell  
8 and Blaustein 1974). Dark kangaroo mice are primarily granivorous; however, they shift to an  
9 insectivorous feeding strategy during the summer season.

10  
11 The dark kangaroo mouse may occur in the affected areas of the proposed Milford Flats  
12 South and Wah Wah Valley SEZs.

13  
14  
15 **Desert Bighorn Sheep (*Ovis canadensis mexicana*)**

16  
17 ESA Listing Status: Not Listed

18 BLM Listing Status: Not Listed

19 State Listing Status: Endangered in New Mexico

20 Rarity: New Mexico Species of Concern; New Mexico State Rank S1

21  
22 The desert bighorn sheep is currently listed as threatened in the State of New Mexico. It  
23 is one of several subspecies of bighorn sheep that is known to occur in the southwestern  
24 United States. This subspecies is known to occur in eastern Arizona, New Mexico, and Texas.  
25 Within New Mexico, desert bighorn sheep inhabit visually open, rocky, desert, mountain ranges  
26 in the southern portion of the state. The species rarely uses desert lowlands and valleys, but these  
27 areas may be occasionally used as movement corridors between mountain ranges.

28  
29 The desert bighorn sheep may occur in the affected area of the proposed Afton SEZ.

30  
31  
32 **Desert Valley Kangaroo Mouse (*Microdipodops megacephalus albiventer*)**

33  
34 ESA Listing Status: Not Listed

35 BLM Listing Status: Sensitive

36 State Listing Status: Protected in Nevada

37 Rarity: Nevada State Rank S2; USFWS Species of Concern

38  
39 The Desert Valley kangaroo mouse is endemic to central Nevada, where it inhabits desert  
40 areas at playa margins, and dune habitats at elevations ranging from 3,904 to 8,050 ft (1,190 to  
41 2,455 m) (Kim 1999). This species occurs exclusively within shrub-scrub and alkali sink plant  
42 communities of the Upper Sonoran Life-Zone (O'Farrell and Blaustein 1974). Within these  
43 temperate shrubland and desert habitats, individuals establish relatively large home ranges that  
44 are centered around burrow systems constructed in fine, gravelly soils (O'Farrell and Blaustein  
45 1974). Desert Valley kangaroo mice are primarily granivorous; however, they shift to an  
46 insectivorous feeding strategy during the summer season.

1 The Desert Valley kangaroo mouse may occur in the affected area of the proposed Dry  
2 Lake Valley North SEZ.

3  
4  
5 **Fringed Myotis (*Myotis thysanodes*)**

6  
7 ESA Listing Status: Not Listed

8 BLM Listing Status: Sensitive

9 State Listing Status: Protected in Nevada

10 Rarity: Utah Species of Concern; Nevada State Rank S2; USFWS Species of Concern

11  
12 The fringed myotis is a snag-dependent species that occurs in a wide variety of mesic  
13 habitat types, including ponderosa pine forests as well as oak, pinion, and juniper woodlands,  
14 with deserts and grasslands being utilized to a lesser extent. Within these communities, the  
15 fringed myotis requires snags and rock crevices for day and night roosting. Selection of diurnal  
16 roost-sites is based on a combination of surrounding vegetation structure, tree attributes, and  
17 thermal regime, as these features serve to enable proper thermoregulation, facilitate flight access,  
18 and maximize predator avoidance. In addition, water resources are another habitat component, as  
19 this species must drink daily immediately after emerging from day roosts (Keinath 2003).  
20 Hibernation, however, typically occurs in caves or mines whose microclimates maintain high  
21 humidity and a constant temperature (Keinath 2003).

22  
23 The fringed myotis is an opportunistic predator whose diet is composed of a variety of  
24 insect classes. Foraging preferentially occurs along forest or field edges where prey items are  
25 gleaned from vegetation.

26  
27 Home range size of the fringed myotis during the active season is approximately 95 acres  
28 (0.4 km<sup>2</sup>) and is determined by the spatial distribution of roosting, prey, and water resources.  
29 Within these activity areas, daily movements are short as roost sites and foraging habitat tend to  
30 be within localized areas.

31  
32 The fringed myotis is predominantly a western species occurring as scattered populations  
33 from southern Canada, south through southern Mexico, eastward to Montana and Wyoming at an  
34 elevational range of 4,000 to 9,350 ft (1,200 to 2,850 m). Throughout its geographic distribution,  
35 abundance has fluctuated, perhaps causing populations to become increasing smaller and more  
36 isolated in recent decades (Keinath 2003).

37  
38 The fringed myotis may occur in the affected areas of the proposed Afton, Amargosa Valley,  
39 Dry Lake Valley North, Escalante Valley, Gold Point, Milford Flats South, and Millers SEZs.

40  
41  
42 **Gunnison's Prairie Dog (*Cynomys gunnisoni*)**

43  
44 ESA Listing Status: Candidate

45 BLM Listing Status: Not Listed

1 State Listing Status: Not Listed  
2 Rarity: New Mexico State Rank S2

3  
4 The Gunnison's prairie dog occurs in grasslands and shrublands in two separate range  
5 portions: those that inhabit montane habitats (higher elevation, moister climate), and those that  
6 inhabit prairie habitats (lower elevation, drier climate). Gunnison's prairie dogs are diurnal  
7 herbivores that live in colonies and spend much of their time underground. The diet of the  
8 Gunnison's prairie dog includes grasses, forbs, sedges, and shrubs. Invertebrates make up a small  
9 portion of the diet. They are inactive or torpid during severe winter weather (NatureServe 2010).  
10 Adults emerge from their burrows in March or early April. Reproduction occurs in spring, but  
11 the timing of reproduction varies somewhat by latitude, elevation, and year. Following birth, the  
12 young stay underground for about 1 month.

