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APPENDIX J:
SPECIAL STATUS SPECIES ASSOCIATED WITH
BLM'S ALTERNATIVES IN THE SIX-STATE STUDY AREA

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APPENDIX J:

SPECIAL STATUS SPECIES ASSOCIATED WITH BLM'S ALTERNATIVES IN THE SIX-STATE STUDY AREA

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J.1 INTRODUCTION

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This section describes the definitions of special status species considered in analyses, data sources, and the analytical approach used to determine impacts of solar energy development within the U.S. Department of the Interior (DOI) Bureau of Land Management (BLM) alternative areas on special status species. These analyses were conducted for this *Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States* (Solar PEIS).

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As discussed in Appendix M, special status species considered in the analyses included the following groups of species¹:

- Species listed as threatened or endangered under the Endangered Species Act (ESA);
- Species that are proposed for listing, under review, or candidates for listing under the ESA;
- Species that are designated by the BLM as sensitive;
- Species that are listed as threatened or endangered by the state or states in the affected area²; and
- Species that are considered rare in the affected area. These include species that have been ranked by state natural heritage programs as S1 or S2, species listed by the state(s) as species of concern, or species listed by the U.S. Fish and Wildlife Service (USFWS) as species of concern. The inclusion of species with high state ranks also accounted for species with high global ranks (i.e., G1 or G2), because these species invariably have high state ranks as well.

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The sources of species status and distribution data are presented in Table M.12-1 in Appendix M. This information includes data provided by state natural resource agencies, BLM field offices, and region-wide gap analysis programs, as well as information provided by

¹ Note that some of the categories of species included here do not fit BLM's definition of special status species as defined in BLM Manual 6840 (BLM 2008). These species are included here to ensure broad consideration of species that may be most vulnerable to impacts. Their inclusion is not intended to imply status by the BLM.

² State-listed species are considered to be those species that are protected by individual state regulatory statutes (e.g., California: California Endangered Species Act; Nevada: *Nevada Revised Statutes* [NRS] 501 or NRS 527).

1 NatureServe and the USFWS. Additional information on the number and types of special status
2 species that were analyzed for each solar energy zone (SEZ) is discussed here in Sections J.2
3 through J.6.
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5 The approach used to analyze the impacts of solar energy development on special status
6 species within the areas available for development under PEIS alternatives was based on the
7 distribution or presence of special status species. For the no action alternative, the analysis area
8 consisted of approximately 99 million acres (400,000 km²); for the solar energy program
9 alternatives, it was approximately 22 million acres (87,336 km²). For the SEZ alternative, both
10 the area of direct effects and the area of indirect effects were considered. The area of direct
11 effects was defined as the area that would be physically modified during project development
12 (i.e., where ground-disturbing activities would occur). For some SEZs, the area of direct effects
13 was limited to the SEZ itself, because no new transmission corridors or access roads were
14 expected to be needed. For other SEZs, the area of direct effects included an assumed area of
15 development for a transmission corridor needed to connect projects on the SEZ to the grid and/or
16 access roads to connect projects to the road network. The area of indirect effects was defined as
17 the area where ground-disturbing activities would not occur but that could be indirectly affected
18 by project activities in the area of direct effects related to groundwater withdrawals, surface
19 runoff, dust, noise, lighting, and accidental spills. The potential magnitude of indirect effects
20 would decrease with increasing distance away from the SEZ. An example is the analysis of the
21 proposed Amargosa Valley SEZ in Nevada, where groundwater withdrawals have the potential
22 to deplete regional groundwater supplies that are needed to maintain seeps, springs, wetlands,
23 and surface water bodies in the Amargosa River, Oasis Valley, and Ash Meadows, which are up
24 to 25 mi (40 km) away from the SEZ boundary. Collectively, the areas of direct and indirect
25 effects constituted the affected area. Special status species that had the potential to occur within
26 the affected area of the proposed SEZs were included in this assessment. See Appendix M for a
27 description on the analysis approach used.
28

29 Only those species that are known to occur in the SEZ regions (i.e., within 50 mi [80 km]
30 of the SEZ centers) are discussed here in Appendix J because an expanded species analysis by
31 alternative was identified too late during the preparation of the Draft PEIS to be accommodated
32 in this version of the document. It is anticipated that a discussion of all species with the potential
33 for being impacted under each alternative will be developed between the time of the Draft and
34 Final PEISs. Of the species identified, 763 may occur in the no action alternative area, 562 may
35 occur in the program alternative area, and 400 may occur in the affected area of the proposed
36 SEZs analyzed in this PEIS. A summary of the total number of special status species that may
37 occur in the affected area of each SEZ is presented in Table J.1-1.
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40 **J.2 SPECIES LISTED, PROPOSED FOR LISTING, CANDIDATES FOR LISTING, OR** 41 **UNDER REVIEW FOR LISTING UNDER THE ENDANGERED SPECIES ACT** 42

43 In total, there are 122 species listed as threatened or endangered under the ESA or that
44 are candidates, proposed, or under review for listing under the ESA that may occur within the

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

State	SEZ	Total Number of Special Status Species That May Occur in the Affected Area
Arizona	Brenda	20
Arizona	Bullard Wash	39
Arizona	Gillespie	29
California	Imperial East	35
California	Iron Mountain	43
California	Pisgah	54
California	Riverside East	70
Colorado	Antonito Southeast	38
Colorado	DeTilla Gulch	33
Colorado	Fourmile East	59
Colorado	Los Mogotes East	51
Nevada	Amargosa Valley	52
Nevada	Dry Lake	62
Nevada	Delamar Valley	49
Nevada	Dry Lake Valley North	22
Nevada	East Mormon Mountain	32
Nevada	Gold Point	21
Nevada	Millers	19
New Mexico	Afton	35
New Mexico	Mason Draw	29
New Mexico	Red Sands	43
Utah	Escalante Valley	18
Utah	Milford Flats South	20
Utah	Wah Wah Valley	22

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3 affected area of one or more of the proposed SEZs. A summary of these species that may occur
4 in the affected area of each SEZ is shown in Table J.2-1. (The sum of the species in Table J.2-1
5 is greater than the total number of species with a known or pending status under the ESA
6 because some species could occur in the affected area of more than one SEZ.) Note that some
7 species with a known or pending status under the ESA may also be BLM-designated sensitive,
8 state-listed, or rare.

9
10 Consultation with the USFWS under Section 7 of the ESA is required for those species
11 currently listed under the ESA; coordination with the USFWS should be conducted for those
12 species that are candidates, proposed, or under review for listing under the ESA. Section 7 of the
13 ESA requires all federal agencies to consult with the USFWS to ensure that agency actions are
14 not likely to jeopardize the continued existence of listed species or result in destructive or
15 adverse modification of critical habitat. The consultation process (also referred to as the
16 Section 7 process) includes the development of a biological assessment (BA), which is a

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 SEZ

State	SEZ	Listed Threatened	Listed Endangered	Proposed for Listing	Candidate	Under Review	Total
Arizona	Brenda	1	0	0	0	1	2
Arizona	Bullard Wash	2	3	0	0	1	6
Arizona	Gillespie	1	2	0	2	1	6
California	Imperial East	0	1	1	0	0	2
California	Iron Mountain	1	0	0	0	0	1
California	Pisgah	1	1	0	0	0	2
California	Riverside East	1	1	0	0	0	2
Colorado	Antonito Southeast	0	1	0	1	1	3
Colorado	DeTilla 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	Delamar Valley	1	4	0	1	5	11
Nevada	Dry Lake Valley North	1	0	0	0	0	1
Nevada	East Mormon Mountain	1	0	0	1	0	2
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
New Mexico	Mason Draw	0	2	0	0	0	2
New Mexico	Red Sands	0	4	0	0	0	4
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

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

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

13 The BLM has established a policy, as specified in BLM Manual 6840, *Special Status*
14 *Species Management* (BLM 2008b), whose purpose is “to provide policy and guidance for the
15 conservation of BLM special status species and the ecosystems upon which they depend on
16 BLM-administered lands.” Objectives of the BLM special status species policy are to
17 (1) conserve and/or recover ESA-listed species and the ecosystems on which they depend so that
18 ESA protections are no longer needed for these species and (2) initiate proactive conservation
19 measures that reduce or eliminate threats to Bureau sensitive species to minimize the likelihood
20 of and need for listing of these species under the ESA. BLM special status species are
21 “(1) species listed or proposed for listing under the ESA, and (2) species requiring special
22 management consideration to promote their conservation and reduce the likelihood and need for
23 future listing under the ESA, which are designated as Bureau sensitive by the State Director(s).
24 All Federal candidate species, proposed species, and delisted species in the 5 years following
25 delisting will be conserved as Bureau sensitive species.” Each BLM state director maintains a list
26 of sensitive species, and impacts on these species would have to be considered in project-specific
27 assessments developed before approval of any activity that would affect listed or proposed
28 species or critical habitat. A summary of the BLM-designated sensitive species that may occur in
29 the affected area of each SEZ is presented in Table J.3-1.

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

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

- 37 • Arizona: Plant species that are protected under the Arizona Native Plant Law
38 (AZDA 2008) or wildlife that are species of special concern (WSC).
- 40 • California: Plant and animal species that are listed as threatened or
41 endangered under the California Endangered Species Act (CESA).
- 43 • Colorado: Plant and animal species that are protected under *Colorado Revised*
44 *Statute* (CRS) 33-2-101.
- 46 • Nevada: Species that are protected under NRS 501 (animals) or 527 (plants).

TABLE J.3-1 Total Number of BLM-Designated Sensitive Species That May Occur in the Affected Area of Each SEZ

State	SEZ	Total Number of BLM-Designated Species That May Occur in the Affected Area
Arizona	Brenda	11
Arizona	Bullard Wash	18
Arizona	Gillespie	15
California	Imperial East	15
California	Iron Mountain	15
California	Pisgah	28
California	Riverside East	27
Colorado	Antonito Southeast	17
Colorado	DeTilla Gulch	9
Colorado	Fourmile East	13
Colorado	Los Mogotes East	18
Nevada	Amargosa Valley	25
Nevada	Dry Lake	35
Nevada	Delamar Valley	34
Nevada	Dry Lake Valley North	21
Nevada	East Mormon Mountain	21
Nevada	Gold Point	16
Nevada	Millers	16
New Mexico	Afton	17
New Mexico	Mason Draw	16
New Mexico	Red Sands	23
Utah	Escalante Valley	17
Utah	Milford Flats South	18
Utah	Wah Wah Valley	21

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- New Mexico: Plants that are listed under the Endangered Plant Species Act (*New Mexico Statutes Annotated* [NMSA] 1978 § 75-6-1) or wildlife that are listed under the Wildlife Conservation Act (NMSA 1978 § 17-2-37)
- Utah: The State of Utah does not maintain a separate list of state-regulated species; however, the Utah Department of Wildlife Resources (UDWR) publishes a list of “wildlife species of concern” that conveys no regulatory status.

A summary of the state-listed species that may occur in the affected area of each SEZ is presented in Table J.4-1. Some state-listed species may also be federally listed under the ESA or as a BLM-designated sensitive species or considered to be a rare species.

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

State	SEZ	Total Number of State-Listed Species That May Occur in the Affected Area
Arizona	Brenda	10
Arizona	Bullard Wash	21
Arizona	Gillespie	18
California	Imperial East	7
California	Iron Mountain	4
California	Pisgah	3
California	Riverside East	6
California	Antonito Southeast	4
California	DeTilla Gulch	3
California	Fourmile East	2
Colorado	Los Mogotes East	4
Nevada	Amargosa Valley	19
Nevada	Dry Lake	18
Nevada	Delamar Valley	15
Nevada	Dry Lake Valley North	8
Nevada	East Mormon Mountain	8
Nevada	Gold Point	8
Nevada	Millers	5
New Mexico	Afton	10
New Mexico	Mason Draw	9
New Mexico	Red Sands	16
Utah	Escalante Valley ^a	0
Utah	Milford Flats South ^a	0
Utah	Wah Wah Valley ^a	0

^a The state of Utah does not maintain a separate list of state-regulated species.

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J.5 RARE SPECIES

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

1 A summary of the rare species that may occur in the affected area of each SEZ is
 2 presented in Table J.5-1 (The sum of the species in Table J.5-1 is greater than the total number of
 3 rare species because some species could occur in the affected area of more than one SEZ.) Some
 4 rare species may also be federally listed under the ESA or as a BLM-designated sensitive species
 5 or state protected.
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8 **J.6 SPECIAL STATUS SPECIES INFORMATION**
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10 This section presents information on all special status species that may occur in the
 11 region of the proposed SEZs. Table J.6-1 lists each of these species, their current status, a brief
 12 habitat description, and their potential to occur within the areas available for development under
 13 PEIS alternatives. (In the table, species are listed in this order: plants, fish, amphibians,
 14 invertebrates, birds, and mammals). Species accounts are presented for those species that may
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**TABLE J.5-1 Total Number of Rare Species That
 May Occur in the Affected Area of Each SEZ**

State	SEZ	Total Number of Rare Species That May Occur in the Affected Area
Arizona	Brenda	18
Arizona	Bullard Wash	34
Arizona	Gillespie	22
California	Imperial East	35
California	Iron Mountain	42
California	Pisgah	51
California	Riverside East	69
Colorado	Antonito Southeast	33
Colorado	DeTilla Gulch	30
Colorado	Fourmile East	58
Colorado	Los Mogotes East	48
Nevada	Amargosa Valley	49
Nevada	Dry Lake	60
Nevada	Delamar Valley	47
Nevada	Dry Lake Valley North	20
Nevada	East Mormon Mountain	28
Nevada	Gold Point	19
Nevada	Millers	17
New Mexico	Afton	30
New Mexico	Mason Draw	23
New Mexico	Red Sands	36
Utah	Escalante Valley	16
Utah	Milford Flats South	18
Utah	Wah Wah Valley	20