13  
14 Gunnison's prairie dog colonies are often smaller than those of other species and may  
15 consist of fewer than 50 individuals (NatureServe 2010). Colonial groups are organized into  
16 territories that generally contain one adult male and several adult females and nonbreeding  
17 juveniles. Survivorship is low. The Gunnison's prairie dog is an important prey species for  
18 raptors. Rangewide, habitats occupied by the species have declined by nearly 98% between 1916  
19 and the present (NatureServe 2010).

20  
21 Montane Gunnison's prairie dog populations are more vulnerable to the sylvatic plague  
22 because in the montane region, colonies are fewer in number, smaller, and more scattered. These  
23 factors would make it more difficult for individuals to recolonize sites that were extirpated as a  
24 result of the disease (73 FR 6660). Compared with the lower-elevation prairie habitat regions,  
25 moister montane areas may have more hospitable climates for fleas and, in turn, plague  
26 outbreaks. Although plague outbreaks have occurred in the drier prairie portions of the  
27 Gunnison's prairie dog range, populations in these habitats can recover much more quickly  
28 because of the availability of nearby colonies.

29  
30 Gunnison's prairie dog populations within montane habitats in central and south-central  
31 Colorado and north-central New Mexico were listed as candidates for federal protection under  
32 the ESA on February 5, 2008 (73 FR 6660).

33  
34 Threats to the continued existence of Gunnison's prairie dog are primarily related to the  
35 spread of sylvatic plague. Sylvatic plague is a bacterial disease that is generally transmitted  
36 among rodents by fleas. The disease is not native to North America and has been known in the  
37 United States since 1900. The disease can severely reduce or extirpate populations within a short  
38 time frame (3 to 10 years).

39  
40 The Gunnison prairie dog could occur in the affected areas of the proposed Antonito  
41 Southeast, De Tilla Gulch, and Los Mogotes East SEZs.

1 **Kit Fox (*Vulpes macrotis*)**

2  
3 ESA Listing Status: Not Listed  
4 BLM Listing Status: Sensitive (Utah)  
5 State Listing Status: Not Listed  
6 Rarity: Not Listed  
7

8 The kit fox occurs in desert and semiarid communities, including mixed-grass  
9 shrublands, grasslands, and margins of pinyon-juniper woodlands. It occurs at an  
10 elevational range of 4,800 to 6,000 ft (1,463 to 1,829 m) on sites of sandstone or shale derivation  
11 with a high clay to clay-loam content and generally avoids areas with gravelly substrates  
12 (Meaney et al. 2006). Diurnal den sites, because they ameliorate extreme temperatures, reduce  
13 heat loads, conserve water, and protect against predators, are an important habitat component for  
14 this semifossorial species. Because of this, overlapping home ranges that are 620 to 2,866 acres  
15 (1.02 km<sup>2</sup> to 4.6 km<sup>2</sup>) in size are established in areas that provide adequate den site availability  
16 and high densities of primary prey items, including lagomorphs, prairie dogs, and kangaroo rats  
17 (Meaney et al. 2006; NatureServe 2010).  
18

19 The geographic distribution of the kit fox extends from northern Baja California, north  
20 through western Texas, west of the Rocky Mountains, to southwestern Idaho and southeastern  
21 Oregon, and it is in portions of California, Arizona, Nevada, Utah, New Mexico, and western  
22 Colorado, where it tends to occur in small, isolated populations. Despite maintaining the majority  
23 of its historical range, this species is declining in many of the states in which it occurs, including  
24 Utah.  
25

26 Kit fox populations could occur in the affected areas of the proposed Escalante Valley,  
27 Milford Flats South, and Wah Wah Valley SEZs.  
28  
29

30 **Long-Legged Myotis (*Myotis volans*)**

31  
32 ESA Listing Status: Not Listed  
33 BLM Listing Status: Sensitive  
34 State Listing Status: Not Listed  
35 Rarity: Not Listed  
36

37 The long-legged myotis is primarily associated with montane or subalpine forested  
38 habitats, including ponderosa pine woodland, pinyon-juniper woodland, and montane shrublands  
39 composed of willows or sagebrush. However, this species also occurs at low altitudes in riparian  
40 and desert regions of Baja California (Warner and Czaplewski 1984). Within these communities,  
41 the long-legged myotis requires snags, and to a lesser extent caves, mines, or cliff crevices, for  
42 roosting and hibernating. Roost-site, and potentially hibernacula, selection is based on structural  
43 attributes that provide the most suitable microclimate, whereby, preferred roosts are  
44 characterized as having the following features: (1) of the decay class 1, (2) greater than 105 ft  
45 (32 m) in height, and (3) have exfoliating bark that forms a shingle-like pattern. In addition to  
46 these vegetative components, water resources are another critical habitat requirement, as the

1 long-legged myotis has poor urine-concentrating abilities, and thus drinks regularly  
2 (Zeiner et al. 1990).

3  
4 The diet of the long-legged myotis consists primarily of moths (Lepidoptera), but it will  
5 also consume a variety of other soft-bodied invertebrates, including flies (Diptera) termites  
6 (Isoptera), lacewings (Neuroptera), wasps (Hymenoptera), bugs (Hemiptera), leafhoppers  
7 (Homoptera), and small beetles (Coleoptera) (Warner and Czaplewski 1984). Foraging occurs  
8 above water bodies, among the canopy layer, or within openings of chaparral, coastal scrub,  
9 Great Basin shrub, and early successional forests, where individuals exhibit high site fidelity  
10 (Zeiner et al. 1990).