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

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants						
Abrams' spurge	<i>Chamaesyce abramsiana</i>	CA-S1	Restricted to deserts of southern California. Inhabits sandy substrates within creosote bush scrub communities in the Mojave and Sonoran Deserts at elevations below 3,000 ft.	x	x	x
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.	x	x	x
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 palo verde saguaro association of southwestern Arizona.	x	x	
Alamo beardtongue	<i>Penstemon alamosensis</i>	FWS-SC; NM-SC	Known from the Sacramento and San Andres Mountains in Dona 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.	x	x	x
Algodones Dunes sunflower	<i>Helianthus niveus</i> spp. <i>tephrodes</i>	BLM-S; CA-E; AZ-S2; CA-S1; FWS-SC	Primarily restricted to the Algodones Dunes in Imperial County, California. Inhabits desert sand dune habitats at elevations below 328 ft.	x	x	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
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.	x	x	x
Alpine braya	<i>Braya humilis</i>	CO-S2	Slightly disturbed microsites that are within exposed slopes, solifluction lobes, and scree slopes that have calcerous soils of Leadville limestone or Manitou dolomite derivation. Elevational ranges between 11,400 and 12,800 ft.	x		
Altai chickweed	<i>Stellaria irrigua</i>	CO-S2	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.	x	x	x
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 Desert scrub communities at elevations between 2,600 and 4,600 ft.	x	x	
Amargosa niterwort	<i>Nitrophila mohavensis</i>	ESA-E; CA-E; NV-P; NV-S1	Endemic to the Amargosa Valley in Inyo County, California, and Nye County, Nevada. It inhabits playas and alkaline wetlands near the Ash Meadows region.	x	x	x
American yellow lady's-slipper	<i>Cypripedium calceolus</i> spp. <i>parviflorum</i>	CO-S2	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.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
Angel trumpets	<i>Acleisanthes longiflora</i>	CA-S1	Restricted to California from a single occurrence in the Maria Mountains. Rocky, gravelly, loamy, or sandy calcerous, gypsiferous, or igneous-derived soils in deserts, grasslands, shrublands, or woodlands at elevations between 295 and 310 ft.	x	x	
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 Desert scrub and Creosote bush scrub communities at elevations between 1,650 and 1,970 ft.	x		
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.	x	x	x
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 Desert scrub communities, primarily on BLM lands in the Clay Hills area of critical environmental concern (ACEC). Elevation ranges between 2,000 and 2,600 ft.	x	x	
Aravaipa wood fern	<i>Thelypteris puberula</i> var. <i>sonorensis</i>	BLM-S; AZ-S2	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.	x	x	x
Arid tansy-aster	<i>Machaeranthera arida</i>	AZ-S1	Low sand dunes, alkaline flats, riverbanks, and sandy roadsides.	x	x	x
Arizona cliff rose	<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 creosote bush-crucifixion thorn habitat. Elevation ranges between 2,100 and 4,000 ft.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
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.	x	x	x
Arizona giant sedge	<i>Carex ultra</i>	BLM-S; AZ-S2	Shaded southeast-facing exposures of moist gravelly substrates near perennially wet springs and streams. Elevation ranges between 2,000 and 6,000 ft.	x	x	x
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.	x		
Arizona pholistoma	<i>Pholistoma auritum</i> var. <i>arizonicum</i>	CA-S1	Restricted to the Whipple Mountains in southeastern California. Inhabits creosote bush scrub and desert scrub communities at elevations between 900 and 2,700 ft.	x	x	
Arizona Sonoran rosewood	<i>Vauquelinia californica</i> spp. <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.	x	x	
Arizona willow	<i>Salix arizonica</i>	CO-S1	Subalpine wet meadows, low-gradient streambanks, 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.	x		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
Arkansas Canyon stickleaf	<i>Nuttallia densa</i>	CO-S2	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.	x		
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.	x	x	x
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.	x	x	x
Ash Meadows gumplant	<i>Grindelia fraxinopratis</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.	x	x	x
Ash Meadows ivesia	<i>Ivesia kingii eremica</i>	ESA-T; NV-P; NV-S2	Endemic to the Ash Meadows region in Nye County, Nevada, where it is confined to a single spring-fed wetland area with saline soils.	x	x	x
Ash Meadows sunray	<i>Enceliopsis nudicaulis corrugata</i>	ESA-T; NV-P; NV-S2	Endemic to the Ash Meadows region in Nye County, Nevada, where it is confined to a single spring-fed wetland area with saline soils.	x	x	x
Ash-gray paintbrush	<i>Castilleja cinerea</i>	ESA-T; BLM-S; CA-S2	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.	x	x	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
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.	x	x	
Autumn willow	<i>Salix serissima</i>	CO-S1	Marshes or fens associated with other <i>Salix</i> and <i>Carex</i> species. Elevation ranges between 7,800 and 9,300 ft.	x	x	x
Aztec milkvetch	<i>Astragalus proximus</i>	CO-S2	Rocky Mountain ponderosa pine woodland, Colorado Plateau pinyon-juniper woodland, intermountain-basins, semi-desert shrub-steppe, and Rocky Mountain gambel oak-mixed montane shrublands at elevations between 5,400 and 7,300 ft.	x	x	x
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, creosote bush scrub, and Sonoran Desert scrub communities at elevations below 330 ft.	x		
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.	x		
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.	x		
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.	x		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
Barstow woolly sunflower	<i>Eriophyllum mohavense</i>	BLM-S; CA-S2; FWS-SC	Known only from area surrounding Barstow, California. Inhabits sandy or rocky substrates associated with creosote bush scrub, chenopod scrub, and playas. Elevation ranges between 2,000 and 3,000 ft.	x	x	x
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.	x		
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.	x		
Bear Valley pyrrocoma	<i>Pyrrocoma 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.	x		
Bearded screwmoss	<i>Pseudocrossidium 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.	x	x	x
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.	x	x	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
Beaver Dam breadroot	<i>Pediomelum castoreum</i>	FWS-SC	Known from Arizona, California, and Nevada. Occurs in dry, sandy desert communities.	x	x	x
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.	x		
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.	x		
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.	x		
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.	x		
Bigelow onion	<i>Allium bigelovii</i>	AZ-SR; AZ-S2	Gentle slopes on open, dry rocky soil in grassland, chaparral, and Sonoran–Mohave Desert scrub communities. Elevation ranges between 2,000 and 5,000 ft.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
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. Rangewide 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.	x	x	
Birdbill day-flower	<i>Commelina dianthifolia</i>	CO-S1	Rocky soils at middle elevations in shade of pines and junipers. Elevation ranges between 4,000 and 7,000 ft.	x		
Bitter hymenoxys	<i>Hymenoxys odorata</i>	CA-S2	Sandy substrates within riparian and Sonoran Desert scrub communities. Also occurs within open flats, mesquite flats, ditches, and drainage areas and along roads and streams. Elevation ranges between 150 and 500 ft.	x	x	x
Black bog-rush	<i>Schoenus nigricans</i>	CA-S2	Endemic to California on alkaline or calcerous substrates within grasslands, marshes, springs, and swamps. Elevation ranges between 500 and 6,500 ft.	x	x	x
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.	x	x	x
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.	x	x	x
Blue giant hyssop	<i>Agastache foeniculum</i>	CO-S1	Mixed grass and tallgrass prairies, as well as moist woodlands, mesic meadows, lakeshores, and wet ditches.	x		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
Blue sand lily	<i>Triteleopsis palmeri</i>	BLM-S; AZ-SR; AZ-S1	Known from few occurrences in Yuma County, Arizona. Inhabits Sonoran Desert scrub communities and sand dunes at elevations between 250 and 1,660 ft. The species is not known to occur in the state of California.	x	x	
Blue-eyed grass	<i>Sisyrinchium demissum</i>	CO-S2	Moist areas, springs, stream banks, meadows, and forest seeps at elevations between 1,600 and 9,500 ft.	x	x	x
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.	x	x	x
Booth's evening-primrose	<i>Camissonia boothii</i> spp. <i>boothii</i>	CA-S2	Shrubby, open, or dry areas of Joshua and pinyon-juniper woodlands. Elevation ranges between 3,000 and 7,900 ft.	x	x	x
Brandegee's milkvetch	<i>Astragalus brandegeei</i>	BLM-S; CO-S1	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.	x	x	x
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%.	x	x	
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.	x	x	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
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.	x	x	
Broadleaf lupine	<i>Lupinus latifolius</i> spp. <i>leucanthus</i>	AZ-S1	Occurs along streams and moist soils of stream beds, oak-cottonwood communities, mixed shrub, and ponderosa pine forest communities. Elevation ranges between 4,800 and 7,000 ft.	x	x	
Broad-leaved twayblade	<i>Listera convallarioides</i>	CO-S2	Rich humus in open woods to boggy meadows with cool, circumneutral soils at elevations below 8,500 ft.	x	x	x
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 Desert scrub and creosote bush scrub communities. Elevation ranges between 50 and 1,100 ft.	x	x	x
Bullfrog Hills sweetpea	<i>Lathyrus hitchcockianus</i>	NV-S2	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.	x	x	x
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 Desert scrub and grassland communities. Elevations range between 3,500 and 3,700 ft.	x	x	x
California barrel cactus	<i>Ferocactus cylindraceus</i> var. <i>cylindraceus</i>	AZ-SR	Gravelly or rocky hillsides, canyon walls, alluvial fans, and desert washes at elevations between 200 and 2,900 ft.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
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.	x	x	
California ditaxis	<i>Ditaxis serrata</i> var. <i>californica</i>	CA-S2	Sonoran Desert scrub and creosote bush scrub communities at elevations between 100 and 3,300 ft.	x	x	x
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.	x	x	x
California satintail	<i>Imperata brevifolia</i>	CA-S2	Occurs in chaparral, coastal sage scrub, creosote bush, desert scrub, mesic riparian scrub, and alkaline meadow and seep communities. Elevation ranges between 0 and 1,650 ft.	x	x	x
California saw-grass	<i>Cladium californicum</i>	CA-S2	Alkaline, freshwater, and riparian habitats including meadows, marshes, swamps, and seeps. Elevation ranges between 200 and 2,000 ft.	x	x	x
California snakewood	<i>Colubrina californica</i>	AZ-S2	Sandy desert washes, steep gullies, and rocky or gravelly slopes at elevations below 3,000 ft.	x	x	x
Castetter's milkvetch	<i>Astragalus castetteri</i>	FWS-SC; NM-SC	Endemic to New Mexico from the Caballo and San Andres Mountains in Dona 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.	x	x	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
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.	x		
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.	x	x	x
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.	x	x	x
Charleston grounddaisy	<i>Townsendia jonesii</i> var. <i>tumulosa</i>	BLM-S; FWS-SC	Endemic to Nevada, where the species is known from 27 occurrences encompassing an area of less than 10 acres. Occurs in open, sparsely vegetated calcareous areas; on shallow, gravelly carbonate soils of slopes; and on exposed knolls in forest clearings. Most commonly associated with montane conifer habitat but will also inhabit pinyon-juniper and lower subalpine conifer communities, recurring on knolls of white, alkaline, calcareous, silty lacustrine deposits of the upper shadscale/mixed-shrub and lower sagebrush zones. Elevation ranges between 5,200 and 11,000 ft.	x	x	x
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.	x		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
Cienega Seca oxytheca	<i>Acanthoscyphus parishii</i> var. <i>cienegensis</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.	x		
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 creosote bush scrub communities at elevations between 6,500 and 12,000 ft.	x		
Clokey eggvetch	<i>Astragalus oophorus</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 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.	x		
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.	x		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
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.	x		
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.	x	x	x
Clokey's cryptantha	<i>Cryptantha clokeyi</i>	BLM-S; CA-S1	Restricted to few locations near Barstow, California. Occurs on Mojave Desert scrub on sandy or gravelly soils at elevations between 2,625 and 2,950 ft.	x	x	x
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 creosote bush scrub or the periphery of pinyon-juniper woodlands. Elevation ranges between 230 and 1,120 ft.	x	x	
Coachella Valley milkvetch	<i>Astragalus lentiginosus</i> var. <i>coachellae</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 near the SEZ. Occupies sandy areas in washes and sometimes on dunes in creosote bush scrub or in blow sand areas around valley margins. Elevation ranges between 160 and 2,130 ft.	x	x	x
Colorado larkspur	<i>Delphinium ramosum</i> var. <i>alpestre</i>	CO-S2; NM-S2	Meadows, aspen woodlands, and <i>Artemisia</i> scrub communities at elevations between 6,900 and 10,500 ft.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
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.	x	x	
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.	x		
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.	x	x	x
Coulter's goldfields	<i>Lasthenia glabrata</i> spp. <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.	x	x	x
Coves' cassia	<i>Senna covesii</i>	CA-S2	Sonoran Desert dry washes and slopes with sandy substrates within desert scrub and creosote bush scrub communities. Elevation ranges between 1,000 and 3,500 ft.	x	x	x
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.	x		
Creamy blazing star	<i>Mentzelia tridentata</i>	BLM-S; CA-S2	Inhabits Mojave Desert creosote bush scrub communities on rocky and sandy substrates at elevations below 3,900 ft.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
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.	x		
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 budsage communities on alkaline limestone substrates at elevations between 4,500 and 6,000 ft.	x		
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.	x		
Cushenbury milkvetch	<i>Astragalus albens</i>	ESA-E; BLM-S; CA-S1	A limestone endemic, 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.	x		
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.	x		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
Dainty moonwort	<i>Botrychium crenulatum</i>	BLM-S; NV-S1	Widely distributed throughout western North America in high-elevation montane habitats (between 8,000 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.	x		
Darwin rock-cress	<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.	x	x	x
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.	x	x	x
Death Valley beardtongue	<i>Penstemon fruticiformis</i> spp. <i>amargosae</i>	BLM-S; FWS-SC; NV-S2	Known only from the Death Valley region of California and southern Nevada. It inhabits Mojave desert scrub communities at elevations between 2,800 ft and 4,600 ft.	x	x	x
Death Valley mormon tea	<i>Ephedra funerea</i>	AZ-S1	Occurs on sandy, dry soils within upper, shrub-covered desert slopes and valley floor, fans, washes, rocky scrub areas, and sometimes on stabilized dunes in association with creosote bush scrub communities at an elevations between 1,150 and 5,580 ft.	x	x	
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.	x	x	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
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.	x	x	
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, creosote bush scrub, Mojave Desert scrub, and pinyon-juniper woodland habitats at elevations between 3,900 and 5,150 ft.	x	x	x
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.	x	x	x
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 creosote bush scrub and Sonoran Desert scrub communities. Elevation ranges between 1,300 and 2,600 ft.	x		
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.	x	x	x
Desert pincushion	<i>Coryphantha chlorantha</i>	CA-S1	Occurs on gravelly bajadas, limestone or dolomite rocky slopes associated with desert scrub communities within pinyon-juniper woodlands and Joshua tree woodlands. Elevation ranges between 148 and 7,875 ft.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
Desert spike-moss	<i>Selaginella eremophila</i>	CA-S2	Gravelly or rocky slopes within creosote bush scrub and Sonoran Desert scrub communities. Elevation ranges between 650 and 2,950 ft.	x	x	x
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 desert scrub communities at elevations below 650 ft.	x		
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.	x	x	x
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.	x	x	
Dwarf germander	<i>Teucrium cubense</i> ssp. <i>depressum</i>	CA-S2	Desert dunes, playas, riparian, creosote bush scrub, and desert scrub communities. Elevation ranges between 150 and 1,300 ft.	x	x	x
Dwarf hawksbeard	<i>Askellia nana</i>	CO-S2	Steep alpine scree and talus slopes at elevations between 10,000 and 14,000 ft.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
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.	x	x	x
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.	x	x	
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 Desert scrub, non-saline playas, creosote bush scrub, and Sonoran Desert scrub 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.	x	x	x
Ewan's cinquefoil	<i>Potentilla glandulosa</i> spp. <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.	x		
Fendler's Townsend-daisy	<i>Townsendia fendleri</i>	CO-S2	Sandy or rocky soils within desert scrub and pinyon-juniper woodlands. Elevation ranges between 3,900 and 7,900 ft.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
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.	x	x	
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.	x	x	
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.	x	x	
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 Desert scrub communities at elevations below 650 ft.	x	x	x
Fragile rockbrake	<i>Cryptogramma stelleri</i>	BLM-S; CO-S2	Moist soils on shaded limestone cliffs at elevations greater than 7,000 ft and often in association with mosses.	x	x	x
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.	x		
Frisco buckwheat	<i>Eriogonum soredium</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.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
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.	x	x	x
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.	x	x	x
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.	x	x	
Glandular ditaxis	<i>Ditaxis claryana</i>	CA-S1	Sandy substrates within desert scrub communities at elevations below 1,525 ft.	x	x	x
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.	x	x	x
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.	x	x	x
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.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
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.	x		
Golden blazing star	<i>Nuttallia chrysantha</i>	CO-S2	Barren slopes of limestone, shale, or clay at elevations between 5,120 and 5,700 ft.	x		
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.	x		
Golden columbine	<i>Aquilegia chrysantha</i> var. <i>chaplinei</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.	x	x	x
Grama 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.	x	x	x
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.	x	x	x
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.	x	x	x
Green spleenwort	<i>Asplenium trichomanes-ramosum</i>	CO-S1	Limestone and other basic rocks at elevations between 9,850 and 13,100 ft.	x		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
Greene's milkweed	<i>Asclepias uncialis</i> spp. <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.	x	x	
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.	x	x	
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 Desert scrub and creosote bush scrub communities at elevations below 2,300 ft.	x	x	x
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 area of critical ecological concern (ACEC) in Moffat County, outside the analysis area (>50 mi).	x	x	
Halfmoon milkvetch	<i>Astragalus allochrous</i> var. <i>playanus</i>	CO-S1	Gravelly washes and sandbars of summer-dry streams at elevations between 3,000 and 4,000 ft.	x	x	x
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 creosote-bursage, blackbrush, and mixed-shrub habitat communities. Elevation ranges between 3,000 and 5,600 ft.	x	x	x
Hall fescue	<i>Festuca hallii</i>	CO-S1	Alpine tundra and dry subalpine grasslands at elevations between 11,000 and 12,000 ft.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
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.	x	x	x
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 desert scrub communities. Elevation ranges between 0 and 2,325 ft.	x	x	x
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.	x	x	x
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.	x		
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 desert scrub communities. Elevation ranges between 1,300 and 3,200 ft.	x	x	x
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.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
<i>Plants (Cont.)</i>						
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.	x	x	
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.	x		
Jackass-clover	<i>Wislizenia refracta</i> spp. <i>refracta</i>	CA-S1	Known from the Mojave and northern Sonoran Deserts. Inhabits dunes, sandy washes, roadsides, and playas within creosote bush scrub, alkali sink, or desert scrub communities. Elevation ranges between 2,000 and 2,600 ft.	x	x	x
Jaeger beardtongue	<i>Penstemon thompsoniae</i> spp. <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.	x	x	x
James' cat's-eye	<i>Oreocarya cinerea</i> var. <i>pustulosa</i>	CO-S1	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.	x	x	x
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.	x	x	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
Jone's 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.	x	x	x
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 Desert scrub, pine-oak-juniper woodland, montane coniferous forests, and pinyon-juniper woodland communities. Elevation ranges between 4,900 and 9,200 ft.	x		
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.	x	x	x
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.	x	x	
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.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
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 desert scrub habitats on granitic-sandy soils. Elevation ranges between 3,000 and 3,800 ft	x		
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.	x	x	x
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.	x	x	x
Latimer’s woodland-gilia	<i>Saltugilia latimeri</i>	BLM-S; CA-S2	Mojave Desert scrub communities, pinyon-juniper woodlands, and washes on rocky or sandy substrates at elevations between 1,300 and 6,500 ft.	x	x	x
Leadville milkvetch	<i>Astragalus molybdenus</i>	CO-S2	Rocky slopes and turf hillsides at elevations between 11,400 and 13,200 ft. Substrates are typically limestone.	x	x	
Least moonwort	<i>Botrychium simplex</i>	CO-S1	Open habitats, including pastures, meadows, orchards, prairies, wetlands, fens, sand dunes, and in lake and stream edge vegetation.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
Leathery grape fern	<i>Botrychium multifidum</i>	CO-S1	Wet meadows, forest edges, lake shores, 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.	x	x	x
Lemon lily	<i>Lilium parryi</i>	BLM-S; CA-S2; FWS-SC	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.	x		
Lesser bladderwort	<i>Utricularia minor</i>	CO-S2	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.	x		
Lime-loving willow	<i>Salix lanata</i> spp. <i>calcicola</i>	CO-S1	Calcareous lakeshores at elevations near 12,000 ft.	x	x	
Limestone beardtongue	<i>Penstemon calcareus</i>	BLM-S; CA-S2	Inhabits Mojave Desert scrub communities, pinyon-juniper forests, and Joshua tree woodlands on rocky carbonate substrates. Elevation ranges between 3,280 and 6,550 ft.	x	x	x
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.	x	x	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
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 creosote bush scrub and Joshua tree woodland communities at elevations less than 6,900 ft.	x	x	x
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.	x	x	x
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.	x	x	x
Lobed ground-cherry	<i>Physalis lobata</i>	CA-S1	Known from the northeastern Sonoran and southeastern Mojave Deserts. Inhabits decomposed granitic substrates within creosote bush scrub, alkali sink, desert scrub, and playas communities. Elevation ranges between 1,650 and 2,600 ft.	x	x	x
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.	x		
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.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
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 creosote bush scrub communities at elevations below 3,300 ft.	x	x	
Long-stem evening-primrose	<i>Oenothera longissima</i>	CA-S1	Restricted to Inyo and San Bernardino Counties in California. Inhabits seasonally mesic desert scrub, creosote bush scrub, and pinyon-juniper woodland habitat. Elevation ranges between 3,300 and 5,500 ft.	x	x	x
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.	x	x	
Many-flowered gilia	<i>Ipomopsis multiflora</i>	CO-S1	Open sites, desert shrublands, and woodlands.	x	x	x
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.	x	x	x
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.	x	x	x
Marsh cinquefoil	<i>Comarum palustre</i>	CO-S1	Lake shores, bogs, swamps, and stream banks in mucky, peaty soil.	x	x	x
Marsh-meadow indian-paintbrush	<i>Castilleja lineata</i>	CO-S1	Montane woodlands and meadows at elevations between 8,500 and 12,000 ft.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
McKelvey's agave	<i>Agave mckelveyana</i>	AZ-SR	Endemic to Arizona in dry scrubland between 3,000 and 6,000 ft.	x	x	x
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.	x	x	x
Mecca-aster	<i>Xylorhiza cognata</i>	BLM-S; CA-S2	Restricted to the Indio Hills and Mecca Hills in Riverside County, California. Inhabits desert scrub on steep canyon slopes, at the bases of canyons, and in canyon washes at elevations below 1,300 ft.	x		
Mescalero milkwort	<i>Polygala rimulicola</i> var. <i>mescalorum</i>	BLM-S; NM-E; FWS-SC; NM-S1	Known only from the San Andres Mountains in Dona Ana County, New Mexico. Occurs in rock crevices in sandy limestone cliffs at elevations between 5,700 and 6,300 ft.	x		
Mingan's moonwort	<i>Botrychium minganense</i>	CO-S1	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.	x	x	x
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.	x	x	x
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.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
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.	x		
Money wild buckwheat	<i>Eriogonum nummularre</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.	x	x	x
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.	x	x	x
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.	x	x	x
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.	x	x	
Mountain bladder fern	<i>Cystopteris montana</i>	CO-S1	Moist, rich soil in closed-canopied spruce-fir forests at elevations between 9,000 and 11,000 ft.	x	x	x
Mountain whitlow-grass	<i>Draba rectifracta</i>	CO-S2	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.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
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.	x	x	
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.	x	x	x
Mud sedge	<i>Carex limosa</i>	CO-S2	Sphagnum bogs, wet meadows, and shores at elevations below 6,500 ft.	x		
Munz's cholla	<i>Opuntia munzii</i>	BLM-S; CA-S1; FWS-SC	Gravelly or sandy to rocky soils, often on lower bajadas, washes, and flats. Also occurs in hills and canyon sides. Occurs in Sonoran Desert creosote bush shrub communities at elevations below 3,280 ft.	x	x	x
Narrow-leaved cottonwood	<i>Populus angustifolia</i>	CA-S2	Occurs in upland riparian forest habitats at elevations between 3,900 and 5,900 ft.	x	x	x
Narrow-leaved psorothamnus	<i>Psorothamnus fremontii</i> var. <i>attenuates</i>	CA-S2	Occurs on volcanic substrates of slopes, flats, and canyons within Sonoran Desert scrub communities at elevations between 1,100 and 3,000 ft.	x	x	x
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.	x	x	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
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.	x		
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.	x	x	x
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.	x	x	x
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.	x	x	x
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.	x	x	
New Mexico cliff fern	<i>Woodsia neomexicana</i>	CO-S2	Cliffs and rocky slopes usually on sandstone or igneous substrates. Elevations range between 7,875 and 11,500 ft.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
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.	x	x	
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.	x	x	x
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 Desert scrub, creosote bush scrub, and pinyon-juniper woodland communities. Elevation ranges between 4,500 and 9,900 ft.	x	x	x
Nodding rockdaisy	<i>Perityle cernua</i>	BLM-S; FWS-SC; NM-SC; NM-S2	Endemic to the Organ Mountains in Dona Ana County, New Mexico. Occurs on volcanic or igneous cliffs at elevations between 5,000 and 8,800 ft.	x	x	
Northern moonwort	<i>Botrychium pinnatum</i>	CO-S1	Grassy slopes, stream banks, and woodlands at elevations below 8,200 ft.	x	x	x
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.	x	x	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
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.	x	x	
Orcutt's linanthus	<i>Linanthus orcuttii</i>	BLM-S; CA-S2; FWS-SC	Chaparral and lower montane coniferous forests in gravelly clearings and disturbed open areas. Elevation ranges between 3,280 and 6,550 ft.	x		
Orcutt's woody-aster	<i>Xylorhiza orcuttii</i>	BLM-S; CA-S2	Inhabits Sonoran Desert scrub, 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.	x		
Organ Mountains evening-primrose	<i>Oenothera organensis</i>	BLM-S; FWS-SC; NM-SC; NM-S2	Endemic to the Organ Mountains in Dona 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.	x		
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.	x		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
Organ Mountains paintbrush	<i>Castilleja organorum</i>	BLM-S; FWS-SC; NM-SC	Endemic to the Organ Mountains in Dona 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.	x		
Organ Mountains pincushion cactus	<i>Escobaria organensis</i>	BLM-S; NM-E; FWS-SC; NM-S2	Endemic to the Franklin and Organ Mountains in Dona Ana County, New Mexico. Inhabits granite and limestone substrates in desert scrub and pinyon-juniper woodlands at elevations between 4,400 and 8,530 ft.	x		
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 Desert scrub plant communities.	x	x	
Orocopia sage	<i>Salvia greatae</i>	BLM-S; CA-S2	Inhabits creosote bush scrub communities and dry washes at elevations less than 2,600 ft.	x	x	x
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.	x		
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.	x		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
Pagosa bladderpod	<i>Lesquerella pruinosa</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.	x		
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.	x		
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.	x		
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.	x		
Pale moonwort	<i>Botrychium pallidum</i>	CO-S2	Open exposed hillsides, burned or cleared areas, or old mining situations at elevations between 9,800 and 10,600 ft.	x	x	x
Palmer's mariposa-lily	<i>Calochortus palmeri</i> var. <i>palmeri</i>	BLM-S; CA-S2; FWS-SC	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.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
Panamint Mountains bedstraw	<i>Galium hilendiae</i> spp. <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 desert scrub and pinyon-juniper woodlands at elevations between 4,000 and 11,200 ft.	x	x	x
Parish's alkali grass	<i>Puccinellia parishii</i>	BLM-S; CA-S1	Inhabits meadows, seeps, and moist areas near springs on alkaline soils at elevations between 2,300 and 7,350 ft.	x	x	x
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.	x		
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.	x	x	x
Parish's checkerbloom	<i>Sidalcea hickmanii</i> spp. <i>parishii</i>	BLM-S; CA-S1	Inhabits chaparral communities and montane coniferous forests at elevations between 3,280 and 8,200 ft.	x		
Parish's club-cholla	<i>Grusonia parishii</i>	CA-S2	Silty, sandy, or gravelly flats, dunelets, and hills within Joshua tree woodlands, creosote bush scrub, and desert scrub communities. Elevation ranges between 100 and 5,000 ft.	x	x	x
Parish's daisy	<i>Erigeron parishii</i>	ESA-T; BLM-S; CA-S2	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.	x		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
Parish's desert-thorn	<i>Lycium parishii</i>	CA-S2	Regionally endemic in southeastern California, occurring on coastal sage scrub, creosote bush scrub, and Sonoran Desert scrub communities. Elevation ranges between 1,000 and 3,300 ft.	x		
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.	x		
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-crust 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.	x	x	x
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.	x		
Parish's rock-cress	<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.	x		
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.	x		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
Parry's crazy-weed	<i>Oxytropis parryi</i>	CO-S1	Gravelly, calcareous soil on exposed ridgetops in the alpine zone. Occurs within the analysis area at elevations between 8,200 and 10,200 ft.	x	x	x
Parry's spurge	<i>Chamaesyce parryi</i>	CA-S1	Restricted to the vicinity of Kelso, California. Inhabits desert dunes, creosote bush scrub, and Mojave Desert scrub at elevations between 1,300 and 2,400 ft.	x		
Peck sedge	<i>Carex peckii</i>	CO-S1	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.	x	x	x
Pedate checker-mallow (bird-foot checkerbloom)	<i>Sidalcea pedata</i>	ESA-E; BLM-S; CA-E; CA-S1	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.	x		
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 Desert scrub plant community. It most often grows in conically shaped hollows on the leeward side of the dunes. Elevation ranges between 164 and 820 ft.	x	x	
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 Desert scrub communities at elevations below 2,000 ft.	x	x	
Philadelphia fleabane	<i>Erigeron philadelphicus</i>	CO-S1	Disturbed sites, low prairies, and stream banks with open and moist conditions.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
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.	x	x	x
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.	x		
Pink fairy-duster	<i>Calliandra eriophylla</i>	CA-S2	Sandy or rocky substrates in creosote and desert scrub communities. Elevation ranges between 390 and 4,900 ft.	x	x	x
Pinyon rock-cress	<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.	x		
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> .	x	x	x
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.	x		
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.	x		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
Playa milkvetch	<i>Astragalus allochrous</i> var. <i>playanus</i>	CA-S1	Known from the eastern Mojave Desert on sandy soils within desert scrub communities at elevations near 2,600 ft.	x	x	x
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.	x		
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.	x	x	x
Prairie violet	<i>Viola pedatifida</i>	CO-S2	Rocky sites within prairies, open woodlands, and forest openings at elevations between 5,800 and 8,800 ft.	x	x	x
Prairie wedge grass	<i>Sphenopholis obtusata</i>	CA-S2	Cismontane woodland, foothill woodland, streambanks, ponds, and mesic meadows and seeps. Elevation ranges between 990 and 6,500 ft.	x	x	x
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.	x		
Pueblo goldenweed	<i>Oonopsis puebloensis</i>	CO-S2	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.	x		
Purple-nerve cymopterus	<i>Cymopterus multinervatus</i>	CA-S2	Occurs on sandy or gravelly slopes within desert scrub, Joshua tree woodland, and pinyon-juniper woodland communities. Elevation ranges between 2,600 and 5,900 ft.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
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.	x		
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.	x		
Retorse sedge	<i>Carex retrorsa</i>	CO-S1	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.	x	x	x
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.	x	x	x
Ripley's milkvetch	<i>Astragalus ripleyi</i>	BLM-S; CO-S2	Mixed conifer and shrubland habitats on rocky substrates at elevations above 8,000 ft.	x	x	x
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.	x		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
<i>Plants (Cont.)</i>						
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 calcerous material. Inhabits mixed desert scrub, creosote bush, and blackbrush communities at elevations between 2,500 and 5,800 ft.	x	x	x
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.	x	x	x
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.	x		
Rock sandwort	<i>Minuartia stricta</i>	CO-S1	Moist, granitic gravels sedge meadows, heath, alpine, or arctic tundra. Elevation ranges from 300 to 12,500 ft.	x	x	x
Rockcress draba	<i>Draba globosa</i>	CO-S1	Alpine meadows, granitic talus slopes, and rock crevices at elevations between 11,500 and 12,500 ft.	x		
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.	x	x	x
Rocky Mountain bladderpod	<i>Lesquerella calcicola</i>	CO-S2	Shale bluffs, limy hillsides, gypseous knolls and ravines, and various calcareous substrates at elevations between 5,000 and 7,500 ft.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
<i>Plants (Cont.)</i>						
Rocky Mountain blazing-star	<i>Liatris ligulistylis</i>	CO-S1	Dry, rocky slopes, rocky woodlands, gravelly ground in valleys, stream sides, prairies, and open moist sites.	x	x	x
Rollins' twinpod	<i>Physaria rollinsii</i>	CO-S2	Regionally endemic to approximately 1,439 mi ² in southwestern Colorado. Occurs on granitic talus, open knolls, limestone chiprock, steep slopes, clay banks, and sagebrush, and in close proximity to granite boulders.	x		
Rosy two-tone beardtongue	<i>Penstemon bicolor</i> spp. <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 creosote-bursage, blackbrush, and mixed-shrub communities. Elevation ranges between 1,800 and 4,850 ft.	x	x	x
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.	x	x	
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.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
<i>Plants (Cont.)</i>						
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 creosote-bursage zone at elevations between 1,300 and 2,450 ft.	x	x	x
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.	x	x	
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.	x		
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.	x		
Sacramento groundsel	<i>Senecio sacramentanus</i>	FWS-SC; NM-SC	Known only from the Sacramento-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.	x	x	
Sacramento Mountain fleabane	<i>Erigeron rybius</i>	FWS-SC; NM-SC	Known only from the Sacramento-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.	x	x	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
Sacramento Mountains 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.	x	x	x
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.	x	x	
Saguaro cactus	<i>Carnegiea 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 Desert scrub and creosote scrub communities at elevations between 160 and 4,900 ft.	x	x	x
Salt Spring checkerbloom	<i>Sidalcea neomexicana</i>	CA-S2	Alkaline or mesic substrates within riparian wetlands, marshes, springs, chaparral, coastal scrub, coniferous forest, desert scrub, and playas habitats. Elevation ranges between 50 and 5,000 ft.	x	x	x
San Bernardino aster	<i>Symphyotrichum 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.	x		
San Bernardino blue grass	<i>Poa atropurpurea</i>	ESA-E; BLM-S; CA-S2	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.	x		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
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.	x		
San Bernardino Mountains bladderpod	<i>Lesquerella kingii</i> spp. <i>Bernardina</i>	ESA-E; BLM-S; CA-S1	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.	x		
San Bernardino Mountains dudleya	<i>Dudleya abramsii</i> spp. <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.	x		
San Bernardino Mountains monkeyflower	<i>Mimulus exiguous</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.	x		
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.	x		
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.	x		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
San Bernardino rock- cress	<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.	x		
Sand evening-primrose	<i>Camissonia arenaria</i>	CA-S2	Sandy washes and rocky slopes within Sonoran Desert scrub communities at elevations below 3,000 ft.	x	x	x
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.	x		
Sand food	<i>Pholisma sonorae</i>	BLM-S; AZ-HS; AZ-S1; CA-S2; FWS-SC	Inhabits Sonoran sand dune habitats at elevations below 650 ft.	x	x	x
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 semi-stabilized sand dunes among open Chihuahuan desert scrub. Often associated with sparse cover of grasses. Elevation ranges between 3,800 and 4,300 ft.	x	x	x
Sandberg pincushion cactus	<i>Escobaria sandbergii</i>	FWS-SC; NM-SC; NM-S2	Known from the San Andres and Fra Cristobal Mountains in Dona Ana and Sierra Counties, New Mexico. Occurs on rocky limestone soils in Chihuahuan desert scrub and open oak and pinyon-juniper woodlands at elevations between 4,200 and 7,400 ft.	x	x	x
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.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
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.	x	x	x
Santa Rosa Mountains leptosiphon	<i>Leptosiphon floribundus</i> spp. <i>hallii</i>	BLM-S; CA-S1	Endemic to the Santa Rosa Mountains of southern California. Inhabits Sonoran Desert scrub and pinyon and juniper woodland communities at elevations between 3,280 and 6,560 ft.	x		
Scalloped moonwort	<i>Botrychium crenulatum</i>	CA-S2	Scattered distribution in southern California from bogs, fens, marshes, swamps, meadows, and seeps within yellow pine forests and montane coniferous forests. Elevation ranges between 4,150 and 10,750 ft.	x	x	
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.	x	x	
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 desert scrub communities, occasionally on rocky benches, washes, or bajadas. Elevation ranges between 3,300 and 3,600 ft.	x	x	x
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-ac 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.	x		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
Schott wire lettuce	<i>Stephanomeria schottii</i>	BLM-S; AZ-S2	Endemic to sand dunes of the Gran Desierto region. Occurs on semi-stabilized sand dunes with creosote, white bursage, and big galleta grass. Elevation ranges between 350 and 800 ft.	x	x	
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.	x		
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.	x	x	x
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 in on carbonate alluvial gravels, particularly along drainages, roadsides, and in other microsites with enhanced runoff, at elevations between 4,400 and 6,000 ft.	x	x	x
Shivwit's milkvetch	<i>Astragalus ampullarioides</i>	ESA-E; UT-S1	Endemic to Washington County, Utah. Inhabits warm desert shrub, creosote bush, and juniper communities on gypsiferous soils on the Chinle Formation. Occurs at elevations between 3,400 and 4,000 ft.	x		
Shockley's rock-cress	<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.	x		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
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.	x		
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.	x		
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.	x		
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 creosote-bursage communities. Elevation ranges between 1,200 and 2,400 ft.	x	x	x
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.	x	x	x
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, creosote bush scrub, and desert scrub communities at elevations below 1,300 ft.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
Slender sedge	<i>Carex lasiocarpa</i>	CO-S1	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.	x	x	x
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.	x		
Slender-spined all-thorn	<i>Koeberlinia spinosa</i> spp. <i>tenuispina</i>	CA-S2	Known from the Chocolate Mountains of the Sonoran Desert in southeastern California. Occurs in riparian woodland, creosote bush scrub, and Sonoran Desert scrub communities. Elevation ranges between 500 and 1,675 ft.	x	x	
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 Desert scrub and creosote bush scrub communities at elevations near 400 ft.	x		
Small-flowered androstephium	<i>Androstephium breviflorum</i>	CA-S1	Dry sandy to rocky soil substrates. Occurs on desert dunes within creosote bush scrub and Mojave Desert scrub at elevations between 720 and 2,100 ft.	x	x	x