11  
12 Home range size of the long-legged myotis is determined by the spatial distribution of  
13 specific roosting, water, and prey resources. Seasonal migration between summer ranges and  
14 hibernacula, as well as daily movements between roost sites and foraging habitat have not been  
15 fully elucidated.

16  
17 The long-legged myotis has a geographic distribution that extends across western  
18 North America from southeastern Alaska, British Columbia, and Alberta to Baja California and  
19 central Mexico at elevations ranging from sea level to 3,500 m (10,500 ft) (Ellison et al. 2003).

20  
21 The long-legged myotis may occur in the affected area of the proposed Afton SEZ.

22  
23  
24 **Nelson's Bighorn Sheep (*Ovis canadensis nelsoni*)**

25  
26 ESA Listing Status: Not Listed  
27 BLM Listing Status: Sensitive  
28 State Listing Status: Threatened in California  
29 Rarity: USFWS Species of Concern

30  
31 The Nelson's bighorn sheep (also called desert bighorn sheep) is a subspecies of bighorn  
32 sheep known to occur in the southwestern United States. This species occurs in desert mountain  
33 ranges in Arizona, California, Nevada, Oregon, and Utah. General habitat associations include  
34 alpine dwarf-shrub, low sage, sagebrush, bitterbrush, pinyon-juniper, palm oasis, desert riparian,  
35 desert succulent shrub, desert scrub, subalpine conifer, perennial grassland, montane chaparral,  
36 and montane riparian. Within these communities, physical and visual adaptations enable Nelson  
37 bighorn sheep to exploit open slopes having steep, rocky terrain, particularly of limestone  
38 substrates, and sparse vegetation. Such areas provide a diversity of topographic attributes that  
39 serve as refuge against predators and severe environmental conditions. Site occupancy is also  
40 highly dependent upon the proximal availability of water and forage resources as well, whereby  
41 Nelson's bighorn sheep populations aggregate in areas that afford permanent watering holes and  
42 a diversity of plant species. Individuals exhibit high site fidelity to natal home range areas.  
43 Seasonal migratory movements are extensive, typically between mountain ranges, whereas daily  
44 movements are relatively small, within the individual mountain range (Zeiner et al. 1990).

1 Historically, the Nelson's bighorn sheep was distributed from Baja California and Texas  
2 in the South, eastward to western Nebraska, north to the Canadian Rockies, and California in the  
3 West. Populations have declined in the past century and are currently restricted to the Colorado  
4 Desert within Arizona, California, Nevada, and Utah at an elevational range of 2,953 to 13,123 ft  
5 (900 to 4,000 m).  
6

7 The Nelson's bighorn sheep primarily uses montane shrubland, forest, and grassland  
8 habitats, and they may utilize desert valleys as corridors for travel between range habitats.  
9

10 The Nelson's bighorn sheep may occur in the affected areas of the proposed Amargosa  
11 Valley, Dry Lake, Dry Lake Valley North, Gold Point, Millers, and Riverside East SEZs.  
12  
13

14 **Pahranagat Valley Montane Vole (*Microtus montanus fucosus*)**  
15

16 ESA Listing Status: Not Listed  
17 BLM Listing Status: Sensitive  
18 State Listing Status: Protected in Nevada  
19 Rarity: Nevada State Rank S2; USFWS Species of Concern  
20

21 The Pahranagat Valley montane vole is endemic to Lincoln County, Nevada, where it is  
22 restricted to springs in the Pahranagat Valley. Within that area, isolated populations utilize mesic  
23 montane and desert riparian habitat.  
24

25 The Pahranagat Valley montane vole may occur in the affected area of the proposed Dry  
26 Lake Valley North SEZ.  
27  
28

29 **Pale Kangaroo Mouse (*Microdipodops pallidus*)**  
30

31 ESA Listing Status: Not Listed  
32 BLM Listing Status: Not Listed  
33 State Listing Status: Protected in Nevada  
34 Rarity: Nevada State Rank S2  
35

36 The pale kangaroo mouse is a rodent that is endemic to southwestern Nevada and  
37 southeastern California. This species inhabits fine sands in alkali sink and desert scrub habitats  
38 dominated by shadscale or big sagebrush (*Artemisia tridentata*). The species often burrows in  
39 areas of soft, windblown sand piled at the bases of shrubs.  
40

41 The pale kangaroo mouse may occur in the affected area of the proposed Gold Point SEZ.  
42  
43  
44

1 **Pallid Bat (*Antrozous pallidus*)**

2  
3 ESA Listing Status: Not Listed

4 BLM Listing Status: Sensitive

5 State Listing Status: Protected in Nevada

6 Rarity: California Species of Concern; USFWS Species of Concern

7  
8 The pallid bat occurs in a variety of woodland, grassland, riparian, wetland, and  
9 agricultural habitats but is most abundant in xeric communities, such as deserts and canyon  
10 lands. Within these habitat types, this species requires rocky outcrops, cliffs, crevices, mines, or  
11 buildings for roosting. Tree cavities in oak (*Quercus* spp.), ponderosa pine (*Pinus ponderosa*),  
12 coastal redwood (*Sequoia sempervirens*), or giant sequoia (*Sequoiadendron giganteum*) also  
13 serve as roost sites. Preferred characteristics of roost sites are relatively cool and stable thermal  
14 conditions and unobstructed entrances that occur high above the ground surface. In addition,  
15 water resources are a critical habitat component, since pallid bats often drink immediately after  
16 emergence (NatureServe 2010; Western Bat Working Group 2010).

17  
18 Pallid bats are opportunistic generalists that glean a variety of invertebrate prey—  
19 including beetles, moths, and crickets—from surfaces. Foraging occurs in and among the  
20 vegetation of open shrub-steppe grasslands, oak savannah grasslands, open Ponderosa pine  
21 forests, talus slopes, gravel roads, lava flows, fruit orchards, and vineyards (NatureServe 2010;  
22 Western Bat Working Group 2010).

23  
24 The sizes of the home ranges of pallid bat populations are determined by the spatial  
25 distribution of roosting, prey, and water resources. Seasonal migration between summer ranges  
26 and hibernacula, as well as daily movements from night roosts and foraging areas, are local and  
27 range from 1 to 3 mi (0.5 to 2.5 km) (NatureServe 2010; Western Bat Working Group 2010).

28  
29 The geographic distribution of the pallid bat extends throughout western North America,  
30 from southern British Columbia south to Latin America, and east to Texas, at elevations of  
31 6,000 to 7,000 ft (1,830 to 2,100 m). In California, this species is locally common within the  
32 Great Basin, Mojave, and Sonoran Deserts. Current population trends are unknown; however,  
33 because the loss of critical roost sites has resulted in a general decline in the abundance of cave-  
34 dwelling bat species throughout North America, concern over the status of pallid bat populations  
35 has increased.

36  
37 The pallid bat could occur in the affected areas of the proposed Amargosa Valley, Dry  
38 Lake, Gold Point, and Riverside East SEZs.

39  
40  
41 **Palm Springs Pocket Mouse (*Perognathus longimembris bangsi*)**

42  
43 ESA Listing Status: Not Listed

44 BLM Listing Status: Sensitive

45 State Listing Status: Not Listed

46 Rarity: California State Rank S2

1 The Palm Springs pocket mouse is known to occur only in Riverside County within the  
2 Coachella Valley in California. This species inhabits desertscrub and grassland communities on  
3 sandy soils. This subspecies occurs in the lower Sonoran life zone of California, inhabiting  
4 creosote scrub, desertscrub, and grasslands communities. Common plant associates include  
5 creosotebush, brittlebush (*Encelia farinosa*), burrobrush, indigo bush (*Psoralea schottii*),  
6 cheesebush (*Hymenoclea salsola*), honey mesquite, and various annual plants such as dune  
7 primrose (*Oenothera deltoides*), desert mallow (*Sphaeralcea ambigua*), and dove weed (*Croton*  
8 *californica*), all of whose seed and vegetative matter provide critical forage. As a nocturnal  
9 species, activity is conducted during the night, where foraging excursions are performed.  
10 Individuals then retreat to their burrows during the day as well as throughout the winter season  
11 (NatureServe 2010; Sierra Club 2006).

12  
13 The historic distribution of the Palm Springs pocket mouse once extended from the  
14 San Geronio Pass area east to southern Joshua Tree National Park, and south through the  
15 Coachella Valley to Ocotillo (Sierra Club 2006). However, increased habitat loss, OHV use, and  
16 the introduction of non-native vegetation have caused this range to be severely reduced.  
17 Currently, occurrences of Palm Springs pocket mouse populations are highly fragmented. They  
18 are restricted to roughly 142,000 acres (465,878 km<sup>2</sup>) of the lower Sonoran Desert from the  
19 San Geronio Pass area east to the Little San Bernardino Mountain, and south along the eastern  
20 edge of the Peninsular Range to Borrego Valley and the east side of San Felipe Narrows (Sierra  
21 Club 2006).

22  
23 The Palm Springs pocket mouse may occur in the affected area of the proposed Riverside  
24 East SEZ.

### 25 26 27 **Pygmy Rabbit (*Brachylagus idahoensis*)**

28  
29 ESA Listing Status: Not Listed

30 BLM Listing Status: Sensitive (Utah)

31 State Listing Status: Protected in Nevada

32 Rarity: Utah State Rank S2; Utah Species of Concern

33  
34 The pygmy rabbit is a sagebrush (*Artemisia* spp.) obligate, restricted to sagebrush-steppe  
35 areas of the Great Basin and adjacent intermountain regions. Within these sagebrush-dominated  
36 communities, individuals establish relatively small home ranges encompassing an areal extent of  
37 1.1 to 4.9 acres (0.004 to 0.02 km<sup>2</sup>). These home ranges are characterized as having relatively  
38 high sagebrush cover (21 to 36%) and being centered around burrow systems constructed on  
39 loose, alluvial soils. Together, these habitat properties serve to minimize the risk of predation  
40 risk and provide adequate forage as well, since big sagebrush constitutes 51 to 99% of their diet  
41 (Lee 2008; NatureServe 2010).

42  
43 Beyond being considered a keystone species within big sagebrush habitat, pygmy rabbits  
44 are also considered to be unique among leporids, which enhances their ecological importance.  
45 Distinctive behaviors include scurrying locomotion, emission of distress vocalization, and high  
46 fossoriality (Lee 2008; NatureServe 2010; Oliver 2004).

1 Historically, the geographic range of pygmy rabbits has been limited in the North to the  
2 Great Basin and adjacent intermountain areas of eastern Washington and southwestern Montana,  
3 and in the South to California and eastern Utah. Current studies suggest that this species has  
4 suffered rapid declines over this last century, likely because of its high susceptibility to  
5 anthropogenic changes, which has resulted in a patchy distribution of DPSs (Lee 2008;  
6 NatureServe 2010; Oliver 2004).

7  
8 The Great Basin populations of the pygmy rabbit were petitioned for listing under the  
9 ESA in 2003, but no federal protective status was received. However, Columbia populations in  
10 the state of Washington are listed as endangered under the ESA (Oliver 2004).