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, creosote bush scrub, and desert scrub. Elevation ranges between 1,800 and 2,800 ft.	x		
Small-winged sedge	<i>Carex stenoptila</i>	CO-S2	Open, rocky sites within coniferous woodlands at elevations between 7,900 and 9,500 ft.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
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.	x	x	x
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.	x		
Smooth figwort	<i>Scrophularia laevis</i>	BLM-S; FWS-SC; NM-SC; NM-S2	Known from the Organ Mountains in Dona 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.	x		
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.	x	x	x
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.	x		
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.	x		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
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.	x		
Southern mountains skullcap	<i>Scutellaria bolanderi</i> spp. <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.	x		
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.	x	x	x
Spear-leaf matelea	<i>Matelea parvifolia</i>	CA-S2	Regionally endemic to southeastern California. Occurs on rocky substrates within creosote bush and desert scrub communities at elevations between 1,450 and 3,600 ft.	x	x	x
Spiny cliff-brake	<i>Pellaea truncata</i>	CA-S2	Rocky slopes and cliffs of volcanic or granitic derivation within pinyon-juniper woodlands. Elevation ranges between 4,000 and 7,000 ft.	x	x	x
Spiny-spored quillwort	<i>Isoetes setacea</i> ssp. <i>muricata</i>	CO-S2	In sandy sediment of shallow water and shores of lakes as well as sluggish, acidic streams.	x		
Spreading sandwort	<i>Arenaria lanuginosa</i> spp. <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.	x		
Spring-loving centaury	<i>Centaurium 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.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
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.	x	x	x
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.	x	x	x
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 semi-stabilized sand dunes among open Chihuahuan desert scrub. Often associated with sparse cover of grasses. Elevation ranges between 5,500 and 9,400 ft.	x	x	
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 creosote bush scrub communities. Elevation ranges between 3,900 and 6,550 ft.	x	x	x
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.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
Straw-top cholla	<i>Opuntia echinocarpa</i>	AZ-SR	Sandy or gravelly soil of benches, slopes, mesas, flats, and washes at elevations between 1,000 and 6,700 ft.	x	x	x
Strigose easter-daisy	<i>Townsendia strigosa</i>	CO-S1	Open sites, sands, shales, and clays with desert scrub, junipers, pinyons at elevations between 4,900 and 6,500 ft.	x		
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.	x	x	x
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.	x		
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 an elevations between 2,500 and 7,500 ft.	x	x	x
Three-awned grama	<i>Bouteloua trifida</i>	CA-S2	Occurs in eastern Mojave Desert mountains on dry, rocky, often calcareous slopes within desert scrub communities. Elevation ranges between 2,300 and 6,500 ft.	x	x	x
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.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
Thurber pilostyles	<i>Pilostyles thurberi</i>	AZ-S2	Known from the Sonoran Desert in southern Arizona and southern California. Occurs in Sonoran Desert scrub communities at elevations below 1,200 ft.	x		
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 creosote bush and desert scrub communities. Elevation ranges between 1,950 and 5,200 ft.	x	x	x
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.	x	x	x
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.	x		
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.	x		
Todsen's 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.	x	x	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
<i>Plants (Cont.)</i>						
Tonopah milkvetch	<i>Astragalus pseudiodanthus</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.	x	x	x
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	x	x	x
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.	x	x	x
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.	x		
Tumamoc globeberry	<i>Tumamoca macedougalii</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.	x	x	x
Tundra saxifrage	<i>Muscaria monticola</i>	CO-S1	Rock outcrops, crevices, talus, scree slopes, rocky tundra, fellfields, nunataks, and stream banks at elevations below 14,700 ft.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
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.	x	x	
Twinevine	<i>Sarcostemma crispum</i>	CO-S1	In rocky soils on hills, open-wooded slopes, arid slopes, and canyons at elevations between 5,250 and 6,500 ft.	x		
Upright burrhead	<i>Echinodorus berteroi</i>	AZ-S1	Clay soils of wet ditches, streams, and shallow ponds at elevations below 2,600 ft. Populations in California are not listed or ranked.	x		
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.	x	x	
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.	x	x	x
Utah swallowwort	<i>Cynanchum utahense</i>	AZ-S2	Sandy or gravelly substrates within Sonoran and Mojave Desert scrub communities. Elevation ranges between 160 and 4,700 ft.	x	x	x
Varied fishhook cactus	<i>Mammillaria viridiflora</i>	AZ-SR	Known throughout Arizona and western New Mexico. In sandy granitic soils of high hills and mountain sides in oak woodlands and at edge of forest at elevations between 5,000 and 6,888 ft.	x	x	
Vasey's bitter-weed	<i>Hymenoxys vaseyi</i>	FWS-SC; NM-SC; NM-S2	Known from the Organ and San Andres Mountains in Dona 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.	x		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
Veyo milkvetch	<i>Astragalus ensiformis</i> var. <i>gracilior</i>		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.	x	x	x
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 Dona Ana Counties, New Mexico. Occurs on loamy soils of desert grassland on broad limestone benches at elevations between 4,500 and 6,500 ft.	x	x	x
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 creosote bush scrub, Joshua tree woodland, and desert scrub habitats. Elevation ranges between 2,500 and 5,000 ft.	x		
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.	x	x	x
Wahatoya Creek larkspur	<i>Delphinium robustum</i>	CO-S2	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.	x	x	x
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 desert scrub communities at elevations between 2,100 and 2,600 ft.	x		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
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.	x		
Weasel phacelia	<i>Phacelia mustelina</i>	NV-S2	Mojave desert scrub and pinyon-juniper woodlands on volcanic or gravelly substrates at elevations between 5,000 and 5,500 ft.	x	x	x
Western moonwort	<i>Botrychium hesperium</i>	CO-S2	Early successional habitats with coarse gravelly soil that undergo periodic disturbance. These include grassy mountain slopes, snow fields, road ditches, and gneiss outcrops and cliffs, as well as old fields at elevations between 650 and 11,300 ft.	x	x	x
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.	x		
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.	x	x	x
White bog adder's-mouth	<i>Malaxis monophyllos</i> spp. <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.	x		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
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.	x		
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.	x		
White Mountain larkspur	<i>Delphinium novomexicanum</i>	FWS-SC; NM-SC; NM-S2	Canyon bottoms, forest meadows, and road banks in lower and upper montane coniferous forest at elevations between 7,200 and 11,200 ft.	x		
White Mountain lupine	<i>Lupinus sierrae-blancae</i>	FWS-SC; NM-SC	Meadows and roadsides in pine and fir forest at elevations between 5,900 and 10,000 ft.	x		
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.	x	x	x
White-bracted spineflower	<i>Chorizanthe xanti</i> var. <i>leucotheca</i>	BLM-S; CA-S2	Inhabits Mojave Desert scrub communities and pinyon-juniper woodlands on sandy or gravelly soils. Occurs at elevations below 3,925 ft.	x	x	x
White-margined beardtongue	<i>Penstemon albomarginatus</i>	BLM-S; FWS-SC; CA-S1; NV-S2	Inhabits desert sand dune habitats and Mojave Desert scrub communities at elevations below 3,600 ft.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
<i>Plants (Cont.)</i>						
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.	x		
Wiggins' cholla	<i>Opuntia wigginsii</i>	CA-S1	Sandy substrates of small washes and flats within creosote bush scrub and Sonoran Desert scrub communities. Elevation ranges between 100 and 2,900 ft.	x	x	x
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.	x	x	x
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.	x		
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.	x		
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.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Plants (Cont.)						
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.	x		
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.	x	x	x
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.	x	x	x
Yellow flame flower	<i>Talinum angustissimum</i>	AZ-S2	Mountainous habitats, including meadows, ponderosa pine forests, pinyon-juniper woodlands, and along canyon rims at elevations between 5,000 and 8,000 ft.	x		
Yellow stargrass	<i>Hypoxis hirsuta</i>	CO-S1	Wet to dry woodlands and prairies at elevations below 5,500 ft.	x		
Yellow two-tone beardtongue	<i>Penstemon bicolor</i> spp. <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 calcerous or carbonate soils in washes, roadsides, rock crevices, or outcrops at elevations between 2,500 and 5,500 ft.	x	x	x
Invertebrates						
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 blow-outs in the Meadow Valley Wash–Weiser Wash–Muddy River drainage system.	x		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Invertebrates (Cont.)						
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.	x		
Amargosa naucorid	<i>Pelocoris shoshone 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.	x	x	x
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.	x	x	x
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.	x		
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> .	x		
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.	x	x	x
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.	x	x	x
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.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
<i>Invertebrates (Cont.)</i>						
Ash Springs riffle beetle	<i>Stenelmis lariversi</i>	NV-S1	Endemic to Ash Springs in Lincoln County, Nevada. An arthropod that inhabits warm springs.	x	x	x
Baker's desertsnailed	<i>Eremarionta rowelli bakerensis</i>	CA-S1	A terrestrial gastropod narrowly endemic to a region less than 39 mi ² in size near Soda Lake in San Bernardino County, California. Primarily occurs among rocks on talus slopes.	x	x	
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.	x	x	x
Bishop Cap tubesnail	<i>Coelostemma pyrgonasta</i>	NM-S1	Endemic to the Bishops Cap Mountain in Dona Ana County, New Mexico. Occurs terrestrially under limestone blocks below cliffs.	x		
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.	x	x	x
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.	x	x	x
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 desert scrub, creosote bush scrub, yucca and cholla cactus, saltbush, and desert dune communities.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Invertebrates (Cont.)						
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 Desert scrub, creosote bush scrub, yucca and cholla cactus, saltbush, and desert dune communities.	x	x	x
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.	x		
Brown tassel trigonoscuta weevil	<i>Trigonoscuta brunnotesselata</i>	CA-S1	Endemic to Mojave Desert of California, this species is known only from the Kelso Dunes in San Bernardino County.	x		
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.	x	x	
California McCoy snail	<i>Eremarionta rowelli mccoiana</i>	CA-S1	Known only from Riverside County, California, within an area less than 40 mi ² near the southern Palen/McCoy Wilderness. Lives terrestrially among rocks on talus slopes.	x	x	x
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.	x	x	
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 creosote bush scrub communities on or near bajadas at elevations below 330 ft.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
<i>Invertebrates (Cont.)</i>						
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.	x		
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>Eriogonum effusum</i> at elevations between 5,000 and 7,000 ft.	x		
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.	x	x	x
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.	x	x	x
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.	x	x	x
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 desert scrub habitats and in association with the host <i>Exomalopsis verbesinae</i> .	x		
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.	x		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
<i>Invertebrates (Cont.)</i>						
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.	x	x	x
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.	x		
Dona Ana talussnail	<i>Sonorella todseni</i>	BLM-S; NM-T; FWS-SC; NM-S1	Endemic to the Dona Ana Mountains in Dona 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.	x		
Dusted skipper	<i>Atrytonopsis hianna</i>	CO-S2	Widespread but discontinuous geographic range. Dry open fields, open woodlands, barren, mid grass, and tall grass prairies, foothills, and prairie gulches, outcrops, and glades. The key habitat feature is the dominance of the food plants <i>Andropogon gerardii</i> and <i>Schizachyrium scoparium</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.	x		
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.	x	x	x
Endemic ant	<i>Neivamyrmex nyensis</i>	NV-S1	Known from only one colony in very rocky terrain in Clark County, Nevada, south of Beatty.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
<i>Invertebrates (Cont.)</i>						
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.	x	x	x
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.).	x		
Franklin Mountain talussnail	<i>Sonorella metcalfi</i>	NM-SC; NM-S1	Known from the Organ Mountains in Dona 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.	x	x	
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.	x	x	
Giant Sand treader cricket	<i>Daihinibaenetes giganteus</i>	CO-S1	Endemic to Colorado on sand dunes and sandy washes.	x	x	
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.	x	x	x
Grated tryonia	<i>Tryonia clathrata</i>	ESA-UR; BLM-S; NV-S2	Endemic to the Muddy River spring system in southeastern Nevada. Occurs in on or in algae and detritus substrates of slow-moving freshwater spring systems.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
<i>Invertebrates (Cont.)</i>						
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.	x	x	x
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 ² of the Great Sand Dunes.	x	x	
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.	x	x	
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.	x	x	
Hebard’s blue-winged desert grasshopper	<i>Anconia hebari</i>	NM-SC	Occurs in open sand dune habitats.	x	x	x
Hoary skimmer	<i>Libellula nodisticta</i>	CO-S1	Wetlands with emergent vegetation, including marshes, shallow pools, and slow springs.	x	x	x
Hot Springs physa	<i>Physa acuta</i>	CO-S2	Drainage ditches, ponds, swamps, and streams at elevations below 10,500 ft.	x	x	
Hubbs pyrg	<i>Pyrgulopsis hubbsi</i>	ESA-UR; NV-S1	Endemic to Nevada, where it is restricted to Hiko and Crystal Springs. Occurs in rheocrene and limnocrene springs in association with vegetation that includes saltgrass (<i>Distichlis spicata</i>).	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
<i>Invertebrates (Cont.)</i>						
Kelso Dunes scarab glaresis beetle	<i>Glaresis arenata</i>	CA-S1; FWS-SC	Endemic to California from the Kelso Dunes in San Bernardino County.	x	x	
Kelso giant sand treader cricket	<i>Macrobaenetes kelsoensis</i>	CA-S1; FWS-SC	Endemic to California from the Kelso Dunes in San Bernardino County.	x	x	
Kelso Jerusalem cricket	<i>Ammopelmatus kelsoensis</i>	CA-S1; FWS-SC	Endemic to California from the Kelso Dunes in San Bernardino County.	x	x	
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.	x	x	x
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.	x	x	
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.	x	x	
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.	x	x	x
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.	x	x	x
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.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Invertebrates (Cont.)						
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.	x	x	x
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.	x	x	x
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.	x	x	x
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.	x	x	x
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.	x	x	x
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.	x	x	x
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.	x	x	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Invertebrates (Cont.)						
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.	x	x	
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.	x	x	x
Obese thorn snail	<i>Carychium exiguum</i>	NM-S2	Occurs in damp habitats, such as marshy riparian areas, floodplains, and ponds.	x	x	x
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.	x		
Organ Mountain woodlandsnail	<i>Ashmunella organensis</i>	NM-S2	Endemic to the Organ Mountains in Dona 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.	x		
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.	x	x	x
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.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
<i>Invertebrates (Cont.)</i>						
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.	x	x	x
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.	x	x	x
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 Desert scrub, creosote bush scrub, yucca and cholla cactus, saltbush, and desert dune communities.	x	x	x
Roberts' rhopalolemma bee	<i>Rhopalolemma robertsi</i>	CA-S1	Endemic to southern California from desert wash habitats in southern San Bernardino County.	x	x	x
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.	x		
Samalayuca Dune grasshopper	<i>Cibolacris samalayucaae</i>	NM-SC	Occurs terrestrially in open sand dune habitats.	x	x	x
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 ² . Utilizes dry river courses and intermittent streamsid es as well as adjacent flats. The host plant is <i>Atriplex canescens</i> .	x		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
<i>Invertebrates (Cont.)</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 ² 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.	x	x	
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.	x	x	x
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.	x		
Sphinx moth	<i>Sphinx dollii</i>	CO-S2	Madrean oak woodland, arid brushlands, and desert foothills with woody broad-leafed shrubs.	x	x	x
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.	x	x	x
Spring Mountains springsnail	<i>Pyrgulopsis deaconi</i>	BLM-S; NMV-S1	Endemic to freshwater springs of the Spring Mountains in southern Nevada.	x	x	x
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.	x	x	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Invertebrates (Cont.)						
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.	x		
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.	x	x	
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.	x		
Warm Springs naucorid	<i>Limnocois 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.	x	x	x
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 ² . Lives terrestrially among rocks on talus slopes.	x		
Fish						
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.	x		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Fish (Cont.)						
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 rivers; often, intermittent streams are also used.	x	x	x
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.	x	x	x
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.	x	x	x
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.	x		
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.	x	x	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Fish (Cont.)						
Bonytail	<i>Gila elegans</i>	ESA-E; AZ-WSC; AZ-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.	x		
Bonytail chub	<i>Gila elegans</i>	ESA-E; 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 prefers open water areas.	x	x	
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.	x	x	
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.	x	x	x
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.	x	x	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Fish (Cont.)						
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.	x	x	x
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.	x	x	
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.	x	x	
Gila topminnow	<i>Poeciliopsis occidentalis occidentalis</i>	ESA-E; AZ-WSC; 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.	x	x	x
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.	x	x	
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.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Fish (Cont.)						
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.	x	x	
Meadow Valley speckled dace	<i>Rhinichthys osculus</i> sp. 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 having gravel or rock substrates.	x		
Meadow Valley Wash desert sucker	<i>Catostomus clarkii</i> sp. 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 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.	x		
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.	x	x	
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 main stem 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.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Fish (Cont.)						
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.	x	x	x
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.	x	x	x
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 mainstream Mohave River; now in lakes and mineral spring pools.	x	x	x
Oasis Valley speckled dace	<i>Rhinichthys osculus</i> sp. 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.	x	x	x
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.	x	x	x
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.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Fish (Cont.)						
Pahrump poolfish	<i>Empetrichthys latos latos</i>	ESA-E; NV-P; NV-S1	Historically 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).	x	x	x
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.	x	x	
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.	x	x	
Rio Grande chub	<i>Gila pandora</i>	BLM-S; CO-S1; CO-SC; NM-S2	Restricted to streams of the Rio Grande Basin. Inhabits clear, cool, fast-flowing water over rubble or gravel substrates.	x	x	x
Rio Grande chub	<i>Gila pandora</i>	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.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Fish (Cont.)						
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 in is confined to streams of the Rio Grande Basin.	x	x	
Rio Grande shiner	<i>Notropis jemezianus</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.	x	x	
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.	x	x	
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.	x	x	x
Roundtail chub	<i>Gila robusta</i>	BLM-S; AZ-WSC; FWS-SC; AZ-S2; NV-S1; UT-S2	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.	x	x	x
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.	x		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Fish (Cont.)						
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.	x	x	x
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.	x	x	
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.	x	x	
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.	x	x	
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, and abundant aquatic vegetation.	x	x	
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.	x	x	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Fish (Cont.)						
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.	x		
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.	x	x	x
White River desert sucker	<i>Catostomus clarkii intermedius</i>	BLM-S; NV-P; NV-S1	Endemic to Nevada, where it is restricted to remnant streams of the White River system. Inhabits small to medium-sized rivers.	x	x	x
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.	x	x	
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.	x	x	x
White Sands upfish	<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.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Fish (Cont.)						
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.	x	x	
Amphibians						
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.	x	x	x
Arroyo toad	<i>Anaxyrus californicus</i>	ESA-E; CA-S2	Washes, streams, arroyos, and adjacent uplands and along rivers that have shallow, gravelly pools adjacent to sandy terraces.	x	x	
Boreal (western) toad	<i>Bufo boreas</i>	CO-E; CO-S1	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> .	x	x	
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.	x	x	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Amphibians (Cont.)						
Couch's spadefoot	<i>Scaphiopus couchii</i>	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, creosote bush desert, thorn forest, and cultivated areas. Elevation ranges between 690 and 1,120 ft.	x	x	x
Great Plains narrow-mouthed toad	<i>Gastrophryne olivacea</i>	BLM-S; AZ-WSC	Mesquite semi-desert 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.	x	x	
Lowland leopard frog	<i>Lithobates 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.	x	x	x
Mountain yellow-legged frog	<i>Rana muscosa</i>	ESA-E; CA-S1	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.	x		
Northern leopard frog	<i>Rana pipiens</i>	ESA-UR; BLM-S; CA-S2; CO-SC; NM-S2; NV-S2	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.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Amphibians (Cont.)						
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.	x	x	
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.	x		
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 semi-permanent water bodies. Occurs in and along streams, ditches, flooded fields, irrigated croplands, and permanent reservoirs.	x	x	x
Western toad	<i>Bufo boreas</i>	FWS-SC; CO-E; CO-S1; UT-SC; UT-S2	Inhabits a variety of habitats, including arid shrublands, mountain meadows, springs, lakes, ponds, and rivers at elevations below 12,000 ft.	x	x	
Reptiles						
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.	x		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Reptiles (Cont.)						
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.	x	x	x
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 semi-permanent streams; riparian drainages up through oak-pine woodlands.	x	x	x
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.	x		
California mountain kingsnake (San Bernardino population)	<i>Lampropeltis zonata (parvirubra)</i>	CA-S1; FWS-SC	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 lake shores.	x	x	
Chuckwalla	<i>Sauromalus ater (Sauromalus obesus)</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 creosote bush communities at elevations below 6,000 ft.	x	x	
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.	x		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Reptiles (Cont.)						
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.	x	x	x
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.	x	x	
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.	x	x	x
Desert tortoise	<i>Gopherus agassizii</i>	ESA-T; ESA-UR; BLM-S; CA-T; AZ-WSC; NV-P; NV-S2; UT-S1	Mojave and Sonoran Deserts in desert creosote bush 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 under review for ESA listing.	x	x	x
Flat-tailed horned lizard	<i>Phrynosoma mcallii</i>	ESA-P; 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.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Reptiles (Cont.)						
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, desert scrub, thorn scrub, xero-riparian, oak woodland, and semi-desert grassland. On lower mountain slopes, rocky bajadas, canyon bottoms, and arroyos at elevations below 3,950 ft.	x	x	x
Mexican rosy boa	<i>Charina trivirgata trivirgata</i>	BLM-S; FWS-SC; AZ-S1	Sonoran Desert near rocky hillsides and rock outcroppings.	x	x	x
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.	x	x	x
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.	x	x	x
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 desert scrub habitats.	x	x	
Mojave shovel-nosed snake	<i>Chionactis occipitalis occipitalis</i>	AZ-S1	Known only from Arizona in sparsely vegetated desert area on rocky slopes, dunes, washes, and sandy flats.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Reptiles (Cont.)						
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.	x	x	
Northern red-diamond rattlesnake	<i>Crotalus ruber ruber</i>	CA-S2	Endemic to California from rocky areas of bare rock-talus-scree, chaparral shrubland, desert scrub, thorn scrub, open chaparral, mesquite/cactus, and pine-oak woodland communities. Occurs at elevations below 2,950 ft.	x		
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.	x	x	
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.	x	x	
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.	x	x	
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.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Reptiles (Cont.)						
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.	x	x	x
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.	x	x	
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.	x	x	x
Western banded gecko	<i>Coleonyx variegatus</i>	BLM-S; UT-SC; UT-S2	Desert scrub habitat along rocky hillsides and sandy flats and washes of canyon lands.	x	x	
Western blind snake	<i>Leptotyphlops humilis</i>	BLM-S; UT-SC; UT-S1	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.	x	x	
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 Mowhawk 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.	x	x	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Reptiles (Cont.)						
Zebra-tailed lizard	<i>Callisaurus draconoides</i>	BLM-S; UT-SC; UT-S2	Open desert habitat, often in wash bottoms or other areas sparsely vegetated with creosote.	x	x	
Birds						
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.	x	x	x
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.	x		
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.	x	x	x
Arizona bell's vireo	<i>Vireo bellii arizonae</i>	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.	x	x	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Birds (Cont.)						
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.	x	x	x
Bald eagle	<i>Haliaeetus leucocephalus</i>	ESA-T; BLM-S; CO-T; NV-P; AZ-WSC; NM-T; FWS-SC; CO-S1; NM-S1; NV-S1; UT-SC; UT-S1	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. Sonoran populations in Arizona are listed as threatened under the ESA; populations elsewhere are not listed under the ESA.	x	x	x
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.	x	x	x
Bell's vireo	<i>Vireo bellii</i>	NM-T; FWS-SC; NM-S2	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.	x	x	x
Belted kingfisher	<i>Megasceryle alcyon</i>	AZ-WSC; AZ-S2	Rivers, brooks, ponds, lakes, coasts, streams, creeks, mangroves, swamps, and estuaries.	x	x	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Birds (Cont.)						
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.	x	x	x
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.	x		
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.	x	x	
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.	x	x	x
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.	x		
Black-bellied whistling-duck	<i>Dendrocygna autumnalis</i>	AZ-WSC	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.	x	x	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Birds (Cont.)						
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.	x	x	
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.	x		
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 desert scrub in open stands of creosote bush and large succulents.	x		
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.	x	x	
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.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Birds (Cont.)						
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.	x	x	
California gull	<i>Larus californicus</i>	CA-S2	Seacoasts, bays, estuaries, mudflats, marshes, irrigated fields, lakes, ponds, agricultural lands, and urban areas. Islands, lake shores, and pond shores having open sandy or gravelly areas serve as nesting habitat.	x	x	
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.	x	x	x
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.	x	x	
Common black-hawk	<i>Buteogallus anthracinus</i>	BLM-S; AZ-WSC; NM-S2; FWS-SC	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.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Birds (Cont.)						
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.	x		
Costa's hummingbird	<i>Calypte costae</i>	NM-T; NM-S2	Desert and semi-desert, 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.	x		
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.	x	x	x
Dickcissel	<i>Spiza americana</i>	NM-S1	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.	x	x	x
Eastern bluebird	<i>Sialia sialis</i>	NM-S1	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.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Birds (Cont.)						
Elegant trogon	<i>Trogon elegans</i>	NM-E; NM-S1	Open woodland, pine-oak association, scrubby woodland and second-growth, primarily in arid or semiarid situations, less frequently in humid woodland.	x		
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.	x	x	
Ferruginous hawk	<i>Buteo regalis</i>	BLM-S; AZ-WSC; FWS-SC; AZ-S2; CO-SC; NM-S2; NV-S2; UT-S2	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.	x	x	x
Forster's tern	<i>Sterna forsteri</i>	CO-S2	Large freshwater marshes and lakes with deep water and extensive reed beds or muskrat burrows.	x	x	
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.	x	x	x
Gilded flicker	<i>Colaptes chrysoides</i>	CA-E; CA-S1	Stands of saguaro cactus, Joshua tree, and cottonwood or ironwood forests in southern Arizona and southern California along the Colorado River.	x	x	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Birds (Cont.)						
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.	x	x	x
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.	x		
Great egret	<i>Ardea alba</i>	BLM-S; AZ-WSC; AZ-S1	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.	x	x	x
Greater sage-grouse	<i>Centrocercus urophasianus</i>	ESA-C; BLM-S; UT-SC; UT-S2	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.	x	x	x
Greater sandhill crane	<i>Grus canadensis tabida</i>	CO-S2	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 ac in size. Nesting wetlands are secluded and free from disturbance.	x	x	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
<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.	x	x	
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.	x		
Gunnison sage-grouse	<i>Centrocercus minimus</i>	ESA-UR; BLM-S; CO-SC; CO-S1	Year-round resident in the Gunnison Basin in south central Colorado. Inhabits large expanses of sagebrush with mixed grasses and forbs.	x	x	x
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.	x	x	x
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.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Birds (Cont.)						
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 in southern California. Nests in low trees in riparian habitats.	x		
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.	x	x	x
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.	x	x	x
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.	x	x	x
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.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Birds (Cont.)						
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.	x	x	x
Long-eared owl	<i>Asio otus</i>	FWS-SC; AZ-S2	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.	x	x	x
Lucy's warbler	<i>Vermivora luciae</i>	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.	x		
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.	x	x	
Mountain plover	<i>Charadrius montanus</i>	BLM-S; CA-S2; CA-SC; UT-SC; UT-S1	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.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
<i>Birds (Cont.)</i>						
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.	x		
Neotropic cormorant	<i>Phalacrocorax brasilianus</i>	NM-T; NM-S2	Rivers, lakes, marshes, and seacoasts.	x		
Northern aplomado falcon	<i>Falco femoralis septentrionalis</i>	ESA-E; NM-E; NM-S1	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.	x	x	x
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.	x	x	
Northern goshawk	<i>Accipiter gentilis</i>	BLM-S; AZ-WSC; NV-P; FWS-SC; NM-SC; NM-S2; NV-S2	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.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Birds (Cont.)						
Osprey	<i>Pandion haliaetus</i>	NM-SC; NM-S2	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.	x	x	x
Ovenbird	<i>Seiurus aurocapillus</i>	CO-S2	Uses mid-late successional, closed-canopied deciduous or deciduous-coniferous forests having deep leaf litter and limited understory for breeding season. Forest types included oak-hickory, oak-pine, maple-basswood, maple-birch, maple-birch-beech, hemlock-oak, trembling aspen, and spruce.	x	x	
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.	x	x	x
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 desert scrub, 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.	x	x	x
Prairie falcon	<i>Falco mexicanus</i>	BLM-S	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.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
<i>Birds (Cont.)</i>						
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.	x	x	x
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.	x	x	x
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> spp. and <i>Populus</i> spp. Also uses xeric montane shrub fields, chaparral shrub fields, and mixed-conifer forests having shrubby understories.	x	x	
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	Riparian shrublands and woodlands. Nests in thickets, scrubby and brushy areas, open second-growth, swamps, and open woodlands.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
<i>Birds (Cont.)</i>						
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.	x	x	
Swainson's hawk	<i>Buteo swainsoni</i>	BLM-S; NV-P; FWS-SC; CA-S2; NV-S2	Savanna, open pine-oak woodlands, grasslands, and cultivated lands. Nests in solitary trees, bushes, or small groves.	x	x	x
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.	x	x	
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> sp.). Also found along canyon bottoms.	x	x	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Birds (Cont.)						
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> spp. and <i>Salix</i> spp.	x	x	
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.	x	x	x
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 solar energy region.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Birds (Cont.)						
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.	x	x	x
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.	x	x	x
White-tailed kite	<i>Elanus leucurus</i>	AZ-S2	Savanna, open woodlands, marshes, cleared areas, and cultivated fields.	x	x	
Willet	<i>Catoptrophorus semipalmatus</i>	CO-S1	Large expanses of short, sparse grasslands for nesting and wetland complexes for foraging. Habitat types include marshes, lake margins, and river mouths.	x	x	
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.	x	x	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
Birds (Cont.)						
Yellow warbler	<i>Dendroica petechia brewsteri</i>	CA-S2; CA-SC	San Joaquin and Colorado River Valleys. Occupies riparian vegetation close to water along streams and wet meadows. Associated with <i>Salix</i> spp. and <i>Populus</i> spp. Also uses xeric montane shrub fields, chaparral shrub fields, and mixed-conifer forests having shrubby understories.	x	x	
Yuma clapper rail	<i>Rallus longirostris yumanensis</i>	ESA-E; AZ-WSC; CA-T; NV-P; CA-S1; NV-S1	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.	x	x	x
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.	x	x	
Mammals						
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 Desert scrub of low-desert ranges to white fir forest zones with summer ranges occurring at higher elevations. Roosts in caverns, rock fissures, and mines.	x	x	x
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.	x		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
<i>Mammals (Cont.)</i>						
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.	x	x	x
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.	x	x	x
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 reintroduced to the northwestern portion of the State beginning in 2001. Historically it inhabited prairies and semiarid shrublands, where it preyed on prairie dogs.	x	x	
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.	x	x	x
Botta's pocket gopher	<i>Thomomys bottae rubidus</i>	CO-SC; CO-S1	Agricultural fields, grasslands, roadsides, parks, pinyon-juniper woodlands, open montane forest, montane shrublands, and semi-desert shrublands at an elevation ranging from 4,000 to 8,500 ft.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
<i>Mammals (Cont.)</i>						
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.	x	x	x
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, desert scrub, and palm oasis habitats at elevations below 2,000 ft. Roosts in mines, caves, and buildings.	x	x	x
Canada lynx	<i>Lynx canadensis</i>	ESA-T; CO-E; CO-S1	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.	x	x	
Cave myotis	<i>Myotis velifer</i>	BLM-S; FWS-SC; CA-S1	Lower Colorado River Basin in desert scrub, shrublands, washes, and riparian habitats. Roosts in colonies in caves.	x	x	x
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.	x	x	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
<i>Mammals (Cont.)</i>						
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 opuntia, cholla, prickly pear, mesquite, and catclaw—as well as its low tolerance for cold temperatures.	x	x	x
Common hog-nosed skunk	<i>Conepatus leuconotus</i>	CO-S1	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.	x	x	x
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.	x	x	x
Desert bighorn sheep	<i>Ovis canadensis mexicana</i>	NM-E; NM-SC; NM-S1	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.	x	x	x
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.	x	x	x
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.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
<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.	x	x	x
Fringed myotis	<i>Myotis thysanodes</i>	BLM-S; NV-P; FWS-SC; NV-S2; UT-SC	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 solar energy region.	x	x	x
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.	x		
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.	x	x	x
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.	x	x	
Kit fox	<i>Vulpes macrotis</i>	BLM-S; UT-SC	Open prairie, plains, and desert habitats, where it inhabits burrows and preys on rodents, rabbits, hares, and small birds.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
<i>Mammals (Cont.)</i>						
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.	x	x	
Long-eared myotis	<i>Myotis evotis</i>	BLM-S; FWS-SC	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.	x	x	
Long-legged myotis	<i>Myotis volans</i>	BLM-S	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 bark of trees.	x	x	x
Mohave ground squirrel	<i>Spermophilus mohavensis</i>	CA-T; CA-S2	Known from the Mojave Desert in San Bernardino County, California. Inhabits open desert scrub, grasslands, and Joshua tree woodlands at elevations between 1,800 and 5,000 ft. Utilizes burrows at the base of shrubs.	x	x	x
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.	x		
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.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
<i>Mammals (Cont.)</i>						
New Mexican jumping mouse	<i>Zapus hudsonius luteus</i>	ESA-C; BLM-S; NM-E; NM-S2	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.	x		
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.	x		
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.	x	x	x
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 desert scrub dominated by shadscale (<i>Atriplex confertifolia</i>) or big sagebrush (<i>Artemisia tridentata</i>). Often burrows in areas of soft, windblown sand piled at the bases of shrubs.	x	x	x
Pale 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 solar analysis region 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.	x	x	x
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 solar energy region.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
<i>Mammals (Cont.)</i>						
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, desert scrub, and grasslands on loose or sandy soils.	x	x	x
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.	x	x	
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.	x	x	
Peninsular bighorn sheep	<i>Ovis canadensis nelsoni</i> DPS	ESA-E; CA-E; CA-S1	A distinct population segment (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.	x		
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.	x	x	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
<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 creosote bush and chaparral habitats, in association with very large boulders, high cliffs, rugged rock outcroppings, and rocky canyons.	x	x	x
Pygmy rabbit	<i>Brachylagus idahoensis</i>	BLM-S; NV-P; UT-S2; UT-SC	Sagebrush-shrubland habitats throughout the SEZ region. Prefers loose soils to dig burrows.	x	x	x
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.	x		
Silver-haired bat	<i>Lasionycteris noctivagans</i>	BLM-S; FWS-SC	Primarily confined to high-elevation forested areas (1,600–8,500 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.	x	x	x
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.	x	x	