11  
12 The pygmy rabbit could occur in the affected areas of the proposed Dry Lake Valley  
13 North, Escalante Valley, Milford Flats South, and Wah Wah Valley SEZs.

14  
15  
16 **Silver-Haired Bat (*Lasionycteris noctivagans*)**

17  
18 ESA Listing Status: Not Listed  
19 BLM Listing Status: Sensitive  
20 State Listing Status: Not Listed  
21 Rarity: USFWS Species of Concern

22  
23 The silver-haired bat is known from forested areas at high elevations of 1,600 to 8,500 ft  
24 (488 to 2,590 m), composed of aspen, cottonwood, white fir, pinyon-juniper, subalpine fir,  
25 willow, and spruce communities. Roost and nursery sites occur in tree foliage or cavities or  
26 under loose bark. This species rarely hibernates in caves. The geographic distribution of the  
27 silver-haired bat extends from southeastern Alaska and much of western Canada, south to  
28 central California into northern Mexico, and east through Georgia. Silver-haired bats prefer  
29 lepidopteran (moths and butterflies) prey but will feed opportunistically on other insects  
30 (Schmidt 2003). Foraging occurs above the canopy layer of coniferous and mixed deciduous  
31 forests in close proximity to ponds, slow-moving streams, and other standing bodies of water  
32 where this species utilizes echolocation to detect swarms of prey (NatureServe 2010;  
33 Schmidt 2003).

34  
35 The silver-haired bat may occur in the affected areas of the proposed Dry Lake and Gold  
36 Point SEZs.

37  
38  
39 **Spotted Bat (*Euderma maculatum*)**

40  
41 ESA Listing Status: Not Listed  
42 BLM Listing Status: Sensitive  
43 State Listing Status: Protected in Nevada; Threatened in New Mexico  
44 Rarity: California State Rank S2; Colorado State Rank S2; New Mexico State Rank S2;  
45 Utah State Rank S2; Utah Species of Concern; USFWS Species of Concern  
46

1 The spotted bat occurs in a wide variety of arid habitat types, including desert shrub  
2 habitat, subalpine meadows, pinyon juniper woodlands, cliffs, riparian areas, and coniferous  
3 forests. Black oak (*Quercus velutina*), ponderosa pine (*Pinus ponderosa*), incense cedar  
4 (*Calocedrus decurrens*), giant sequoia (*Sequoiadendron giganteum*), red fir (*Abies magnifica*),  
5 lodgepole pine (*Pinus contorta*), and white fir (*Abies concolor*) are common vegetative  
6 associations of utilized sites. Within these communities, this species requires rocky cliff features  
7 for roosting during all stages of its life cycle. It exhibits a high level of site fidelity. Roost sites  
8 typically occur in crevices of high, steep, cliffs composed of granite, basalt, limestone,  
9 sandstone, or other sedimentary rock; site selection appears to be determined by its thermal  
10 conditions and protective ability. In addition, water resources in the form of rivers, lakes,  
11 marshes, or man-made bodies of water are another critical habitat component, since spotted bats  
12 are highly susceptible to water loss (Luce and Keinath 2007; NatureServe 2010; Western Bat  
13 Working Group 2010).

14  
15 The spotted bat prefers lepidopteran prey, with more than 97% of its diet consisting of  
16 moths (Luce and Keinath 2007). Foraging occurs in the open-air space along linear landscape  
17 elements within woodlands, canopy gaps, stream corridors, and edges of riparian zones.

18  
19 Home range size of the spotted bat is determined by the spatial distribution of roosting,  
20 prey, and water resources. The migratory behavior of this species is restricted to daily  
21 movements of 6 to 24 mi (10 to 38.5 km) between roost sites and foraging habitat, since both the  
22 hibernating range and summer range occur within the same area (Luce and Keinath 2007).

23  
24 The spotted bat is widely distributed across western North America, from the southern  
25 Canadian province of British Columbia; south through eastern Oregon, Idaho, south-central  
26 Montana, central and western Wyoming, western Colorado and Nevada; to southern California,  
27 southwestern Arizona, New Mexico and west Texas; to central Mexico at elevations of 187 ft  
28 below sea level to 9,800 ft (−57 to 3,000 m). Within its range, this species occurs at low densities  
29 as localized subpopulations; thus, both its distribution and its abundance are constrained by the  
30 availability of suitable roost sites (Luce and Keinath 2007; NatureServe 2010; Western Bat  
31 Working Group 2010).

32  
33 The spotted bat was formerly a candidate species under the ESA until the classification  
34 system was modified and subsequently removed from the list. Currently, this species is  
35 considered a species of concern (nonstatutory ranking) by the USFWS.

36  
37 The spotted bat could occur in the affected areas of the proposed Amargosa Valley,  
38 Antonito Southeast, De Tilla Gulch, Dry Lake, Dry Lake Valley North, Escalante Valley, Gold  
39 Point, Los Mogotes East, Milford Flats South, Millers, Riverside East, and Wah Wah Valley  
40 SEZs.