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
<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 solar energy region.	x	x	x
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	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 solar energy region.	x	x	x
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.	x	x	x
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.	x	x	x

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
<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.	x	x	x
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 solar energy region.	x	x	x
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.	x	x	x
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.	x	x	x
Wolverine	<i>Gulo gulo</i>	CO-S1	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.	x		

TABLE J.6-1 (Cont.)

Common Name	Scientific Name	Listing Status ^b	Habitat ^c	Potential to Occur in Alternative Analysis Areas ^d		
				No Action Alternative	Program Alternative	SEZ Alternative
<i>Mammals (Cont.)</i>						
Yellow-faced pocket gopher	<i>Cratogeomys castanops</i>	NM-S2	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-creosote bush habitat. Constructs shallow foraging burrows and deeper ones between nest and food cache.	x	x	x
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 desert scrub.	x	x	x
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.	x	x	x
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.	x	x	x

Footnotes on next page.

TABLE J.6-1 (Cont.)

- ^a Only species that may occur in the affected area of the SEZs are included in this table.
- ^b AZ-HS = highly safeguarded plant species in Arizona; AZ-S1 = ranked as S1 in the state of Arizona; AZ-S2 = ranked as S2 in the state of Arizona; AZ-SR = salvage restricted plant species in Arizona; AZ-WSC = wildlife species of concern in the state of Arizona (formerly regarded as state-threatened); BLM-S = listed as a sensitive species by the BLM; CA-E = listed as endangered in the state of California; CA-S1 = ranked as S1 in the state of California; CA-S2 = ranked as S2 in the state of California; CA-SC = a state species of concern within the state of California; CA-SX = extirpated from the state of California; CA-T = listed as threatened by the state of California; 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; FWS-SC = USFWS species of concern. CO-E = listed as endangered in 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 in Colorado; NM-E = listed as endangered in 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 in 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 = species of concern in Utah.
- ^c To convert from ft to m, multiply by 0.3048. To convert from acres to km², multiply by 0.004047. To convert from mi² to km², multiply by 2.590.
- ^d The potential of any species to occur in any of the alternative analysis areas and their affected areas is based upon the presence of known occurrences or potentially suitable habitat. Potentially suitable habitat was determined from CAREGAP and SWReGAP habitat suitability and land cover models.

1 occur in the affected area of one or more of the proposed SEZs and that are (1) listed, proposed,
2 candidate, or under review for listing under the ESA; (2) designated by the BLM as sensitive; or
3 (3) listed as threatened, endangered, or a species of concern by the state in which the affected
4 area is located. The species accounts include information on the species' life history, ecology,
5 listing history, and threats to conservation.
6
7

8 **J.6.1 Species Accounts**

9

10 Species accounts are presented for those species that may occur in the affected area
11 of one or more of the proposed SEZs and that are (1) listed, proposed, candidate, or under review
12 for listing under the ESA; (2) designated by the BLM as sensitive; or (3) listed by the state in
13 which the affected area is located. Species accounts are presented by taxonomic group (plants,
14 invertebrates, fish, amphibians, reptiles, birds, and mammals) and alphabetically, by common
15 name, within each taxonomic group.
16
17

18 **J.6.1.1 Plants**

19
20

21 **Alkali Mariposa-Lily (*Calochortus striatus*)**

22

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

28 Alkali mariposa-lily is a herbaceous perennial monocot in the Liliaceae (lily) family that
29 is native to California but also occurs in Nevada. The plant arises from an underground bulb with
30 an erect stem that is usually 4–8 in. (10–20 cm) tall but may be much taller. The stem may
31 branch toward the end and is subtended by a long, linear basal leaf that usually withers by the
32 time the plant blooms. Alkali mariposa-lily blooms from April to June with white to lavender,
33 bell-shaped flowers at the end of the stem. The flower petals are striped with purple veins, and
34 each has a nectary at its base that is surrounded by hairs. The fruit is an erect, linear, angled
35 capsule containing flat, yellowish or tan seeds (*Flora of North America* 2010; Jepson 2010;
36 Nature Serve 2010).
37

38 Alkali mariposa-lily grows in wetlands, alkaline seeps, springs, meadows, and springy
39 places in creosote bush scrub of the western Mojave Desert of southern California at elevations
40 between 2,600 and 4,600 ft (800 and 1,400 m) (*Flora of North America* 2010; Nature
41 Serve 2010).
42

43 There are no data available from which meaningful inferences can be made regarding
44 population trends or changes in the distribution of alkali mariposa-lily in California, but
45 conservation of this species is needed to ensure it remains a part of California's flora. Major

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

3
4 The alkali mariposa-lily may occur in the affected area of the following SEZs: Pisgah and
5 Riverside East.

6
7
8 **Amargosa Niterwort (*Nitrophila mohavensis*)**

9
10 ESA Listing Status: Endangered

11 BLM Listing Status: Not Listed

12 State Listing Status: Endangered in California; Protected in Nevada

13 Rarity: Nevada State Rank S1

14
15 The Amargosa niterwort is confined to a few small depressions, or sinks, of the Carson
16 Slough in Nevada and California (from Ash Meadows Wildlife Refuge in Nevada downstream to
17 Franklin Playa, California) and from at least one locale on the eastern shore of the Amargosa
18 River at Grimshaw Basin, California. This habitat is composed of highly saline and alkaline soils
19 that are hydrated to varying degrees and are formed by seepage from freshwater springs that lie
20 many miles to the north and east in Ash Meadows, Nevada (Nature Serve 2010).

21
22 The Amargosa niterwort grows on open, highly alkaline mudflats and low sand deposits
23 in sinks, around alkali sink vegetation. All populations are known from wet alkaline flats that
24 lack appreciable standing water and support very little vegetation, with extensive salt crust
25 development. The species occurs in the open and is generally not found with, or under, any type
26 of cover. It is found at elevations between approximately 1,970 and 2,460 ft (600 and 750 m).
27 Associated plants include spiny saltbush, Parry's saltbush, iva, Tecopa bird's-beak, short-
28 pedicelled cleomella, pickleweed, and saltgrass. Natural and unaltered hydrology within Lower
29 Carson Slough appears critical for the survival of the Amargosa niterwort.

30
31 The Amargosa niterwort is a small, erect perennial from an extensive, heavy,
32 underground rootstock. The largest population of the species is thought to consist of several
33 thousand individuals, many of which are interconnected via underground rootstocks. Plants can
34 overwinter as underground rootstocks, with new plants starting their growth in March. Flowering
35 is from late April to October.

36
37 On June 19, 1985 (USFWS 1985), the Amargosa niterwort was federally listed as an
38 endangered species, with designated critical habitat.

39
40 The restricted range of this species makes it susceptible to natural catastrophic events
41 such as flooding and drought as well as to the genetic and demographic consequences of small
42 populations. A majority of all suitable habitat in California for this species is on public lands.
43 Potential threats to the species include local groundwater depletion; streambed alteration;
44 highway maintenance; mining, including exploratory drilling and claim marker placement; off-
45 road vehicle (ORV) travel; and trampling by wild horses. An additional threat is the potential
46 introduction and spread of the exotic plant saltcedar. Saltcedar has not been observed near

1 Franklin Playa to date, although it does occur downstream on the Amargosa River in the vicinity
2 of Grimshaw Basin (USFWS 1985; NatureServe 2010).

3
4 The Amargosa niterwort may occur in the affected area of the following SEZs: Pisgah
5 Amargosa Valley.

6
7
8 **Aravaipa Wood Fern (*Thelypteris puberula* var. *sonorensis*)**

9
10 ESA Listing Status: Not Listed
11 BLM Listing Status: Listed as Sensitive
12 State Listing Status: Not Listed
13 Rarity: Arizona State Rank S2
14

15 Aravaipa wood fern is a large perennial fern that is native to Arizona but also occurs in
16 California. Ferns reproduce via tiny spores shed into the air; therefore, the plants have no
17 flowers, fruits, or seeds. The spores eventually settle to the soil and germinate to form
18 inconspicuous gametophytes, from which aerial plants (sporophytes) develop. Aravaipa wood
19 fern consists of evergreen, ascending and spreading fronds (leaves) arising from thick, scaly,
20 creeping rhizomes. Individual fronds are light green, pinnately compound, papery to leathery,
21 sparsely hairy, and from 20 to 51 in. (50 to 130 cm) in length. Densely hairy spore-bearing
22 structures are in two rows on the underside of the frond pinnules. Spores are shed from January
23 to September (*Flora of North America* 2010; Jepson 2010; Nature Serve 2010).

24
25 Aravaipa wood fern grows in a variety of habitats, including moist soils in shady canyon
26 regions, riparian habitats such as riverbanks, seepage areas, and mesic meadow habitats at
27 elevations between 2,220 and 4,500 ft (675 and 1368 m) (*Flora of North America*, 2010;
28 Jepson 2010; Nature Serve 2010).

29
30 There are no data available from which meaningful inferences can be made regarding
31 population trends or changes in the distribution of Aravaipa wood fern in Arizona, but
32 conservation of this species is needed to ensure it remains a part of Arizona's flora. Major threats
33 are associated with habitat disturbance or destruction, recreation, effects of small population size,
34 woody plant encroachment, exotic species invasion, succession, global climate change, and
35 pollution.

36
37 Aravaipa wood fern could occur in the affected area of the following SEZ: Bullard Wash.
38

39
40 **Arizona Cliff-Rose (*Purshia subintegra*)**

41
42 ESA Listing Status: Endangered
43 BLM Listing Status: Not Listed
44 State Listing Status: Arizona Highly Safeguarded (HS)
45 Rarity: Arizona State Rank S1
46

1 The Arizona cliff-rose is a low, woody shrub that is endemic to limestone soils in central
2 Arizona. The current range of the species includes Maricopa County (near Horseshoe Lake),
3 Yavapai County (near Cottonwood), Mohave County (near Burro Creek), and Graham County
4 (near Bylas). The landscape is dissected by ephemeral drainages and is sparsely vegetated. Plants
5 typically grow on rolling, rocky, limestone hills and slopes, within Sonoran Desert scrub, at
6 elevations of 2,120 to 4,000 ft (646 to 1,220 m). The species requires white tertiary limestone
7 lakebed deposits high in lithium, nitrates, and magnesium. The Arizona cliff-rose tends to be the
8 dominant or co-dominant shrub on sites where it occurs (AZGFD 2010; Nature Serve 2010). No
9 information was found on reproduction in this species.

10
11 Four disjunct populations of Arizona cliff-rose exist along an area of central Arizona that
12 is 200 mi (322 km) wide. The Cottonwood population includes the greatest number of individual
13 plants, including seedlings. Existing populations are found on land under a number of different
14 ownerships: private, BLM, Bureau of Indian Affairs, Forest Service, state of Arizona, and
15 possibly the Bureau of Reclamation.

16
17 The Arizona cliff-rose was federally listed as endangered on May 29, 1984
18 (USFWS 1984a). Critical habitat has not been designated for this species.

19
20 This species is very vulnerable because of its limited number of populations, habitat
21 specificity, and a number of threats. Livestock grazing, poor reproduction, mineral exploration
22 and development, construction and maintenance of roads and utility corridors, recreation, ORV
23 use, urbanization, pesticides, and urbanization are all threats to the species (Nature Serve 2010).

24
25 The Arizona cliff-rose may occur in the affected area of the following SEZ: Bullard
26 Wash.

27
28
29 **Arizona Coralroot (*Hexalectris spicata* var. *arizonica*)**

30
31 ESA Listing Status: Not Listed

32 BLM Listing Status: Listed as Sensitive (New Mexico)

33 State Listing Status: Endangered in New Mexico

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

35
36 Arizona coralroot (*Hexalectris spicata* var. *arizonica*) is a subspecies of crested coralroot
37 that occurs throughout southern Arizona, New Mexico, Texas, and adjacent Mexico. Within New
38 Mexico, populations exist in Doña Ana, Hidalgo, Otero, and Sierra Counties. Arizona coralroot
39 grows under heavy leaf litter in oak, mixed oak and conifer, and pinyon-juniper woodland
40 communities, on the wooded sides of canyons, and on canyon bottoms from 3,480 to 6,950 ft
41 (1,061 to 2,118 m) in Arizona and New Mexico. Substrate is limestone to calcareous sandy or
42 organic soils. Associated orchids include spiny coralroot (*Corallorhiza wisteriana*), purple-spike
43 coralroot (*H. warnockii*), Chisos coral-root (*H. revoluta*), and Huachuca Mountain adder's-
44 mouth (*Malaxis corymbosa*) (NMRPTC 2010).

1 Emerging above ground only to flower from May to July in New Mexico, Arizona
2 coralroot rarely flowers in consecutive years. It has a symbiotic relationship with mycorrhizal
3 fungi until the plant is mature for flowering. Within New Mexico, this species grows as widely
4 scattered individuals, with some small colonies developing up to six plants (AZGFD 2010;
5 NMRPTC 2010).
6

7 Arizona coralroot is listed as endangered by the state of New Mexico and sensitive by the
8 BLM (New Mexico), is ranked S2 by the state of New Mexico, and is a USFWS species of
9 concern. Threats include mining, land-use conversion, habitat fragmentation, soil disturbance
10 and compaction, and forest management practices.
11

12 The Arizona coralroot may occur in the affected area of the following SEZs: Afton and
13 Mason Draw.
14

15 **Arizona Giant Sedge (*Carex ultra*)**

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

22 Arizona giant sedge is a large herbaceous perennial monocot in the Cyperaceae (sedge)
23 family that is native to Arizona but also occurs in New Mexico. The tall plant arises from large
24 rootstocks and consists of numerous stout, three-angled, erect stems that are 3.3- to 6.6-ft (1- to
25 2-m) tall, with very long strap-shaped leaves. Each stem bears 6 to 15 leathery, smooth leaves
26 that may be red-tinged on the back side and clasp the stem at the base. Arizona giant sedge has
27 separate male and female flowers (monoecious), mostly in separate long spikes that are near the
28 ends of the stems. Some of the lower female spikes may have a short portion of male flowers at
29 the tip. The male flower spikes are composed of fluffy reddish-brown flower scales. The female
30 spikes are cylindrical; composed of achenes (the fruit) within a brownish, oval, papery sac (the
31 perigynium) with a short narrow beak; and interspersed with reddish-brown scales. The female
32 flower spikes mature and develop fruit during late March through September. The fruits are dark
33 brown, three-sided, oval achenes. *Carex ultra* is a synonym for *Carex spissa* var. *ultra* (*Flora of*
34 *North America* 2010, Jepson 2010; Nature Serve 2010).
35

36 Arizona giant sedge grows in shaded southeast-facing exposures of moist gravelly
37 substrates near perennially wet springs and streams. Its elevation ranges between 2,000 and
38 6,000 ft (600 and 1,824 m) (*Flora of North America* 2010).
39

40 There are no data available from which meaningful inferences can be made regarding
41 population trends or changes in the distribution of Arizona giant sedge in Arizona, but
42 conservation of this species is needed to ensure it remains a part of Arizona's flora. Major threats
43 are associated with habitat disturbance or destruction, recreation, effects of small population size,
44 exotic species invasion, succession, global climate change, and pollution.
45

1 Arizona giant sedge could occur in the affected area of the Bullard Wash SEZ.
2
3

4 **Ash Meadows Blazingstar (*Mentzella leucophylla*)**
5

6 ESA Listing Status: Threatened
7 BLM Listing Status: Not Listed
8 State Listing Status: Protected in Nevada
9 Rarity: Nevada State Rank S1
10

11 The Ash Meadows blazingstar is endemic to the Ash Meadows area of Nye County,
12 Nevada. It occurs in open areas, on dry, hard, salt-crustured alkaline clay or sandy-clay soils.
13 Plants grow on low bluffs, swales, flats, and drainages, in shadscale vegetation that surrounds
14 spring and seep areas in warm desert scrub communities. Associated species include shadscale
15 saltbush, alkali goldenbush, Ash Meadows sunray, and Ash Meadows milk-vetch. The Ash
16 Meadows blazingstar is found at elevations between 2,240 and 2,300 ft (683 and 700 m). There
17 are eight occurrences of this species over a range of approximately 6 mi (10 km), on land
18 administered by the USFWS and the BLM as well as on privately owned land.
19

20 The Ash Meadows blazingstar is a biennial herb with bright yellow flowers that bloom
21 from late May into September. Flowers open only for brief periods in the late afternoon.
22 Observations made in early spring indicate that individuals of this species do not overwinter;
23 there was no new growth from previous years. Sufficient rain is probably necessary to allow
24 flowering. Since populations of mature plants vary greatly from year to year, it is likely that the
25 total number of seeds produced varies also. The dispersal of this species' seeds is restricted to the
26 sides of gullies and on raised knolls of the flats and lower foothills in the area of the existing
27 populations. The Ash Meadows blazingstar is apparently sensitive to disturbance or habitat
28 alteration, as it is not found on any disturbed sites either as seedlings or as established plants.
29

30 The Ash Meadows blazingstar was federally listed as threatened on May 20, 1985
31 (USFWS 1985). Critical habitat has been designated in the Ash Meadows area of Nye County,
32 Nevada.
33

34 Ash Meadows blazingstar could occur in the affected area of the Amargosa Valley SEZ.
35
36

37 **Ash Meadows Gumplant (*Grindelia fraxinoprattensis*)**
38

39 ESA Listing Status: Threatened
40 BLM Listing Status: Not Listed
41 State Listing Status: Protected in Nevada
42 Rarity: Nevada State Rank S2
43

44 The Ash Meadows gumplant is an erect, biennial or, more often, perennial herb of the
45 sunflower (Asteraceae) family. It is known only from moist, meadow habitats along Carson
46 Slough in Nevada and California, and from Ash Meadows Wildlife Refuge in Nevada

1 downstream to Franklin Playa, California; it has also been reported along the Amargosa River
2 from near Tecopa, California.

3
4 The populations of the Ash Meadows gumplant follow drainage patterns from spring
5 sources in the Ash Meadows region into Carson Slough, the major drainage system of Ash
6 Meadows. The current population status of the Ash Meadows gumplant is unknown, and
7 population trends are difficult to determine because long-term data are unavailable. The Ash
8 Meadows gumplant primarily occurs in saltgrass meadows along streams and surrounding pools
9 in the vicinity of ash-screwbean-mesquite woodlands and desert shadscale scrub vegetation. It
10 occasionally occurs sparsely on open alkali clay soils in drier shadscale habitats or in the unique
11 clay barrens where groundwater is at or near the surface and where other Ash Meadow endemics
12 are supported. The species is quite robust in marshy areas along some dirt roads where runoff
13 accumulates.

14
15 The dominant plant species occurring with the gumplant is saltgrass. Other common
16 associates within the saltgrass meadow type community include spring-loving centaury, seep
17 willow, Yerba mansa, western niterwort, loosestrife, and iva. In wooded areas and on drier sites,
18 common associates include velvet ash, screwbean mesquite, shadscale, alkali sacaton, alkali
19 goldenbush, rabbitbush, seepweed, and other saltbush species.

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

23
24 Threats to the Ash Meadows gumplant include the reduction of spring outflow caused by
25 adjacent land development and/or water diversion; the destruction and/or modification of the
26 limited habitat available to this species from camping, staging area, road maintenance, and/or
27 mining activities; and the degradation of habitat resulting from wild horse grazing/trampling and
28 ORV use impacts.

29
30 Ash Meadows gumplant could occur in the affected area of the Amargosa Valley SEZ.

31
32
33 **Ash Meadows Ivesia (*Ivesia kingii* var. *eremica*)**

34
35 ESA Listing Status: Threatened
36 BLM Listing Status: Not Listed
37 State Listing Status: Protected in Nevada
38 Rarity: Nevada State Rank S2

39
40 The Ash Meadows ivesia is a perennial herb that is endemic to the Ash Meadows area of
41 Nevada. The species occurs in open areas, on moist to saturated, heavy to chalky alkaline soils.
42 Plants grow in meadows on flats, drainages, and bluffs near springs and seeps. They are
43 commonly associated with highly alkaline, clay lowlands or depressions where soil moisture
44 remains high from perched groundwater maintained by springs and seeps. The taxon is typically
45 found in saltgrass meadow, shadscale, and ash-mesquite, associated with the following species:

1 shadscale saltbush, saltgrass, baltic rush, mesquite, Mojave thistle, spring-loving centaury, velvet
2 ash, Yerba mansa, and iva.

3
4 The Ash Meadows ivesia is a matted perennial herb/shrub that bears white flowers from
5 August to October. The Ash Meadows ivesia is aquatic or wetland-dependent and occurs at
6 elevations ranging from 2,200 to 2,300 ft (670 to 700 m). There are nine occurrences of the
7 species that cover a combined total area of approximately 9 ac (3.6 ha), on land administered by
8 the USFWS and the BLM, and on privately owned land.

9
10 The Ash Meadows ivesia was federally listed as threatened on May 20, 1985
11 (USFWS 1985). Critical habitat has been designated in the Ash Meadows area of Nye County,
12 Nevada. Potential threats to the species include development, trampling and grazing, and the
13 associated large-scale drawdown of water resources.

14
15 Ash Meadows ivesia could occur in the affected area of the Amargosa Valley SEZ.

16
17
18 **Ash Meadows Sunray (*Enceliopsis nudicaulis* var. *corrugate*)**

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

24
25 The Ash Meadows sunray is endemic to the Ash Meadows area, occurring in both
26 Nevada and adjacent California. The species occurs on dry to somewhat moist, hard, strongly
27 alkaline silty to clay soils, in open areas, often on or near low calcareous outcrops. Plants are
28 found in spring and seep areas, at elevations from 2,200 to 2,360 ft (670 to 720 m), in creosote-
29 bursage and shadscale zones. Common associated plant species include shadscale saltbush, alkali
30 goldenbush, saltgrass, broom snakeweed, ratany, basin yellow cryptantha, desert bearpoppy, Ash
31 Meadows blazingstar, and Ash Meadows milk-vetch. This species is known from 11 sites that
32 together total an area of 27 ac (0.1 km²).

33
34 The Ash Meadows sunray is a perennial shrub that flowers in April and May. Flowers are
35 borne singly on leafless flower stalks. Little is known about the reproductive biology and life
36 history of this species.

37
38 The Ash Meadows sunray was federally listed as threatened on May 20, 1985
39 (USFWS 1985). Critical habitat has been designated in the Ash Meadows area of Nye County,
40 Nevada. This subspecies is threatened by groundwater pumping and other agricultural
41 development activities, road construction, and ORV traffic.

42
43 Ash Meadows sunray could occur in the affected area of the Amargosa Valley SEZ.

1 **Barstow Woolly Sunflower (*Eriophyllum mohavense*)**

2
3 ESA Listing Status: Not Listed
4 BLM Listing Status: Listed as Sensitive (California)
5 State Listing Status: Not Listed in Any State
6 Rarity: California State Rank S2; USFWS Species of Concern
7

8 Barstow woolly sunflower is a small, annual herbaceous dicot in the Asteraceae
9 (sunflower) family that is native to California and endemic to the Mojave Desert. The plant
10 consists of a white-woolly tuft of numerous erect to spreading, branching stems that are only
11 0.4- to 1-in. (1- to 2.5-cm) tall. The stems are subtended by, and bear, a few spoon- or wedge-
12 shaped, hairy leaves that may be smooth in outline or have three teeth at the wide end. Barstow
13 woolly sunflower blooms from April to May with yellow composite flowers at the ends of the
14 stems. The flowers are clustered among the leaves, giving the plant the appearance of a small
15 mound. The fruit is a hairy, four-angled, club-shaped, black achene with a tuft of scales at one
16 end (a pappus) (*Flora of North America* 2010; Jepson 2010; Nature Serve 2010).
17

18 Barstow woolly sunflower is known only from the Mojave Desert area surrounding
19 Barstow, California. The plant grows on sandy or rocky substrates associated with creosote bush
20 scrub, chenopod scrub, and playas. Its elevation ranges between 2,000 and 3,000 ft (600 and 900
21 m) (California Native Plant Society 2010; *Flora of North America* 2010; Jepson 2010; Nature
22 Serve 2010).
23

24 There are no data available from which meaningful inferences can be made regarding
25 population trends or changes in the distribution of Barstow woolly sunflower in California, but
26 because it is endemic to California and the Mojave Desert, conservation of this species is needed
27 to ensure it remains a part of California's flora. Major threats are associated with habitat
28 disturbance or destruction, recreation, fire, grazing, effects of small population size, exotic
29 species invasion, succession, global climate change, and pollution (Nature Serve. 2010).
30

31 Barstow woolly sunflower could occur in the affected areas of the Pisgah SEZ.
32
33

34 **Bigelow Onion (*Allium bigelovii*)**

35
36 ESA Listing Status: Not Listed
37 BLM Listing Status: Not Listed
38 State Status: Arizona Salvage Restricted (SR)
39 Rarity: Arizona State Rank S2
40

41 Bigelow onion is a herbaceous perennial monocot in the Liliaceae (lily) family that is
42 native to Arizona but also occurs in New Mexico. The plant arises from an underground bulb
43 with a single, erect, smooth, flowering stem (scape) that is 2- to 5-in. (5- to 12-cm) tall. The stem
44 bears two long, thick leaves that are rolled into a cylindrical shape and clasp the base of the stem.
45 The basal leaf sheaths do not extend much above the soil surface. The leaves are often longer
46 than the stem. Bigelow onion blooms from March to May with a hemispheric inflorescence of

1 10 to 25 bell-shaped flowers at the end of the leafless flower stem. The flowers are white, with
2 each petal having a pink to reddish tip and midvein. The flowers are persistent and become
3 papery and stiff as the fruits mature. The fruit is an erect, linear, angled capsule containing
4 smooth, black, shiny seeds with a net-like pattern on their surfaces (*Flora of North America*
5 2010; Nature Serve 2010).

6
7 Bigelow onion grows on gentle slopes on open, dry rocky soil in grassland, chaparral,
8 and Sonoran–Mohave Desert scrub communities at elevations between 2,000 and 5,000 ft (608
9 and 1,520 m) (*Flora of North America* 2010).

10
11 There are no data available from which meaningful inferences can be made regarding
12 population trends or changes in the distribution of Bigelow onion in Arizona, but conservation of
13 this species is needed to ensure it remains a part of Arizona’s flora. Major threats are associated
14 with habitat disturbance or destruction, recreation, fire, grazing, effects of small population size,
15 woody plant encroachment, exotic species invasion, succession, global climate change, and
16 pollution.

17
18 Bigelow onion could occur in the affected areas of the Bullard Wash SEZ.

19
20
21 **Black Milkvetch (*Astragalus funereus*)**

22
23 ESA Listing Status: Not Listed

24 BLM Listing Status: Listed as Sensitive (Nevada)

25 State Status: Not Listed in Any State

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

27
28 Black milkvetch is a small, tufted, herbaceous perennial dicot in the Fabaceae (bean)
29 family that is native to Nevada but also occurs in California. This species is probably endemic to
30 the Death Valley region in southern Nevada and California. The plant consists of a taproot with a
31 woody crown that gives rise to several prostrate or trailing stems are woody below and 0.8- to
32 3-in. (2- to 8-cm) long. All of the herbage is covered with stiff hairs. The stems bear alternate,
33 crowded, pinnately compound leaves. Black milkvetch blooms during April to May, with
34 ascending clusters of pea-like flowers on stalks arising from the leaf bases. The flowers are
35 pinkish purple with darker red veins, and each flower base (the calyx) is covered with black
36 hairs. The fruits are large, oblong, pointed, hairy pods with a curved tip that are attached to the
37 plant by ascending short stalks. The leathery pods contain numerous smooth, heart-shaped seeds
38 that are olive, brown, or black. *Astragalus purshii* is a synonym for *Astragalus funereus*
39 (Jepson 2010; Nature Serve 2010).

40
41 Black milkvetch grows on gravelly-clay ridges and ledges on limestone or volcanic
42 substrates at elevations between 4,200 and 6,900 ft (1,277 and 2,098 m) (Jepson 2010; Nature
43 Serve 2010).

44
45 There are no data available from which meaningful inferences can be made regarding
46 population trends or changes in the distribution of black milkvetch in Nevada, but because this

1 species is probably endemic to the Death Valley region in southern Nevada and California,
2 conservation of this species is needed to ensure it remains a part of Nevada's flora. Major threats
3 are associated with habitat disturbance or destruction, timber harvest, recreation, fire, grazing,
4 effects of small population size, woody plant encroachment, exotic species invasion, succession,
5 global climate change, and pollution.