#### 41 42 43 **Townsend's Big-Eared Bat (*Corynorhinus townsendii*)**

44  
45 ESA Listing Status: Not Listed

46 BLM Listing Status: Sensitive

1 State Listing Status: Protected in Nevada  
2 Rarity: California State Rank S2; Colorado State Rank S2; Nevada State Rank S2;  
3 California, Colorado, Utah, and USFWS Species of Concern  
4

5 The Townsend's big-eared bat is widespread throughout the western United States and  
6 occurs in each of the six states in the PEIS study area. The pale Townsend's big-eared bat  
7 (*C. t. pallescens*), a subspecies of the Townsend's big-eared bat, occurs primarily in Colorado  
8 and New Mexico. The Townsend's big-eared bat is generally associated with dry upland  
9 habitats, particularly desertscrub, mixed conifer forest, and pinion-juniper forest habitat, but it  
10 will also utilize mesic coniferous and deciduous forests. Within these communities, this species  
11 requires spacious, cavern-like structures for roosting during all stages of its life cycle, in which it  
12 exhibits a high level of site fidelity. Limestone caves, mines, lava tubes, bridges, or buildings  
13 may serve as such roosting structures. Roosting site selection seems to be determined by a  
14 combination of the site's internal complexity, dimensions, and opening aperture, since these  
15 features regulate and maintain the temperature and humidity. Preferred structural characteristics  
16 of maternal roosts include an internal thermal range of 64 to 86°F (18 to 30°C) and an entrance  
17 with a diameter of at least 6 by 12 in. (15 by 31 cm) occurring at a height of 8 to 16 ft (2.4 to  
18 4.9 m); whereas hibernacula have a thermal range of 30.2 to 52.0°F (-1.0 to 11.2 2°C), moderate  
19 airflow, and low disturbance (CDFG 2010; NatureServe 2010; Western Bat Working  
20 Group 2010).  
21

22 Townsend's big-eared bats are lepidopteran specialists, with more than 90% of their diet  
23 consisting of moths. Foraging occurs along linear landscape elements within woodlands, canopy  
24 gaps, stream corridors, and edges of riparian zones dominated by Douglas-fir, California bay,  
25 and willow species, where the bats glean insects from vegetation. Such habitat areas also provide  
26 a critical source of drinking water (CDFG 2010; NatureServe 2010; Western Bat Working  
27 Group 2010).  
28

29 Home range size of the Townsend's big-eared bat is determined by the spatial  
30 distribution of roosting, prey, and water resources. Seasonally, movements between summer  
31 roosting areas to hibernacula range from 2 to 40 mi (3.1 to 64 km), whereas in summer areas,  
32 which encompass a roosting and foraging habitat, migratory movements may extend as far as  
33 6.5 mi (10.5 km) from roost sites.  
34

35 The geographic distribution of the Townsend's big-eared bat extends from the Pacific  
36 Coast east to Nevada and Idaho, and north from central Mexico to southern British Columbia at  
37 elevations of 4,501 to 10,459 ft (1,372 to 3,188 m). Within its range, this species is apparently  
38 not very abundant; such rarity likely results from the limited availability of suitable roosting  
39 habitat. Disturbance to, as well as loss of, this critical habitat component has led to rapid declines  
40 throughout the western United States (CDFG 2010; NatureServe 2010; Western Bat Working  
41 Group 2010).  
42

43 The Townsend's big-eared bat was formerly a Category 2 candidate (C2) species under  
44 the ESA, and it is now considered a species of concern (nonstatutory ranking) by the USFWS.  
45

1 The Townsend's big-eared bat could occur in the affected areas of the proposed Afton,  
2 Amargosa Valley, Antonito Southeast, Brenda, De Tilla Gulch, Dry Lake, Escalante Valley,  
3 Fourmile East, Gold Point, Imperial East, Los Mogotes East, Milford Flats South, Millers,  
4 Riverside East, and Wah Wah Valley SEZs.  
5  
6

7 **Utah Prairie Dog (*Cynomys parvidens*)**  
8

9 ESA Listing Status: Threatened  
10 BLM Listing Status: Not Listed  
11 State Listing Status: Not Listed  
12 Rarity: Utah State Rank S1  
13

14 The Utah prairie dog is endemic to southwestern Utah, where it occurs in grasslands,  
15 level mountain valleys, and areas with deep, well-drained soils and low-growing vegetation that  
16 allows for good visibility. It is one of three prairie dog species in the state of Utah. Utah prairie  
17 dogs are diurnal herbivores that live in colonies and spend much of their time underground. They  
18 are inactive or torpid in severe winter weather. Adults emerge from mid-March to early April.  
19 Breeding occurs in the spring, and young emerge from the burrows during May and early June.  
20 Adults are often dormant from mid-July to mid-August and are not often seen above ground  
21 during this period. Juveniles enter dormancy during October and November (NatureServe 2010;  
22 USFWS 2010c).  
23

24 The Utah prairie dog feeds primarily on grasses and various seeds and flowers of shrubs  
25 and insects when available. Common plant species consumed include alfalfa, leafy aster,  
26 European glorybind, and wild buckwheat seeds. The size of the home range of the Utah prairie  
27 dog varies, depending on the quality of the habitat, from 3 to 20 acres (0.01 to 0.08 km<sup>2</sup>).  
28 Available habitat for the Utah prairie dog has declined from an estimated 448,000 acres  
29 (1,813 km<sup>2</sup>) to less than 7,000 acres (28 km<sup>2</sup>) at the present time (NatureServe 2010;  
30 USFWS 2010c).  
31

32 The size of its population has varied considerably during historic times. In 1920, before  
33 programs to control the Utah prairie dog, its total population was estimated at 95,000. Shooting  
34 and poisoning of the species by ranchers (and likely periodic reductions from the plague) led to a  
35 decrease in the size of the population; it was estimated to be about 3,700 by 1984. By the spring  
36 of 1989, the adult population reached 9,200. The USFWS, in its Report to Congress, reported  
37 that at this size, the population was considered as being at risk of a crash from a plague outbreak  
38 (NatureServe 2010; USFWS 2010c).  
39