6
7 Black milkvetch could occur in the affected areas of the Amargosa Valley SEZ.
8
9

10 **Blaine Fishhook Cactus (*Sclerocactus blainei*)**

11
12 ESA Listing Status: Not Listed

13 BLM Listing Status: Listed as Sensitive (Nevada)

14 State Listing Status: Protected in Nevada

15 Rarity: Nevada State Rank S1; USFWS Species of Concern
16

17 Blaine fishhook cactus is a small perennial dicot cactus in the family Cactaceae that is
18 native and endemic to southeastern Nevada and southwestern Utah. The plant is an erect, spiny
19 cactus with an unbranched, unsegmented succulent stem that is pineapple-shaped and is 1.2- to
20 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
21 ribs that are armed with clusters of stiff spines arising from wart-like tubercles (areoles). Each
22 areole has 11 to 22 erect and spreading spines; some may be hooked, and others may be flat and
23 ribbon-like. Young spines may be covered with very fine, soft hairs. Blaine fishhook cactus
24 blooms from April to May with a cluster of funnel-shaped, pink-purple flowers that are
25 crowded among the dense spines at the top of the stem. The fruit is a barrel-shaped green to red
26 berry that is persistent on the parent plant. When dry and mature, the fruit splits open to release
27 large black seeds with small warts that are transported by winds and rain. The taxonomy of
28 *Sclerocactus blainei* is not completely understood, and there are many questionable synonyms
29 (*Flora of North America* 2010; Nature Serve 2010).
30

31 Blaine fishhook cactus grows in greasewood, galleta grass, shadscale, and sagebrush
32 communities on alkaline substrates and volcanic gravels with a clay matrix in valley bottoms at
33 elevations between 5,100 and 5,300 ft (1,550 and 1,611 m) (*Flora of North America* 2010;
34 Nature Serve 2010).
35

36 There are no data available from which meaningful inferences can be made regarding
37 population trends or changes in the distribution of Blaine fishhook cactus in Nevada, but because
38 this plant is an endemic, conservation of this species is needed to ensure it remains a part of
39 Nevada's flora. There are only three occurrences of this species currently known. Major threats
40 are associated with habitat disturbance or destruction, recreation, fire, grazing, effects of small
41 population size, exotic species invasion, succession, global climate change, and pollution.
42

43 Blaine fishhook cactus could occur in the affected area of the Dry Lake Valley North
44 SEZ.
45
46

1 **Brandegee's Milkvetch (*Astragalus brandegeei*)**

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

8 Brandegee's milkvetch is a herbaceous perennial dicot in the family Fabaceae (bean
9 family) that is native to Colorado but is also found in other western states. The plant is less than
10 39-in. (100-cm) tall and has arching stems that may become prostrate or mat-forming. The stems
11 may be smooth or hairy. The plant has alternate, pinnately compound leaves that are hairy on one
12 or both surfaces. Clusters of pea-like flowers are produced from April to September on stalks
13 arising from the leaf bases. The flowers are white or bicolored or with red, purple, or yellow
14 streaks or spots. The fruits are oblong, pointed legumes (pods) that may be hairy or smooth and
15 that contain numerous smooth seeds that are olive, brown, or black (*Colorado Rare Plant Field*
16 *Guide* 2010; Nature Serve 2010).
17

18 Brandegee's milkvetch grows in a variety of habitats, including sandy or gravelly banks,
19 flats, and stony meadows within pinyon-juniper woodlands. Substrates are usually sandstone
20 with granite or occasional basalt. Its elevation ranges between 5,400 and 8,800 ft (1,600 and
21 2,700 m) (*Colorado Rare Plant Field Guide* 2010).
22

23 There are no data available from which meaningful inferences can be made regarding
24 population trends or changes in the distribution of Brandegee's milkvetch in Colorado, but
25 conservation of this species is needed to ensure it remains a part of Colorado's flora. Major
26 threats are associated with habitat disturbance or destruction, recreation, effects of small
27 population size, woody plant encroachment, exotic species invasion, succession, global climate
28 change, and pollution.
29

30 Brandegee's milkvetch could occur in the affected area of the following SEZs: Antonito
31 Southeast, Fourmile East, and Los Mogotes.
32
33

34 **Burgess' Scale Broom (*Lepidospartum burgessii*)**

35
36 ESA Listing Status: Not Listed
37 BLM Listing Status: Listed as Sensitive (New Mexico)
38 State Listing Status: Endangered in New Mexico
39 Rarity: New Mexico State Rank S1; USFWS Species of Concern
40

41 Burgess' scale broom (*Lepidospartum burgessii*), also known as gypsum scalebroom,
42 occurs in southern Otero County and Alkali Lakes, New Mexico, and adjacent Texas. Narrowly
43 endemic to the Alkali Lakes area west of the Guadalupe Mountains, this species occurs in semi-
44 stabilized gypsum dunes in Chihuahuan Desert scrub, alkali sacaton-furwing saltbush grasslands
45 and shrublands, compacted gypsum soils at the edge of dry alkaline lakes, and arid grassland
46 communities from 3,500 to 3,700 ft (1,050 to 1,110 m) elevation. In New Mexico, the plants

1 grow on stabilized, microbe-covered gypsum soils with 5% basal litter cover. Associated shrubs
2 include *Atriplex canescens*, *Opuntia leptocaulis*, *Poliomintha incana*, and *Yucca elata*
3 (NMRPTC 2010).
4

5 Flowering from June to October, this vascular flowering plant exhibits little evidence of
6 recruitment. No seeds have been observed, despite flowering and clonal propagation that appear
7 to be low [edit ok?]. The number of flowers per shrub varies from one to hundreds. The number
8 of juvenile plants has declined (NMRPTC 2010).
9

10 Since Burgess' scale broom is substrate-specific and because probably fewer than
11 10,000 individuals remain, it is listed as sensitive by the BLM, listed as endangered in New
12 Mexico, ranked S1 in New Mexico, and is a USFWS species of concern. Threats include the
13 development of private land, use of ORVs, road building, and earth-moving activities.
14

15 The Burgess' scale broom may occur in the affected area of the Red Sands SEZ.
16
17

18 **California Barrel Cactus (*Ferocactus cylindraceus* var. *cylindraceus*)**

19 ESA Listing Status: Not Listed

20 BLM Listing Status: Not Listed

21 State Listing Status: Arizona Salvage Restricted (SR)

22 Rarity: None
23
24

25 California barrel cactus is a large perennial dicot cactus in the family Cactaceae that is
26 native to Arizona but also occurs in California. The plant is a large, erect, spiny cactus with an
27 unbranched, unsegmented, succulent stem in the form of a cylinder that may be 6.5-ft (2-m) tall
28 or higher and 1.3 ft (0.4 m) in diameter. The stem has 21 to 31 prominent ribs that are armed
29 with clusters of stiff spines arising from wart-like tubercles (areoles). Each areole has 12 to
30 32 erect and spreading spines, the longest of which are 3- to 7-in. (7.5- to 17-cm) long, and may
31 be whitish, yellow, pink, dull red, or brown. California barrel cactus blooms from April to May
32 with a crown of flowers that are crowded among the dense spines at the top of the columnar
33 stem. The individual flowers are maroon on the outside and yellow on the inside. The fruit is a
34 yellow, ovoid, leathery or fleshy, smooth berry that is spineless and contains black seeds. The
35 dried flower parts are persistent on the top of the mature fruit. *Ferocactus cylindraceus* var.
36 *cylindraceus* is a synonym for *Echinocactus viridescens* var. *cylindraceus*, *Echinocactus*
37 *cylindraceus*, *Echinocactus acanthodes*, and *Ferocactus acanthodes* (*Flora of North*
38 *America* 2010; Jepson 2010; Nature Serve 2010).
39

40 California barrel cactus grows on gravelly or rocky hillsides, canyon walls, alluvial fans,
41 and desert washes in Mojave Desert and Sonoran Desert scrub at elevations between 200 and
42 2,900 ft (61 and 882 m) (*Flora of North America* 2010; Nature Serve 2010).
43

44 There are no data available from which meaningful inferences can be made regarding
45 population trends or changes in the distribution of California barrel cactus in Arizona, but
46 conservation of this species is needed to ensure it remains a part of Arizona's flora. Major threats

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

3
4 California barrel cactus could occur in the affected areas of the Gillespie SEZ.
5
6

7 **California Fan Palm (*Washingtonia filifera*)**

8
9 ESA Listing Status: Not Listed

10 BLM Listing Status: Not Listed

11 State Listing Status: Arizona Salvage Restricted (SR)

12 Rarity: Arizona State Rank S1
13

14 California fan palm is a large perennial monocot palm tree in the Arecaceae family that is
15 native to Arizona and California but also occurs in Nevada and Florida, probably as an exotic.
16 The plant consists of an erect, columnar, unbranched trunk that is 20- to 75-ft (6- to 23-m) tall
17 and 1 to 3 ft (0.3 to 1 m) in diameter, often clothed with a thick, skirt-like thatch of dead,
18 persistent leaves that sometimes reaches all the way to the ground. The alternate leaves are fan-
19 shaped and 3- to 6-ft (1- to 1.8-m) long with 40 to 60 folds, torn nearly to the base. The margins
20 of the leaf divisions have numerous white, thread-like fibers. The very stout leaf stalks (petioles)
21 are 2- to 5-ft (0.6- to 1.5-m) long and have large hooked teeth on the edges. These large leaves
22 form a loose and open crown at the top of the trunk. California fan palm blooms from February
23 to June with a large, branched, spike-like inflorescence that hangs down among the leaves and
24 bears numerous white flowers. The fruit is a small, ovoid, black, fleshy, one-seeded drupe
25 (Jepson 2010; Nature Serve 2010).
26

27 California fan palm grows in desert washes, seeps, and springs where underground water
28 is continuously available and in desert oases in isolated areas of the Sonoran and Mojave Deserts
29 at elevations between 500 and 1,000 ft (150 and 300 m) (*Flora of North America* 2010;
30 Jepson 2010).
31

32 There are no data available from which meaningful inferences can be made regarding
33 population trends or changes in the distribution of the California fan palm in Arizona, but
34 conservation of this species is needed to ensure it remains a part of Arizona's flora. Major threats
35 are associated with habitat disturbance or destruction, recreation, fire, grazing, effects of small
36 population size, exotic species invasion, succession, global climate change, and pollution.
37

38 California fan palm could occur in the affected areas of the Brenda SEZ.
39
40

41 **Chaparral Sand-Verbena (*Abronia villosa* var. *aurita*)**

42
43 ESA Listing Status: Not Listed

44 BLM Listing Status: Listed as Sensitive (California)

45 State Listing Status: Not Listed

46 Rarity: California State Rank S2
47

1 Chaparral sand-verbena is a herbaceous annual dicot in the Nyctaginaceae family that is
2 native to California and endemic to southern California. The plant consists of a loose mat of
3 branched stems that are prostrate to ascending, widely spreading, and up to 30-in. (80-cm) long.
4 The stems usually have a reddish tinge and are glandular-hairy. The stems bear opposite, oval,
5 fleshy leaves that are grayish and glandular and may be hairy. Chaparral sand-verbena blooms
6 from January to September with dense roundish clusters of magenta flowers on stalks that arise
7 from leaf bases at the ends of the branches. The fruit is a winged achene (*Flora of North*
8 *America* 2010; Jepson 2010; Nature Serve 2010).

9
10 Chaparral sand-verbena grows on sandy sites in chaparral desert sand dunes, coastal
11 scrub habitats, and sage-scrub at elevations between 350 and 5,250 ft (100 and 1,600 m) (*Flora*
12 *of North America* 2010; Nature Serve 2010).

13
14 There are no data available from which meaningful inferences can be made regarding
15 population trends or changes in the distribution of chaparral sand-verbena in California, but
16 because it is endemic to southern California, conservation of this species is needed to ensure it
17 remains a part of California's flora. Major threats are associated with habitat disturbance or
18 destruction, recreation, fire, grazing, effects of small population size, woody plant encroachment,
19 exotic species invasion, succession, global climate change, and pollution.

20
21 Chaparral sand-verbena could occur in the affected areas of the following SEZs: Imperial
22 East, Iron Mountain, Pisgah, and Riverside East.

23 24 25 **Charleston Grounddaisy (*Townsendia jonesii* var. *tumulosa*)**

26
27 ESA Listing Status: Not Listed
28 BLM Listing Status: Listed as Sensitive (Nevada)
29 State Listing Status: Not Listed
30 Rarity: USFWS Species of Concern

31
32 Charleston grounddaisy is a small, herbaceous, short-lived, perennial dicot in the
33 Asteraceae (sunflower) family that is endemic to Nevada. The species is known from only three
34 sites in Clark County. The plant forms a cushion-shaped tuft with short, erect stems that are 0.4-
35 to 1.6-in. (1- to 4-cm) tall. The stems bear alternate, closely spaced, spatula-shaped leaves that
36 are mostly basal. All of the herbage is covered with very fine, stiff hair. Charleston grounddaisy
37 blooms from April to June with composite flower heads that are borne at the ends of the stems
38 and rise above the tuft of leaves. The flowers have white ray petals and yellow centers. The fruit
39 is a hairy achene that has a tuft of scales (pappus) at one end (*Flora of North America* 2010;
40 Nature Serve 2010).

41
42 Charleston grounddaisy grows in open, sparsely vegetated, calcareous areas, on shallow
43 gravelly carbonate soils of slopes and exposed knolls in forest clearings. It is most commonly
44 associated with montane conifer habitat but will also inhabit pinyon-juniper and lower subalpine
45 conifer communities, recurring on knolls of white, alkaline, calcareous, silty, lacustrine deposits

1 of the upper shadscale/mixed-shrub and lower sagebrush zones. Its elevation ranges between
2 5,200 and 11,000 ft (1,580 and 3,344 m) (*Flora of North America* 2010; Nature Serve 2010).

3
4 There are no data available from which meaningful inferences can be made regarding
5 population trends or changes in the distribution of Charleston grounddaisy, but because this
6 species is endemic to Nevada, conservation of this plant is needed to ensure it remains a part of
7 Nevada's flora. Major threats are associated with habitat disturbance or destruction, recreation,
8 effects of small population size, woody plant encroachment, exotic species invasion, succession,
9 global climate change, and pollution (NatureServe, 2009).

10
11 Charleston grounddaisy could occur in the affected areas of the Delmar Valley SEZ.

12
13
14 **Clokey's Cryptantha (*Cryptantha clokeyi*)**

15
16 ESA Listing Status: Not Listed
17 BLM Listing Status: Listed as Sensitive (California)
18 State Listing Status: Not Listed
19 Rarity: California State Rank S1

20
21 Clokey's cryptantha is an herbaceous annual dicot in the Boraginaceae family that is
22 native and endemic in California. The plant is 3- to 6-in. (8- to 15-cm) tall and consists of
23 numerous erect, branching stems that are covered with bristly hairs that lie flat against the stems.
24 Each stem is subtended by a basal whorl of hairy leaves. The stems bear leaves that are linear-
25 pointed to oblong, bristly-hairy, and opposite below and alternate above. Clokey's cryptantha
26 blooms in April with curled, spike-like clusters of flowers at the ends of the stems. The flowers
27 have small white petals, and the oval base of each flower (the calyx) is densely bristly. The fruit
28 is a brown, triangular-ovate nutlet, covered with small warts, which has an open groove on one
29 side. Four nutlets are produced by each flower (*Flora of North America* 2010; Jepson 2010;
30 Nature Serve 2010).

31
32 Clokey's cryptantha is restricted to few locations near Barstow, California. It occurs on
33 Mojave Desert scrub, ridge crests, and desert woodlands on sandy or gravelly soils at elevations
34 between 2,625 and 2,950 ft (800 and 900 m) (Jepson 2010; Nature Serve 2010).

35
36 There are no data available from which meaningful inferences can be made regarding
37 population trends or changes in the distribution of Clokey's cryptantha in California, but because
38 this plant is endemic to California, conservation of this species is needed to ensure it remains a
39 part of the state's flora. Major threats are associated with habitat disturbance or destruction,
40 timber harvest, recreation, fire, grazing, effects of small population size, woody plant
41 encroachment, exotic species invasion, succession, global climate change, and pollution.

42
43 Clokey's cryptantha could occur in the affected area of the Pisgah SEZ.

1 **Compact Cat's-Eye (*Cryptantha compacta*)**

2
3 ESA Listing Status: Not Listed
4 BLM Listing Status: Listed as Sensitive
5 State Listing Status: Not Listed
6 Rarity: Nevada State Rank S1; Utah State Rank S2
7

8 Compact cat's-eye is an herbaceous perennial dicot in the Boraginaceae family that is
9 native to Utah but also occurs in Nevada. The plant is 1- to 4-in. (3- to 10-cm) tall and consists of
10 numerous erect bristly stems, each with a rosette of basal leaves, arising from a woody base. The
11 crowded, alternate, oval leaves on the stems are also bristly. Compact cat's-eye blooms from
12 May to June with clusters of blossoms, with white petals and yellow throats, at the ends of the
13 branches. The oval base of each flower (the calyx) is covered with long, bristly hairs. The fruit is
14 a small, smooth, brown nutlet, four of which are produced by each flower (Nature Serve 2010;
15 *Utah Rare Plant Guide* 2010)
16

17 Compact cat's-eye grows in a variety of habitats, including salt desert shrub and mixed
18 desert shrub communities, on gravelly loam and on open slopes and ridges at elevations of 6,200
19 to 7,400 ft (1,885 to 2,250 m) (*Utah Rare Plant Guide* 2010).
20

21 There are no data available from which meaningful inferences can be made regarding
22 population trends or changes in the distribution of compact cat's-eye in Utah, but conservation of
23 this species is needed to ensure it remains a part of Utah's flora. Major threats are associated
24 with habitat disturbance or destruction, timber harvest, recreation, fire, grazing, effects of small
25 population size, woody plant encroachment, exotic species invasion, succession, global climate
26 change, and pollution.
27

28 Compact cat's-eye could occur in the affected areas of the following SEZs: Escalante
29 Valley, Milford Flats South, and Wah Wah Valley.
30
31

32 **Coulter's Goldfields (*Lasthenia glabrata* ssp. *coulteri*)**

33
34 ESA Listing Status: Not Listed
35 BLM Listing Status: Listed as Sensitive (California)
36 State Listing Status: Not Listed
37 Rarity: California State rank S2
38

39 Coulter's goldfields is an annual herbaceous dicot in the Asteraceae (sunflower) family
40 that is native to California and regionally endemic to California, Baja California, and Mexico.
41 The plant consists of a simple or branching erect stem that is up to 24-in. (60-cm) tall and may be
42 smooth or slightly hairy. The stems bear widely separated, smooth, opposite leaves that are linear
43 or awl-shaped. The leaves at the ends of the stems may be alternate. Coulter's goldfields blooms
44 from February to June with yellow composite flowers that arise from leaf bases at the ends of the
45 stems. The fruit is a club-shaped, warty-hairy achene (*Flora of North America* 2010;
46 Jepson 2010; Nature Serve, 2010).
47

1 Coulter's goldfields is endemic to California and grows in salt marshes, swamps, playas,
2 alkaline sinks, and vernal pools at elevations below 4,000 ft (1,220 m) (Jepson 2010; Nature
3 Serve 2010).

4
5 There are no data available from which meaningful inferences can be made regarding
6 population trends or changes in the distribution of Coulter's goldfields in California, but because
7 it is endemic to California, conservation of this species is needed to ensure it remains a part of
8 California's flora. Major threats are associated with habitat disturbance or destruction, recreation,
9 fire, grazing, effects of small population size, exotic species invasion, succession, global climate
10 change, and pollution (Nature Serve 2010).

11
12 Coulter's goldfields could occur in the affected areas of the Pisgah SEZ.

13
14
15 **Creamy Blazing Star (*Mentzelia tridentata*)**

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

21
22 Creamy blazing star is an annual herbaceous dicot in the Loasaceae family that is native
23 and endemic to California. The plant consists of a branching, erect, hairy stem that is 2- to 10-in.
24 (5- to 25-cm) tall. The stem bears widely separated, opposite, lance-shaped leaves that are wavy-
25 edged and have irregular teeth. Creamy blazing star blooms from March to May with white to
26 pale yellow flowers that arise from leaf bases at the end of the stem. The fruit is a barrel-shaped
27 to cylindrical capsule on a short stalk that may be erect or bent downward. The capsule contains
28 a compressed, ashy-white seed (Jepson 2010; Nature Serve 2010).

29
30 Creamy blazing star is endemic to California and grows in Mojave Desert creosote bush
31 scrub communities on rocky and sandy substrates at elevations below 3,900 ft (1,200 m)
32 (Jepson 2010; Nature Serve 2010).

33
34 There are no data available from which meaningful inferences can be made regarding
35 population trends or changes in the distribution of creamy blazing star in California, but because
36 it is endemic to the central Mojave Desert of California, conservation of this species is needed to
37 ensure it remains a part of California's flora. Major threats are associated with habitat
38 disturbance or destruction, recreation, fire, grazing, effects of small population size, exotic
39 species invasion, succession, global climate change, and pollution (Nature Serve 2010).

40
41 Creamy blazing star could occur in the affected areas of the Pisgah and Riverside East
42 SEZs.

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

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

8 Death Valley beardtongue is a shrubby perennial dicot in the Plantaginaceae family that
9 is native and endemic to the Death Valley region of southern Nevada and California, where it is
10 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. 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; Nature
19 Serve 2010).
20

21 Death Valley beardtongue grows in Mojave Desert scrub communities at elevations
22 between 2,800 and 4,600 ft (851 and 1,398 m) (Jepson 2010; Nature Serve 2010).
23

24 There are no data available from which meaningful inferences can be made regarding
25 population trends or changes in the distribution of Death Valley beardtongue in Nevada and
26 California, but because it is endemic to the Death Valley region, conservation of this species is
27 needed to ensure it remains a part of these state's flora. Other major threats are associated with
28 habitat disturbance or destruction, recreation, fire, grazing, effects of small population size,
29 exotic species invasion, succession, global climate change, and pollution (Nature Serve 2010).
30

31 Death Valley beardtongue could occur in the affected areas of the Amargosa Valley SEZ.
32
33

34 **Desert Cymopterus (*Cymopterus deserticola*)**

35
36 ESA Listing Status: Not Listed
37 BLM Listing Status: Listed as Sensitive (California)
38 State Listing Status: Not Listed
39 Rarity: None
40

41 Desert cymopterus is a long-lived, perennial, herbaceous dicot in the Apiaceae (carrot)
42 family that is native to California and endemic to the Western Mojave Desert. The plant is
43 stemless and is 2- to 8-in. (5- to 20-cm) tall. A cluster of basal leaves and a leafless flower stalk
44 arise underground from the crown of a buried, deep taproot. The root crown also bears buds that
45 will give rise to new plants in future years. The smooth, grayish-green, basal leaves are oval in
46 outline and pinnately dissected into deep lobes. Desert cymopterus blooms from March to May

1 with a spherical inflorescence at the end of the erect flower stalk (scape) that rises above the
2 basal leaves. The ball-like inflorescence is composed of hundreds of tiny purple flowers. The
3 fruits are two flattened, appressed seeds that are hairy, have prominent ridges, and have wings on
4 the edges (Jepson 2010; Nature Serve 2010).

5
6 Desert cymopterus is endemic to habitats in the Western Mojave Desert in California and
7 grows in deep, loose, well-drained, fine to coarse sandy soils of alluvial fan basins. It often
8 occurs in low sand dunes and on sandy slopes. Its elevation ranges between 2,060 and 3,060 ft
9 (690 and 930 m) (Jepson 2010; Nature Serve 2010).

10
11 Desert cymopterus has experienced a short-term decline in recent years; the decline is
12 suspected to be due mostly to human threats. Conservation of this endemic species is needed to
13 ensure it remains a part of California's flora. Major threats are associated with habitat
14 disturbance or destruction, recreation, fire, grazing, effects of small population size, exotic
15 species invasion, succession, global climate change, and pollution (Nature Serve 2010).

16
17 Desert cymopterus could occur in the affected area of the Pisgah SEZ.

18
19
20 **Desert Night-Blooming Cereus (*Peniocereus greggii* var. *greggii*)**

21
22 ESA Listing Status: Not Listed
23 BLM Listing Status: Listed as Sensitive (New Mexico)
24 State Listing Status: Endangered in New Mexico
25 Rarity: New Mexico State Rank S1; USFWS Species of Concern

26
27 The desert night-blooming cereus is known from southern New Mexico and western
28 Texas. It occurs in sandy to silty gravelly soils in desert grassland communities. It also found in
29 gravelly flats and washes. Desert night-blooming cereus could occur in the affected area of the
30 following SEZs: Afton and Mason Draw.

31
32
33 **Eastwood Milkweed (*Asclepias eastwoodiana*)**

34
35 ESA Listing Status: Not Listed
36 BLM Listing Status: Listed as Sensitive (Nevada)
37 State Listing Status: Not Listed
38 Rarity: Nevada State Rank S2; USFWS Species of Concern

39
40 Eastwood milkweed is a perennial herbaceous dicot in the Asclepiadaceae (milkweed)
41 family that is native and endemic to Arizona on public and private lands in Esmeralda, Lander,
42 Lincoln, and Nye Counties. The plant consists of several erect to spreading thick stems arising
43 from a buried root crown. The stems are 4- to 8-in. (10- to 20-cm) tall and bear thick, widely
44 separated, opposite leaves that are oval in outline and pointed. The leaf margins are covered with
45 short, woolly hair. Eastwood milkweed blooms in late spring with white hooded flowers in
46 clusters that arise from leaf bases near the ends of the stems. After opening, each flower is

1 subtended by a ring of small, purplish, leaf-like bracts. The fruit is an erect, spindle-shaped, dry
2 follicle (capsule) on a short stalk that splits open on one side when mature. Each of the numerous
3 seeds has a tuft of silky hairs that help the seeds disperse on the wind. *Asclepias eastwoodiana* is
4 a synonym for *Asclepias uncialis* ssp. *ruthiae* (Nature Serve 2010).

5
6 Eastwood milkweed grows in open areas on a wide variety of basic (pH usually >8)
7 soils—including calcareous clay knolls, sand, carbonate or basaltic gravels, and shale outcrops—
8 generally barren and lacking competition. It frequently occurs in small washes or other moisture-
9 accumulating microsites in the shadscale, mixed-shrub, sagebrush, and lower pinyon-juniper
10 zones at elevations between 4,700 and 7,100 ft (1,428 and 2,158 m) (Nevada Natural Heritage
11 Program 2010).

12
13 There are no data available from which meaningful inferences can be made regarding
14 population trends or changes in the distribution of Eastwood milkweed in Nevada, but because
15 this species is endemic to Nevada, conservation of this species is needed to ensure it remains a
16 part of Nevada’s flora. Major threats are associated with habitat disturbance or destruction,
17 recreation, effects of small population size, exotic species invasion, succession, global climate
18 change, and pollution.

19
20 Eastwood milkweed could occur in the affected areas of the following SEZs: Delmar
21 Valley, Dry Lake Valley North, East Mormon Mountain, Gold Point, and Millers.

22 23 24 **Flat-Seeded Spurge (*Chamaesyce platysperma*)**

25
26 ESA Listing Status: Not Listed
27 BLM Listing Status: Listed as Sensitive (California)
28 State Listing Status: Not Listed
29 Rarity: California State Rank S1

30
31 Flat-seeded spurge is an herbaceous annual dicot in the Euphorbiaceae family that is
32 native to California but also occurs in Arizona. The plant forms sprawling mounds from 20 to
33 40 in. (50 to 100 cm) in diameter. The stems are arching-ascending when young but become
34 more prostrate with age, and they contain milky sap. The widely spaced leaves are opposite and
35 oval. Flat-seeded spurge blooms from February to September with solitary yellowish flowers on
36 short stalks that arise from leaf bases along the stems. The fruit is a round capsule that is exerted
37 from the flower base on a lax stalk and contains a white seed. *Chamaesyce platysperma* is a
38 synonym for *Euphorbia platysperma* (Arizona Game and Fish Department 2010; Jepson 2010;
39 Nature Serve 2010).

40
41 Flat-seeded spurge grows on sandy substrates of desert dunes within Sonoran Desert
42 scrub communities at elevations below 650 ft (200 m) (California Native Plant Society 2010).

43
44 There are no data available from which meaningful inferences can be made regarding
45 population trends or changes in the distribution of flat-seeded spurge in California, but
46 conservation of this species is needed to ensure it remains a part of California’s flora. Major

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

4
5 Flat-seeded spurge could occur in the affected areas of the following SEZs: Imperial East
6 and Pisgah.

7
8
9 **Fragile Rockbrake (*Cryptogramma stelleri*)**

10
11 ESA Listing Status: Not Listed
12 BLM Listing Status: Listed as Sensitive (Colorado)
13 State Listing Status: Not Listed
14 Rarity: Colorado State Rank S2

15
16 Fragile rockbrake is a perennial fern that is native to Colorado but also occurs in several
17 western states and Canada. Ferns reproduce via tiny spores shed into the air; therefore, the plants
18 have no flowers, fruits, or seeds. The spores eventually settle to the soil and germinate to form
19 inconspicuous subterranean gametophytes, from which aerial plants (sporophytes) develop.
20 Fragile rockbrake consists of scaly creeping stems (rhizomes) that are fleshy and brittle, which
21 produce erect pinnately compound fronds (leaves) that are 2- to 8-in. (5- to 20-cm) tall and only
22 persist until late summer, when they die and are shed. In this species, the fertile (spore-bearing)
23 and sterile fronds are different in appearance. The fertile fronds are narrower but slightly longer
24 than the sterile ones, and the edges of the pinnules curl under to cover the spore-bearing
25 structures on their underside edges. Spores are shed during summer (*Flora of North*
26 *America* 2010; Nature Serve 2010).

27
28 Fragile rockbrake grows in moist soils on shaded limestone cliffs and rock ledges, often
29 in association with mosses, at elevations higher than 7,000 ft (2,100 m) (*Flora of North*
30 *America* 2010; Nature Serve 2010).

31
32 There are no data available from which meaningful inferences can be made regarding
33 population trends or changes in the distribution of fragile rockbrake in Colorado, but
34 conservation of this species is needed to ensure it remains a part of Colorado's flora. Fragile
35 rockbrake is afforded some protection by the remote, relatively inaccessible location of its
36 habitat. Major threats are associated with habitat disturbance or destruction, recreation, effects of
37 small population size, exotic species invasion, succession, global climate change, and pollution.

38
39 Fragile rockbrake could occur in the affected areas of the following SEZs: Antonito
40 Southeast, Fourmile East, and Los Mogotes.

41
42
43 **Frisco Buckwheat (*Eriogonum soredium*)**

44
45 ESA Listing Status: Under review for listing
46 BLM Listing Status: Listed as Sensitive (Utah)

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

4 Frisco buckwheat is a densely matted, mound-forming, perennial dicot herb that is native
5 to Utah and endemic to the San Francisco Mountains in Beaver County. The plant is 1- to 1.6-in.
6 (2- to 4-cm) tall, and the herbage is white-hairy. The vegetative stems are densely crowded with
7 elongated oval leaves that have a tendency to curl. The short, erect, leafless, flowering stalks
8 (scapes) are hairy and rise above the cushion of vegetative stems, and they bear round clusters of
9 white or pinkish flowers at their ends from June to September. The fruit is a light brown, three-
10 sided achene (*Flora of North America* 2010; NatureServe 2010; *Utah Rare Plant Guide* 2010).
11

12 Frisco buckwheat grows on gravelly to rocky limestone slopes, in mixed saltbush and
13 sagebrush communities and in pinyon-juniper communities on white limestone outcrops at
14 elevations between 6,600 and 7,300 ft (2,006 and 2,220 m) (*Flora of North America* 2010;
15 NatureServe 2010).
16

17 There are no data available from which meaningful inferences can be made regarding
18 population trend or changes in the distribution of Frisco buckwheat in Utah, but conservation of
19 this species is needed to ensure it remains a part of Utah's flora. Major threats are associated
20 with habitat disturbance or destruction, mining, timber harvest, recreation, fire, grazing, effects
21 of small population size, woody plant encroachment, exotic species invasion, succession, global
22 climate change, and pollution.
23

24 Frisco buckwheat could occur in the affected area of the Wah Wah Valley SEZ.
25
26

27 **Frisco Clover (*Trifolium friscanum*)**

28
29 ESA Listing Status: Under review for listing
30 BLM Listing Status: Listed as Sensitive (Utah)
31 State Listing Status: Not Listed
32 Rarity: Utah State Rank S1
33

34 Frisco clover is a mat-forming herbaceous perennial dicot in the family Fabaceae (bean
35 family) that is endemic to Beaver and Millard Counties in Utah. The plant consists of numerous
36 short stems arising from a rhizomatous woody crown to form a cushion that is 0.3- to 1-in.
37 (0.8- to 3-cm) tall. The stems are obscured by densely crowded, alternate, trifoliolate compound
38 leaves. The stems and leaves are silvery-hairy. Frisco clover blooms in June with clusters of
39 reddish-purple, pea-like flowers that are produced on stalks arising from leaf bases at the ends of
40 the stems. The fruits are oblong pods that are enclosed in the persistent, withered petals and
41 calyx and contain several smooth brown or black seeds (*Flora of North America* 2010;
42 NatureServe 2010; *Utah Rare Plant Guide* 2010).
43

44 Frisco clover grows on volcanic gravels and limestone substrates in association with
45 pinyon-juniper woodlands at elevations between 6,900 and 7,300 ft (2,098 and 2,219 m) (*Utah*
46 *Rare Plant Guide* 2010).
47

1 There are no data available from which meaningful inferences can be made regarding
2 population trends or changes in the distribution of Frisco clover in Utah, but conservation of this
3 species is needed to ensure it remains a part of Utah’s flora. Major threats are associated with
4 habitat disturbance or destruction, mining, timber harvest, recreation, fire, grazing, effects of
5 small population size, woody plant encroachment, exotic species invasion, succession, global
6 climate change, and pollution.

7
8 Frisco clover could occur in the affected areas of the Wah Wah Valley SEZ.

9
10
11 **Giant Spanish-Needle (*Palafoxia arida* var. *gigantea*)**

12
13 ESA Listing Status: Not Listed
14 BLM Listing Status: Listed as Sensitive (California)
15 State Listing Status: Not Listed
16 Rarity: California State rank S1

17
18 Giant Spanish-needle is a large, shrubby, annual or perennial herbaceous dicot in the
19 Asteraceae (sunflower) family that is native to California but also occurs in Arizona. The plant
20 consists of numerous erect, slender, much-branched stems that are 36- to 72-in. (91- to 183-cm)
21 tall. The stems bear widely spaced, long, linear, pointed, dark green leaves that are opposite near
22 the base and alternate above. The stems may be glandular and hairy on their upper parts. Giant
23 Spanish-needle blooms from February to May with white to pink-purple composite flowers at the
24 ends of the branches. The fruit is a four-angled achene that has a tuft of scales at the end (a
25 pappus), is dandelion-like, and is dispersed by the wind (California Native Plant Society 2010;
26 NatureServe 2009).

27
28 Giant Spanish-needle grows on desert sand dunes, along riverine environments, and
29 irrigation canals at elevations lower than 328 ft (100 m) (California Native Plant Society 2010).

30
31 There are no data available from which meaningful inferences can be made regarding
32 population trends or changes in the distribution of giant Spanish-needle in California, but
33 conservation of this species is needed to ensure it remains a part of California’s flora. Major
34 threats are associated with habitat disturbance or destruction, recreation, fire, grazing, effects of
35 small population size, exotic species invasion, succession, global climate change, and pollution.

36
37 Giant Spanish-needle could occur in the affected areas of the following SEZs: Imperial
38 East and Riverside East.

39
40
41 **Glass Mountain Coral-Root (*Hexaletris nitida*)**

42
43 ESA Listing Status: Not Listed
44 BLM Listing Status: Listed as Sensitive
45 State Listing Status: Endangered in New Mexico
46 Rarity: New Mexico State Rank S1; USFWS Species of Concern

1 Glass mountain coralroot (*Hexalectris nitida*), also known as shining coralroot, occurs in
2 southern New Mexico and central and western Texas. In New Mexico, the species occurs in
3 Eddy and Otero Counties and in the Guadalupe and Cornudas Mountains (Nature Serve 2010;
4 NMRPTC 2010).

5
6 Glass mountain coralroot inhabits deep, shaded canyon sides and bottoms in litter and
7 oak-juniper-pinyon pine woodlands in humus at elevations ranging from 700 to 4,900 ft (200 to
8 1,500 m). Populations are small, and individuals grow widely scattered in very small colonies.
9 Associated orchids include *Hexalectris spicata*, *Epipactis gigantean*, and *Hexalectris warnockii*
10 (Nature Serve 2010; NMRPTC 2010).

11
12 Although glass mountain coralroot flowers from June to early August, the plants may not
13 flower every year, and the number of flowering plants varies greatly between years. Individual
14 plants may remain underground completely for more than one year. The plants are self-
15 pollinating.

16
17 The Glass Mountain coral-root could occur in the affected areas of the Red Sands SEZ.

18 19 20 **Gold Butte Moss (*Didymodon nevadensis*)**

21
22 ESA Listing Status: Not Listed
23 BLM Listing Status: Listed as Sensitive (Nevada)
24 State Listing Status: Not Listed
25 Rarity: Nevada State Rank S1
26

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

42
43 Gold Butte moss grows on or near gypsiferous deposits and outcrops or limestone
44 boulders, especially on east- to north-facing slopes of loose, uncompacted soil. It is typically
45 associated with other mosses and lichens. Its elevation ranges between 1,300 and 2,300 ft (395

1 and 700 m) (*Flora of North America* 2010; Nature Serve 2010; Nevada Natural Heritage
2 Program 2010).

3
4 There are no data available from which meaningful inferences can be made regarding
5 population trends or changes in the distribution of Gold Butte moss in Nevada, but conservation
6 of this species is needed to ensure it remains a part of Nevada's flora. Major threats are
7 associated with habitat disturbance or destruction, recreation, effects of small population size,
8 woody plant encroachment, exotic species invasion, succession, global climate change, and
9 pollution.

10
11 The Gold Butte moss may occur in the affected area of the following SEZs: Dry Lake and
12 East Mormon Mountain.

13
14
15 **Golden Barrel Cactus (*Ferocactus cylindraceus* var. *eastwoodiae*)**

16
17 ESA Listing Status: Not Listed
18 BLM Listing Status: Not Listed
19 State Listing Status: Arizona Salvage Restricted (SR)
20 Rarity: Arizona State Rank S1

21
22 Golden barrel cactus is a large perennial dicot cactus in the family Cactaceae that is
23 native and endemic to Arizona. The plant is a large, erect, spiny cactus with an unbranched,
24 unsegmented succulent stem in the form of a cylinder that may be 6.5-ft (2-m) tall or higher and
25 1.3 ft (0.4 m) in diameter. The stem has 21 to 31 prominent ribs that are armed with clusters of
26 stiff spines arising from wart-like tubercles (areoles). Each areole has 12 to 32 erect and
27 spreading spines, the longest of which are 3- to 7-in. (7.5- to 17-cm) long, and may be whitish,
28 yellow, pink, dull red, or brown. In var. *eastwoodiae*, the central spine is conspicuously yellow
29 or straw-yellow. Golden barrel cactus blooms from April to May with a crown of flowers that are
30 crowded among the dense spines at the top of the columnar stem. The individual flowers are
31 maroon on the outside and yellow on the inside. The fruit is a yellow, ovoid, leathery or fleshy,
32 smooth berry that is spineless and contains black pitted seeds. The dried flower parts are
33 persistent on the top of the mature fruit. *Ferocactus cylindraceus* var. *eastwoodiae* is a synonym
34 for *Ferocactus acanthodes* var. *eastwoodiae* and *Ferocactus eastwoodiae* (Arizona Game and
35 Fish Department 2010; *Flora of North America* 2010; NatureServe 2010).

36
37 Golden barrel cactus grows on gravelly or rocky hillsides, canyon walls, and wash
38 margins in central Arizona. Its elevation ranges between 1,280 and 3740 ft (390 and 1,140 m)
39 (Arizona Game and Fish Department 2010).

40
41 There are no data available from which meaningful inferences can be made regarding
42 population trends or changes in the distribution of Golden barrel cactus in Arizona, but because
43 this plant is an endemic, conservation of this species is needed to ensure it remains a part of
44 Arizona's flora. Major threats are associated with habitat disturbance or destruction, recreation,
45 fire, grazing, effects of small population size, exotic species invasion, succession, global climate
46 change, and pollution.

1 Golden barrel cactus could occur in the affected areas of the Bullard Wash SEZ.

2
3
4 **Grama Grass Cactus (*Sclerocactus papyracanthus*)**

5
6 ESA Listing Status: Not Listed
7 BLM Listing Status: Listed as Sensitive (New Mexico)
8 State Listing Status: Not Listed
9 Rarity: Not Listed

10
11 Grama grass cactus (*Sclerocactus papyracanthus*) occurs in southern Arizona, New
12 Mexico, and Western Texas. Typical habitat is pinyon-juniper woodland, Chihuahuan desert
13 scrub, and desert and Great Plains grassland on open flats or gentle slopes between 4,900 and
14 7,200 ft (1,500-2,200 m). Sandy soils with a calcerous or gypseous component are characteristic.
15 Associated vegetation includes blue grama grass (*Bouteloua gracilis*), Fendler's three-awn
16 (*Aristida fendleri*), and New Mexico feathergrass (*Stipa neomexicana*) (*Flora of North America*
17 2010; Nature Serve 2010; NMRPTC 2010).

18
19 Grama grass cactus' white flowers appear in April and May, with fruits appearing in
20 early June that are dry and tan colored when mature (*Flora of North America* 2010; Nature Serve
21 2010).

22
23 Once abundant in parts of its range, grama grass cactus populations are sharply reduced
24 due to rangeland degradation, collection, and development. Additional threats include the cactus
25 and succulent trade, overgrazing and trampling by livestock, off-road vehicle traffic, and
26 urbanization (Nature Serve 2010).

27
28 Grama grass cactus may occur in the affected area of the following SEZs: Afton, Mason
29 Draw, and Red Sands.

30
31
32 **Halfring Milkvetch (*Astragalus mohavensis* var. *hemigyris*)**

33
34 ESA Listing Status: Not Listed
35 BLM Listing Status: Listed as Sensitive (Nevada)
36 State Listing Status: Not Listed
37 Rarity: Nevada State rank S2; USFWS Species of Concern

38
39 Halfring milkvetch is a small, herbaceous, annual or short-lived perennial dicot in the
40 Fabaceae (bean) family that is native and endemic to Nevada. The plant consists of a taproot
41 with a woody crown that gives rise to several open, widely branched, weakly ascending stems
42 that are 2- to 14-in. (5- to 35-cm) long. All of the herbage is covered with fine hair that gives the
43 plant a silvery-gray appearance. The stems bear alternate, widely separated, pinnately compound
44 leaves on long stalks. The oval-pointed, thick leaflets are opposite. Halfring milkvetch blooms
45 during April to June with ascending clusters of pea-like flowers on stalks arising from leaf bases.
46 The flowers are pinkish purple with darker purple veins, and each flower base (the calyx) is

1 covered with hairs. The fruits are large, oblong, curved, hairy pods that are attached to the plant
2 by short stalks. The stiffly leathery pods contain numerous smooth seeds. *Astragalus hemigyris*
3 is a synonym for *Astragalus mohavensis* var. *hemigyris* (Jepson 2010; NatureServe 2010;
4 Nevada Natural Heritage Program 2010).

5
6 Halfring milkvetch grows on carbonate gravels and derivative soils on terraced hills and
7 ledges, open slopes, and along washes within the creosote-bursage, blackbrush, and mixed-shrub
8 habitat communities. Its elevation ranges between 3,000 and 5,600 ft (914 and 1,707 m)
9 (Jepson 2010; Nature Serve 2010; Nevada Natural Heritage Program 2010).

10
11 There are no data available from which meaningful inferences can be made regarding
12 population trends or changes in the distribution of halfring milkvetch in Nevada, but because this
13 species is endemic to Nevada, conservation of this species is needed to ensure it remains a part of
14 Nevada's flora. Major threats are associated with habitat disturbance or destruction, recreation,
15 fire, grazing, effects of small population size, woody plant encroachment, exotic species
16 invasion, succession, global climate change, and pollution (Nature Serve 2010; Nevada Natural
17 Heritage Program 2010).

18
19 Halfring milkvetch could occur in the affected areas of the Dry Lake SEZ.

20 21 22 **Harwood's Eriastrum (*Eriastrum harwoodii*)**

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

28
29 Harwood's eriastrum is an annual herbaceous dicot in the Polemoniaceae (phlox) family
30 that is native and endemic to California. The plant consists of a branching erect stem that is up to
31 8-in. (20-cm) tall. The stems bear widely separated alternate leaves that are thread-like and may
32 be three-lobed near the base. The leaves are yellow-green and densely woolly. Harwood's
33 eriastrum blooms from March to June with small, head-like inflorescences that are densely
34 woolly and arise from leaf bases toward the ends of the stems. The individual flowers are straw-
35 yellow, cream, or white. The fruit is a capsule that usually contains two seeds. *Eriastrum*
36 *sparsiflorum* ssp. *harwoodii* is a synonym for *Eriastrum harwoodii* (Jepson 2010; Nature
37 Serve 2010).

38
39 Harwood's eriastrum is endemic to southern California and grows on desert sand dunes
40 in creosote bush scrub and other sandy habitats at elevations between 650 and 3,000 ft (200 and
41 915 m) (California Native Plant Society 2010; Jepson 2010).

42
43 There are no data available from which meaningful inferences can be made regarding
44 population trends or changes in the distribution of Harwood's eriastrum in California, but
45 because it is endemic to southern California, conservation of this species is needed to ensure it
46 remains a part of California's flora. Major threats are associated with habitat disturbance or

1 destruction, recreation, fire, grazing, effects of small population size, exotic species invasion,
2 succession, global climate change, and pollution (California Native Plant Society 2010).

3
4 Harwood's eriastrum could occur in the affected area of the following SEZs: Iron
5 Mountain, Pisgah, and Riverside East.

6
7
8 **Hohokam Agave (*Agave murpheyi*)**

9
10 ESA Listing Status: Not Listed

11 BLM Listing Status: Listed as Sensitive (Arizona)

12 State Listing Status: Arizona Highly Safeguarded (HS)

13 Rarity: Arizona State Rank S2; USFWS Species of Concern

14
15 Hohokam agave is a perennial monocot succulent in the Agavaceae family that is native
16 and endemic to Nevada and Sonora, Mexico. The plant consists of a basal rosette of crowded,
17 fleshy, long-lived leaves, and it is 24- to 47-in. (60- to 120-cm) tall. The ascending leaves are
18 spatula-shaped, have undulating edges armed with spines, and have a stiff spine at the end of the
19 leaf. The smooth leaves are light bluish-green to yellow-green, often cross-banded, and slightly
20 incurved toward the center of the rosette. Hohokam agave matures to reproductive age after 10 to
21 30 years. The plant blooms from late winter to spring by producing a very tall, erect, flowering
22 stalk that reaches 10 to 13 ft (3 to 4 m) in height. The terminal one-quarter of this stalk bears
23 crowded flower clusters on slightly ascending side branches. The individual flowers are waxy
24 cream-green with purplish or brownish tips. After flowering, the flower stalk's side branches
25 produce numerous bulbils that can produce new plants. Hohokam agave blooms once and then
26 dies. The fruit is an oval, beaked capsule on a short stalk. However, the plant rarely produces
27 seed and propagates primarily via bulbils (*Flora of North America* 2010; Nature Serve 2010).

28
29 Hohokam agave grows on benches or alluvial terraces on gentle bajada slopes above
30 major drainages in desert scrub communities at elevations between 1,300 and 3,200 ft (395 and
31 973 m). The bulbils are easily transported and transplanted, and some occurrences appear to be
32 associated with old American Indian living sites (*Flora of North America* 2010; Nature
33 Serve 2010).

34
35 There are no data available from which meaningful inferences can be made regarding
36 population trends or changes in the distribution of Hohokam agave in Arizona, but because this
37 plant is endemic to the deserts of central Arizona, conservation of this species is needed to
38 ensure it remains a part of Arizona's flora. Major threats are associated with habitat disturbance
39 or destruction, recreation, fire, grazing, effects of small population size, woody plant
40 encroachment, exotic species invasion, succession, global climate change, and pollution
41 (AZGFD 2010).

42
43 Hohokam agave could occur in the affected areas of the following SEZs: Bullard Wash
44 and Gillespie.