40 The Utah prairie dog was first federally listed as endangered on June 4, 1973  
41 (USFWS 1973). In 1984, it was reclassified as threatened by the USFWS (USFWS 1984). A  
42 recovery plan that was prepared in 1991 and revised in 2010 (USFWS 2010c) described the  
43 current extent of the existing populations and laid out management goals for ensuring the  
44 continued survival of the species. A major goal was to improve the chances of long-term survival  
45 of the species in the following areas: West Desert in southern Beaver and Iron Counties;  
46 Paunsaugunt in western Garfield County, eastern Iron County, and extreme northwestern Kane

1 County; and the Awapa Plateau, which extends from Sevier County southward through western  
2 Wayne and Piute Counties into northern Garfield County. No updated information on the  
3 population sizes or the success and locations of transplanted populations has been found. The  
4 recovery plan also described plans to transplant Utah prairie dogs to unoccupied habitats, and it  
5 defined procedures for monitoring the transplants.  
6

7 The Utah prairie dog could occur in the affected areas of the proposed Escalante Valley,  
8 Milford Flats South, and Wah Wah Valley SEZs.  
9

### 10 **Western Mastiff Bat (*Eumops perotis californicus*)**

11 ESA Listing Status: Not Listed

12 BLM Listing Status: Sensitive (California and Nevada)

13 State Listing Status: Protected in Nevada

14 Rarity: Nevada State Rank S1; USFWS Species of Concern  
15

16 The western mastiff bat is the largest native bat in the United States. This cliff-dwelling  
17 species occurs in a wide variety of open, semiarid to arid habitats, including conifer and  
18 deciduous woodlands, coastal scrub, annual and perennial grasslands, palm oases, chaparral,  
19 desertscrub, and urban locations of the Upper and Lower Sonoran zone. Low-growing California  
20 buckwheat (*Eriogonum fasciculatum*), greasewood (*Adenostoma fasciculatum*), black sage  
21 (*Salvia mellifera*), white sage (*Salvia apiana*), and coastal sagebrush (*Artemisia californica*) are  
22 common vegetative components of utilized sites. Within these communities, the western mastiff  
23 bat requires rocky cliffs or outcrops for roosting. Roosting site selection is based on vegetative  
24 structure as well as entrance height, orientation, and aperture. Preferred roost sites are  
25 characterized as having the following features: (1) little vegetation; (2) a clear, vertical drop of at  
26 least 9.8 ft (3 m) from the entrance; (3) entrances with a bottom access that are oriented  
27 horizontally and face downward; and (4) an aperture of 10 by 6 in. (25 by 15 cm); all of these  
28 accommodate specific flight requirements. These diurnal refugia typically occur in deep crevices  
29 that are 12 to 24 in. (30 to 60 cm) in width within granitic rocks and consolidated sandstone  
30 substrates. In addition, water resources in the form of large bodies of water longer than 100 ft  
31 (30 m) are another critical habitat component, since western mastiff bats are highly susceptible to  
32 water loss (CDFG 2010; NatureServe 2010; Western Bat Working Group 2010).  
33  
34  
35

36 Western mastiff bats are insectivorous and feed on small to large insects of soft to  
37 intermediate hardness characterized as having a low and weak flight pattern. Foraging occurs  
38 near ground level within the open-air space along linear landscape elements within woodlands,  
39 canopy gaps, stream corridors, and edges of riparian zones (CDFG 2010; NatureServe 2010;  
40 Western Bat Working Group 2010).  
41

42 The western mastiff bat exhibits nocturnal activity year-round. Unlike most molossids,  
43 this species is nonmigratory; the migratory behavior of this species is restricted to daily  
44 movements of 6 to 15 mi (10 to 25 km) between roost sites and foraging habitat as well as  
45 alternate day roosts.  
46

1 The geographic distribution of the western mastiff bat extends from central Mexico  
2 across the southwestern United States, including southern California, southern Nevada, Arizona,  
3 southern New Mexico, and western Texas, at elevations of 197 ft below sea level to 1,230 ft  
4 (–60 to 375 m). Within its range, it has experienced severe declines as a result of the loss and  
5 disturbance of roost sites, pest control operations, and grazing and pesticide applications in  
6 foraging areas (NatureServe 2010; Western Bat Working Group 2010).

7  
8 The western mastiff bat could occur in the affected areas of the proposed Dry Lake,  
9 Imperial East, and Riverside East SEZs.

10  
11  
12 **Western Red Bat (*Lasiurus blossevillii*)**

13  
14 ESA Listing Status: Not Listed

15 BLM Listing Status: Sensitive

16 State Listing Status: Arizona Wildlife Species of Concern; Protected in Nevada

17 Rarity: Nevada State Rank S1; Utah State Rank S1; New Mexico State Rank S2;

18 USFWS Species of Concern

19  
20 The western red bat is an uncommon year-round resident in the southwestern  
21 United States. The western red bat has a broad geographic distribution that extends from  
22 southern Canada through the western United States, south to Panama and South America at  
23 elevations of 656 to 7,200 ft (200 to 2,196 m). Throughout much of the xeric west, however, this  
24 species occurs in low densities where it is confined to cottonwood riparian corridors  
25 (CDFG 2010).

26  
27 The western red bat is strongly associated with forested communities such as deciduous  
28 riparian habitats dominated by cottonwood (*Populus* spp.), sycamore (*Platanus* spp.), walnut  
29 (*Juglans* spp.), and willow (*Salix* spp.). The species also inhabits mixed conifer forests, orchards,  
30 and open fields. Within these habitat communities, the western red bat requires the availability of  
31 large, undisturbed trees or shrubs for roosting. Western red bats are purely insectivorous, with  
32 moths, crickets, beetles, and cicadas composing the majority of their diet. Foraging occurs from  
33 ground level to above the canopy within grasslands, shrublands, open woodlands and forests, and  
34 croplands (CDFG 2010; NatureServe 2010).

35  
36 The western red bat may occur in the affected areas of the proposed Afton and Gillespie  
37 SEZs.

38  
39  
40 **Western Small-Footed Myotis (*Myotis ciliolabrum*)**

41  
42 ESA Listing Status: Not Listed

43 BLM Listing Status: Sensitive

44 State Listing Status: Not Listed

45 Rarity: California State Rank S2; USFWS Species of Concern

1 The western small-footed myotis is generally associated with semiarid to arid upland  
2 habitats, particularly desertscrub, grasslands, sagebrush steppe, pinyon-juniper forests, and pine-  
3 fir forests, but it prefers more mesic areas with increasing elevation. Within these communities,  
4 this species requires the availability of suitable roost sites. Crevices and cracks of canyon walls  
5 serve as day roosts, whereas limestone caves and mines are commonly utilized for hibernation. A  
6 combination of internal depth, dimensions, and opening aperture appears to determine the roost  
7 sites selected by western small-footed myotis, because these features regulate and maintain  
8 temperature and humidity. Preferred structural characteristics of roosts include an internal  
9 thermal range of 79 to 84°F (26 to 29°C), high humidity, an average entrance diameter of 1.4 in.  
10 (3.5 cm), and a shallow depth ranging from 1 to 8 in. (2.5 to 20.5 cm). In addition, water  
11 resources are a critical habitat component, because individuals often drink immediately after  
12 emergence (CDFG 2010; NatureServe 2010).

13  
14 The western small-footed myotis is an aerial feeder that preys on a variety of flying  
15 insects, particularly Lepidoptera. Foraging occurs along woodland margins or over water bodies  
16 at a range of 3 ft (1 m) above ground level to treetop height. Such habitat areas also provide a  
17 critical source of drinking water.

18  
19 The sizes of the home ranges of western small-footed myotis populations are determined  
20 by the spatial distribution of roosting, prey, and water resources. Seasonal migration between  
21 summer ranges and hibernacula, as well as daily movements from day roosts and foraging areas,  
22 are local, since summer and winter ranges apparently coincide (CDFG 2010).

23  
24 The western small-footed myotis inhabits most of western North America, where its  
25 geographic distribution extends from southwestern Canada to central Mexico. In California, it  
26 occurs along the southern coast as well as along the Sierra Nevada at elevations from sea level to  
27 8,900 ft (0 to 2,700 m).

28  
29 The western small-footed myotis could occur in the affected areas of the proposed Afton,  
30 Amargosa Valley, Dry Lake, Dry Lake Valley North, Gold Point, Millers, and Riverside East  
31 SEZs.

### 32 33 34 **Western Yellow Bat (*Lasiurus xanthinus*)**

35  
36 ESA Listing Status: Not Listed

37 BLM Listing Status: Sensitive

38 State Listing Status: Arizona Wildlife Species of Concern

39 Rarity: Arizona State Rank S2; California Species of Concern

40  
41 The western yellow bat occurs in a variety of habitat types throughout its range, from dry  
42 tropical forests to semitropical wet forests. This species is especially associated with Washington  
43 fan palm trees (*Washingtonia filifera*), because they provide critical roosting sites for this foliage  
44 rooster. However, sites composed of other broad-leaved, deciduous species (e.g., sycamores,  
45 hackberries, and cottonwoods) are also utilized. Roost sites are almost exclusively in the skirts of  
46 palm trees, where the dense frond cover modifies the microclimate and protects individuals from

1 severe weather and predators (AZGFD 2010; NatureServe 2010; Western Bat Working Group  
2 2010).

3  
4 Western yellow bats are insectivorous and feed on a variety of medium-sized, night-  
5 flying Hymenoptera, Dipterans, Lepidoptera, and Coleoptera. Foraging occurs above water  
6 features within open grassland, scrub, and canyon and riparian locations (NatureServe 2010;  
7 Western Bat Working Group 2010).

8  
9 The distribution of the western yellow bat is primarily in Mexico and Central America;  
10 its range is restricted to the southern portions of California, Arizona, New Mexico, and possibly  
11 southwestern Texas at elevations of 550 to 6,000 ft (168 to 1,830 m).

12  
13 The western yellow bat could occur in the affected areas of the proposed Brenda,  
14 Gillespie, and Riverside East SEZs.

15  
16  
17 **Yuma Myotis (*Myotis yumanensis*)**

18  
19 ESA Listing Status: Not Listed  
20 BLM Listing Status: Sensitive  
21 State Listing Status: Not Listed  
22 Rarity: USFWS Species of Concern

23  
24 The Yuma myotis is a widespread, year-round resident throughout much of the  
25 southwestern United States. It is uncommon in the Mojave and Sonoran Desert regions, except  
26 for mountain ranges bordering the Colorado River and the San Bernardino Mountains. It prefers  
27 montane forest habitats at elevations between 2,000 and 8,000 ft (600 and 2,400 m). It roosts in  
28 buildings, mines, caves, and crevices.

29  
30 The diet of Yuma myotis consists primarily of aquatic emergent insects, including caddis  
31 flies, flies, midges, small moths, ants, homopterans, and small beetles. Foraging occurs over  
32 ponds streams, and stock tanks, which also provide a critical source of water for drinking. Home  
33 range size of Yuma myotis is not known. Seasonal migration between summer ranges and  
34 hibernacula as well as daily movements from day roosts and foraging areas are likely to be local  
35 within a short distance, as summer and winter ranges are thought to coincide (CDFG 2010;  
36 NatureServe 2010).

37  
38 The Yuma myotis may occur in the affected areas of the proposed Antonito Southeast  
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40  
41  
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