1 **Holmgren Lupine (*Lupinus holmgrenianus*)**

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

8 Holmgren lupine is an herbaceous perennial dicot in the Fabaceae (bean) family that is
9 native to Nevada and probably endemic to the Death Valley region of southern Nevada and
10 California. The plant consists of several stout, erect stems that are 16- to 26-in. (40- to 70-cm)
11 tall. All of the herbage is covered with long hair. The stems are subtended by large, palmately
12 compound basal leaves with four to seven spindle-shaped leaflets. The stems bear alternate
13 leaves that are similar to the basal leaves, but smaller. Holmgren lupine blooms during April to
14 June with attractive spikes of whorled pea-like flowers that rise above the leaves from the ends
15 of the stems or that arise from leaf bases. The flowers are violet to purple with a yellow patch on
16 the upper petal. The fruits are oblong, hairy, legume pods that are attached to the plant by short
17 stalks. Each pod contains five to seven smooth seeds (Jepson 2010; Nature Serve 2010).
18

19 Holmgren lupine grows on dry desert slopes, washes, and valleys on volcanic substrates,
20 sometimes in association with *Artemisia tridentata*-dominated communities, and in pinyon-
21 juniper woodlands. Its elevation ranges between 4,600 and 8,200 ft (1,398 to 2,493 m)
22 (Jepson 2010; Nature Serve 2010).
23

24 There are no data available from which meaningful inferences can be made regarding
25 population trends or changes in the distribution of Holmgren lupine in Nevada, but because this
26 species is probably endemic to the Death Valley region of southern Nevada and California,
27 conservation of this species is needed to ensure it remains a part of these state's flora. Major
28 threats are associated with habitat disturbance or destruction, recreation, fire, grazing, effects of
29 small population size, woody plant encroachment, exotic species invasion, succession, global
30 climate change, and pollution (Jepson 2010; Nature Serve 2010; Nevada Natural Heritage
31 Program 2010).
32

33 The Holmgren lupine may occur in the affected area of the following SEZs: Amargosa
34 Valley and Gold Point.
35
36

37 **Jone's Globemallow (*Sphaeralcea caespitosa*)**

38
39 ESA Listing Status: Not Listed
40 BLM Listing Status: Listed as Sensitive (Utah)
41 State Listing Status: Not Listed
42 Rarity: Nevada State Rank S2; Utah State Rank S2
43

44 Jone's globemallow is an herbaceous perennial dicot in the family Malvaceae that is
45 native to Utah but also occurs in Nevada. The plant is 1- to 10-in. (2- to 25-cm) tall and consists
46 of several erect, branching stems arising from a branched woody crown. All of the plant herbage

1 is densely hairy, giving the plant a gray appearance. Thick, fleshy, alternate leaves are crowded
2 on the stems. Jone's globemallow blooms from May to June and again in September with red-
3 orange flowers on flower stalks that arise from leaf bases at the ends of the stems. The fruit is a
4 globe-shaped group of wedge-shaped carpels. Each carpel has dense hairs on the wide end and
5 contains one or more kidney-shaped seeds (Nature Serve 2010; *Utah Rare Plant Guide* 2010).
6

7 Jone's globemallow typically grows on calcareous soils and gravels derived from Sevy
8 dolomite, in association with mixed shrub, pinyon-juniper, and grassland communities at
9 elevations between 5,000 and 6,500 ft (1,525 and 1,980 m) (Nature Serve 2010; *Utah Rare Plant*
10 *Guide* 2010).
11

12 There are no data available from which meaningful inferences can be made regarding
13 population trends or changes in the distribution of Jone's globemallow in Utah, but conservation
14 of this species is needed to ensure it remains a part of Utah's flora. Major threats are associated
15 with habitat disturbance or destruction, timber harvest, recreation, fire, grazing, effects of small
16 population size, woody plant encroachment, exotic species invasion, succession, global climate
17 change, and pollution.
18

19 Jone's globemallow could occur in the affected areas of the following SEZs: Escalante
20 Valley, Milford Flats South, and Wah Wah Valley.
21
22

23 **Kuenzler's Hedgehog Cactus (*Echinocereus fendleri* var. *kuenzleri*)**

24

25 ESA Listing Status: Endangered
26 BLM Listing Status: Not Listed
27 State Listing Status: Endangered in New Mexico
28 Rarity: New Mexico State Rank S1
29

30 The Kuenzler hedgehog cactus occurs in the central highlands of New Mexico.
31 Populations are found in Chaves, Eddy, Lincoln, and Otero Counties; on the southern side of the
32 Capitan Mountains; on the eastern and northwestern lower sides of the Sacramento Mountains;
33 and on the northern end of the Guadalupe Mountains. The Kuenzler hedgehog cactus is normally
34 found on gentle slopes or near the shoulders of hilltops or hillsides, at elevations from 5,800 to
35 6,400 ft. Within the range of the Kuenzler hedgehog cactus, the dominant species include yerba
36 de pasmo, blue grama, plains lovegrass, Harvard's buckwheat, eggleaf silktassle, ribbed false
37 pennyroyal, alligator juniper, oneseed juniper, trong bladderpod, little nipple cactus, pinyon pine,
38 and mealycup sage (Nature Serve 2010; NMRPTC 2010).
39

40 The Kuenzler hedgehog cactus reproduces only by sexual reproduction and is unable to
41 reproduce vegetatively by fragmentation like other species of cactus. There are no defined
42 germination dates for this species. It appears that it can germinate during any part of the spring,
43 summer, or fall if sufficient rainfall is present. Budding occurs in April, and flowering normally
44 occurs in early May, although the species can flower earlier in warm, wet years. Fruits form in
45 August, and the dispersal of seeds, which typically occurs in September and October, depends on
46 the abundance of summer rainfall. Seeds are over 90% viable and survive about 5 years.
47

1 The Kuenzler hedgehog cactus was federally listed as endangered on October 26, 1979
2 (USFWS 1979a). Critical habitat has not been designated.

3
4 Few natural threats to the species are known. Although most of the area in which the
5 species occurs is relatively open with little ground cover, it is believed that at one time, stands of
6 grass covered the region, which may have acted as a crucial element in catching seeds and hiding
7 seedlings from herbivores. The removal of grass and forb cover from the pinyon-juniper
8 woodland appears to be the major factor contributing to the overall decline of this species.
9 However, the construction of highways throughout the region has also resulted in loss of habitat.
10 At present, the major cause of mortality is destruction by grazing, as cattle, sheep, and other
11 grazers remove essential grass cover. The species is also sensitive to trampling by livestock.
12 Other threats to the species include illegal collection and development (Nature Serve 2010;
13 NMRPTC 2010).

14
15 The Kuenzler's hedgehog cactus may occur in the affected area of the Red Sands SEZ.

16
17
18 **Las Vegas Bearpoppy (*Arctomecon californica*)**

19
20 ESA Listing Status: Not Listed
21 BLM Listing Status: Not Listed
22 State Listing Status: Protected in Nevada
23 Rarity: USFWS Species of Concern
24

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

37
38 Las Vegas bearpoppy grows on open, dry, spongy or powdery, often dissected
39 ("badland") or hummocked soils with high gypsum content, typically with a well-developed soil
40 crust, in areas of generally low relief on all aspects and slopes, with a sparse cover of other
41 gypsum-tolerant species. Its elevation ranges between 1,050 and 3,650 ft (319 and 1,110 m)
42 (Nature Serve 2010; Nevada Natural Heritage Program 2010).

43
44 There are no data available from which meaningful inferences can be made regarding
45 population trends or changes in the distribution of Las Vegas bearpoppy in Nevada, but
46 conservation of this species is needed to ensure it remains a part of Nevada's flora. Major threats

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

4
5 Las Vegas bearpoppy could occur in the affected areas of the Dry Lake SEZ.

6
7
8 **Las Vegas Buckwheat (*Eriogonum corymbosum* var. *nilesii*)**

9
10 ESA Listing Status: Candidate
11 BLM Listing Status: Listed as Sensitive (Nevada)
12 State Listing Status: Not Listed
13 Rarity: Nevada State Rank S1
14

15 Las Vegas buckwheat is a large perennial dicot shrub that is native and endemic to
16 Nevada. The plant is known only from the Las Vegas and Muddy Mountains region of Clark
17 County, Nevada. The plant consists of a mounded clump of spreading to upright, densely
18 branched woody stems that are 12- to 48-in. (30- to 122-cm) tall. The branches are covered with
19 woolly hair and somewhat swollen at the nodes. The branches bear alternate, oval leaves that are
20 densely hairy on the underside and silvery with very fine hair above. Las Vegas buckwheat
21 blooms from August to November with dense, branching clusters of small, yellow flowers that
22 are borne at the ends of the branches. The flowering branches are covered with sparse, silvery
23 tufts of cobwebby hair and may be thorny. The fruit is a light brown, oval, three-sided achene
24 enclosed by three leaf-like bracts (*Flora of North America* 2010; Nature Serve 2010; Nevada
25 Natural Heritage Program 2010).

26
27 Las Vegas buckwheat grows on or near gypsum soils, in washes, drainages, or in areas of
28 generally low relief in the Mojave Desert. Its elevation ranges between 1,900 and 3,850 ft (578
29 and 1,170 m) (*Flora of North America* 2010; Nature Serve 2010; Nevada Natural Heritage
30 Program 2010).

31
32 Las Vegas buckwheat populations are declining rapidly in Nevada, where the species is
33 known from 15 occurrences encompassing an area of less than 1,500 acres (6 km²). Because the
34 species is endemic and declining, conservation of this species is essential to ensure it remains a
35 part of Nevada's flora. Major threats are associated with habitat disturbance or destruction,
36 recreation, fire, grazing, effects of small population size, woody plant encroachment, exotic
37 species invasion, succession, global climate change, and pollution (Nevada Natural Heritage
38 Program 2010)

39
40 Las Vegas buckwheat could occur in the affected areas of the following SEZs: Dry Lake
41 and East Mormon Mountain.

1 **Latimer's Woodland-Gilia (*Saltugilia latimeri*)**

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

8 Latimer's woodland-gilia is an annual herbaceous dicot in the Polemoniaceae (phlox)
9 family that is native and endemic to California. The plant consists of one to several erect
10 branching stems that are 2- to 12-in. (5- to 30-cm) tall. The slender stems are subtended by a
11 rosette of semi-erect basal leaves that are pinnately divided into deep lobes. The widely spaced
12 stem leaves are similar but smaller or are merely toothed near the ends of the stems. Latimer's
13 woodland-gilia blooms from March to June with small, ascending, head-like inflorescences that
14 arise from leaf bases toward the ends of the stems. The individual funnel-shaped flowers are
15 small and have pinkish-lavender petals and a purple throat. The fruit is a narrow, oval capsule
16 that contains numerous seeds (Jepson 2010; Nature Serve 2010).
17

18 Latimer's woodland-gilia is endemic to California and grows in Mojave Desert scrub
19 communities, pinyon-juniper woodlands, and dry washes on rocky or sandy substrates at
20 elevations between 1,300 and 6,500 ft (400 and 2,000 m) (Jepson 2010; Nature Serve 2010).
21

22 There are no data available from which meaningful inferences can be made regarding
23 population trends or changes in the distribution of Latimer's woodland-gilia in California, but
24 because it is endemic to southern California, conservation of this species is needed to ensure it
25 remains a part of California's flora. Major threats are associated with habitat disturbance or
26 destruction, recreation, fire, grazing, effects of small population size, exotic species invasion,
27 succession, global climate change, and pollution (Nature Serve 2010).
28

29 Latimer's woodland-gilia could occur in the affected areas of the Pisgah and Riverside
30 East SEZs.
31
32

33 **Limestone Beardtongue (*Penstemon calcareus*)**

34
35 ESA Listing Status: Not Listed
36 BLM Listing Status: Listed as Sensitive (California)
37 State Listing Status: Not Listed
38 Rarity: California State Rank S2
39

40 Limestone beardtongue is a perennial herbaceous dicot in the Scrophulariaceae family
41 that is native to California and also occurs in Nevada. The plant consists of an erect hairy-
42 glandular stem that is 3- to 10-in. (7- to 25-cm) tall and arises from a basal cluster of oblong
43 leaves. The stem bears widely separated, opposite leaves that are lance- or spoon-shaped and
44 may have shallow teeth. Limestone beardtongue blooms from April to May with bright pink to
45 rose-purple, trumpet-shaped flowers in a spike-like inflorescence at the end of the stem. The

1 outer surfaces of the petals and other flower parts are minutely glandular-hairy. The fruit is an
2 oval capsule that contains numerous seeds (Jepson 2010; Nature Serve 2010).

3
4 Limestone beardtongue grows in Mojave Desert scrub communities, pinyon-juniper
5 forests, and Joshua tree woodlands in limestone crevices and on rocky carbonate substrates. Its
6 elevation ranges between 3,280 and 6,550 ft (1,000 and 2,000 m) (Jepson 2010; Nature
7 Serve 2010).

8
9 There are no data available from which meaningful inferences can be made regarding
10 population trends or changes in the distribution of limestone beardtongue in California, but
11 conservation of this species is needed to ensure it remains a part of California's flora. Major
12 threats are associated with habitat disturbance or destruction, recreation, fire, grazing, effects of
13 small population size, exotic species invasion, succession, global climate change, and pollution
14 (Nature Serve 2010).

15
16 Limestone beardtongue could occur in the affected areas of the Pisgah SEZ.
17
18

19 **Little San Bernardino Mountains Linanthus (*Linanthus maculatus*)**

20
21 ESA Listing Status: Not Listed
22 BLM Listing Status: Listed as Sensitive (California)
23 State Listing Status: Not Listed
24 Rarity: California State Rank S1
25

26 Little San Bernardino Mountains linanthus is a very small annual herbaceous dicot in the
27 Polemoniaceae (phlox) family that is native and endemic to California. The plant arises from a
28 long taproot and is 0.4- to 1.2-in. (1- to 3-cm) high. The tiny, hairy stems branch to form small
29 matted clusters on the sand surface. The stems bear oblong-linear, hairy, thick leaves that are
30 only a few millimeters long. Little San Bernardino Mountains linanthus blooms from March to
31 May with small, crowded, head-like flower clusters at the ends of the stems. The flowers are
32 white with a red spot near the base of each recurved petal. The fruit is a capsule that contains
33 several seeds. *Gilia maculata* is a synonym for *Linanthus maculatus* (Jepson 2010; Nature
34 Serve 2010).

35
36 Little San Bernardino Mountains linanthus is known from fewer than 20 occurrences in
37 southern California near Joshua Tree National Park in the Little San Bernardino Mountains. The
38 plant grows on desert dunes and sandy flats in creosote bush scrub and Joshua tree woodland
39 communities at elevations lower than 6,900 ft (2,100 m) (Jepson 2010; Nature Serve 2010).

40
41 There are no data available from which meaningful inferences can be made regarding
42 population trends or changes in the distribution of Little San Bernardino Mountains linanthus in
43 California, but because it is endemic to southern California, conservation of this species is
44 needed to ensure it remains a part of California's flora. Major threats are associated with habitat
45 disturbance or destruction, recreation, fire, grazing, effects of small population size, exotic
46 species invasion, succession, global climate change, and pollution (Nature Serve 2010).

1 Little San Bernardino Mountains linanthus could occur in the affected areas of the
2 following SEZs: Pisgah and Riverside East.

3
4
5 **Long-Calyx Milkvetch (*Astragalus oophorus* var. *lonchocalyx*)**

6
7 ESA Listing Status: Not Listed
8 BLM Listing Status: Listed as Sensitive (Nevada and Utah)
9 State Listing Status: Not Listed
10 Rarity: Nevada State Rank S2; Utah State Rank S1

11
12 Long-calyx milkvetch is a herbaceous perennial dicot in the family Fabaceae (bean
13 family) that is native to Colorado but also occurs in Nevada. The plant arises from a woody
14 crown; is 6- to 12-in. (15- to 30-cm) tall; and has erect, branching, hairy stems. The stems bear
15 alternate, pinnately compound hairy leaves. Clusters of pea-like flowers are produced in June on
16 stalks arising from leaf bases at the ends of the stems. The large flowers are pinkish purple and
17 hang down from the nodding flower stalks. The fruits are large, oblong, inflated, hairy pods that
18 remain attached to the plant by short stalks and contain numerous smooth seeds (Nature
19 Serve 2010; *Utah Rare Plant Guide* 2010).

20
21 Long-calyx milkvetch grows in a variety of habitats, including pinyon-juniper
22 woodlands, sagebrush, and mixed desert shrub communities at elevations between 5,800 and
23 7,500 ft (1,750 and 2,300 m) (*Utah Rare Plant Guide* 2010).

24
25 There are no data available from which meaningful inferences can be made regarding
26 population trends or changes in the distribution of long-calyx milkvetch in Utah, but
27 conservation of this species is needed to ensure it remains a part of Utah's flora. Major threats
28 are associated with habitat disturbance or destruction, timber harvest, recreation, fire, grazing,
29 effects of small population size, woody plant encroachment, exotic species invasion, succession,
30 global climate change, and pollution.

31
32 Long-calyx milkvetch could occur in the affected area of the following SEZs: Delamar
33 Valley, Dry Lake Valley North, Escalante Valley, and Wah Wah Valley.

34
35
36 **Many-Stemmed Spider-Flower (*Cleome multicaulis*)**

37
38 ESA Listing Status: Not Listed
39 BLM Listing Status: Listed as Sensitive (Colorado)
40 State Listing Status: Not Listed
41 Rarity: Colorado State Rank S2; USFWS Species of Concern

42
43 Many-stemmed spider-flower is a slender herbaceous annual dicot in the Capparaceae
44 family that is native to Colorado. The usually unbranched or sparingly branched leafy stems are
45 8- to 28-in. (20- to 70-cm) tall, with alternate leaves that are palmately compound with three
46 narrow leaflets that often fold along the midrib. Many-stemmed spider-flower blooms from

1 August to September with pink flowers that are borne on thin stalks arising from the base of
2 reduced stem leaves. The fruits are large, oblong, multi-seeded capsules with a stalk-like base,
3 and they droop at maturity. The round seeds are light brown and smooth (*Colorado Rare Plant*
4 *Field Guide* 2010; Nature Serve 2010)

5
6 Many-stemmed spider-flower is restricted to habitats that include the margins of moist,
7 slightly saline depressions, such as alkali sinks, alkaline meadows, and old lake beds at
8 elevations of 3,600 to 4,200 ft (1,098 to 1,281 m) (Nature Serve 2010).

9
10 There are no data available from which meaningful inferences can be made regarding
11 population trends or changes in the distribution of many-stemmed spider-flower in Colorado, but
12 conservation of this species is needed to ensure it remains a part of Colorado's flora. Major
13 threats are associated with habitat disturbance or destruction, timber harvest, recreation, fire,
14 grazing, effects of small population size, woody plant encroachment, exotic species invasion,
15 succession, global climate change, and pollution.

16
17 Many-stemmed spider-flower could occur in the affected areas of the following SEZs:
18 Antonito Southeast, Fourmile East, and Los Mogotes East.

21 **Marble Canyon rockcress (*Sibara grisea*)**

22
23 ESA Listing Status: Not Listed

24 BLM Listing Status: Listed as Sensitive (New Mexico)

25 State Listing Status: Not Listed

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

27
28 Marble canyon rockcress (*Sibara grisea*), also known as gray sibara, occurs in southern
29 New Mexico and western Texas. Within New Mexico, its distribution includes Chaves, Eddy,
30 and Otero Counties. Habitat includes rock crevices, the bases of limestone cliffs, limestone or
31 travertine and cliff faces in chaparral, and mesic mountain canyons and pinyon-juniper woodland
32 communities. Its elevation ranges from 4,500 to 6,000 ft (1,350 to 1,800 m). This annual
33 forb/herb flowers in May and June (Nature Serve 2010; NMRPTC 2010).

34
35 Marble canyon rockcress is listed as sensitive by the BLM New Mexico State Office and
36 is a New Mexico and USFWS species of concern. Livestock grazing and energy development do
37 not threaten this species.

38
39 The Marble Canyon rockcress may occur in the affected area of the following SEZs:
40 Afton, Mason Draw, and Red Sands.

43 **McKelvey's Agave (*Agave mckelveyana*)**

44
45 ESA Listing Status: Not Listed

46 BLM Listing Status: Not Listed

1 State Listing Status: Arizona Salvage Restricted (SR)
2 Rarity: None

3
4 McKelvey's agave is a perennial monocot succulent in the Agavaceae family that is
5 native and endemic to Nevada. The plant consists of a basal rosette of fleshy, long-lived leaves
6 that is 8-18 in. (20-45 cm) tall. A few suckers (small plants that may eventually become
7 independent) may form around the base of the rosette. The spreading leaves are spatula-shaped,
8 concave towards the base, have undulating edges armed with spines, and have a stiff spine at the
9 end of the leaf. The smooth leaves are light green, yellow-green, or dark green and are often
10 cross-banded. McKelvey's agave matures to reproductive age after a variable number of years
11 (ten or more) depending on environmental conditions. The plant blooms from mid-spring to mid-
12 summer by producing a very tall, erect flowering stalk that reaches 6.5-16 ft. (2-5 m.) in height.
13 The terminal one-third of this stalk bears yellow tubular flowers in crowded clusters on slightly
14 ascending side branches. McKelvey's agave blooms once and then dies. The fruit is an oblong,
15 striated, beaked capsule that contains black seeds and is borne on a short stalk (*Flora of North*
16 *America* 2010; Nature Serve 2010).

17
18 McKelvey's agave grows on sandy to gravelly or rocky places with desert scrub,
19 chaparral and pinyon-juniper woodlands at elevations between 3,000 and 6,000 ft (912-1824 m)
20 (*Flora of North America* 2010; NatureServe 2010).

21
22 There are no data available from which meaningful inferences can be made regarding
23 population trends or changes in the distribution of McKelvey's agave in Arizona, but because
24 this plant is endemic to Arizona, conservation of this species is needed to ensure it remains a part
25 of Arizona's flora. Major threats are associated with habitat disturbance or destruction,
26 recreation, fire, grazing, effects of small population size, woody plant encroachment, exotic
27 species invasion, succession, global climate change, and pollution.

28
29 McKelvey's agave could occur in the affected areas of the Bullard Wash SEZ.

30
31
32 **Mojave Monkeyflower (*Mimulus mohavensis*)**

33
34 ESA Listing Status: Not Listed
35 BLM Listing Status: Listed as Sensitive (California)
36 State Listing Status: Not Listed
37 Rarity: California State Rank S2; USFWS Species of Concern

38
39 Mojave monkeyflower is an annual herbaceous dicot in the Phrymaceae family (recently
40 moved from the Scrophulariaceae family) that is native to California and endemic to San
41 Bernardino County. The plant consists of an erect, hairy-glandular stem that is 0.75- to 4-in. (2-
42 to 10-cm) tall and bears opposite, narrow oval leaves. All of the herbage is usually hairy and
43 reddish green to red-purple in color. Mojave monkeyflower blooms from April to June with
44 solitary flowers on short stalks, each arising from a leaf base near the end of the stem. The
45 tubular neck of each flower is surrounded by a hairy, red, ribbed base (the calyx) with pointed
46 lobes. The flower petals are maroon with a white or pinkish margin and a network of dark

1 maroon veins. The fruit is an oval capsule that contains numerous yellow to dark brown seeds
2 (Jepson 2010; Nature Serve 2010).

3
4 Mojave monkeyflower is endemic to the western Mojave Desert in San Bernardino
5 County, California. The plant grows on gravelly banks of desert washes and in Mojave Desert
6 scrub and Joshua Tree woodland habitats at elevations below 3,900 ft (1,200 m) (Jepson 2010;
7 Nature Serve 2010).

8
9 There are no data available from which meaningful inferences can be made regarding
10 population trends or changes in the distribution of Mojave monkeyflower in California, but
11 because it is endemic to the Mojave Desert, conservation of this species is needed to ensure it
12 remains a part of California's flora. Major threats are associated with habitat disturbance or
13 destruction, recreation, fire, grazing, effects of small population size, exotic species invasion,
14 succession, global climate change, and pollution (Nature Serve 2010).

15
16 Mojave monkeyflower could occur in the affected areas of the Pisgah SEZ.

17
18
19 **Money Wild Buckwheat (*Eriogonum nummulare*)**

20
21 ESA Listing Status: Not Listed
22 BLM Listing Status: Listed as Sensitive (Utah)
23 State Listing Status: Not Listed
24 Rarity: Utah State Rank S1
25

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

35
36 Money wild buckwheat occurs in a variety of habitats that include sandy to occasionally
37 gravelly washes, flats, and slopes; saltbush and sagebrush communities; and pinyon-juniper
38 woodlands at elevations of 2,625 to 8,530 ft (800 to 2,600 m) (*Flora of North America* 2010).

39
40 There are no data available from which meaningful inferences can be made regarding
41 population trends or changes in the distribution of money wild buckwheat in Utah, but
42 conservation of this species is needed to ensure it remains a part of Utah's flora. Major threats
43 are associated with habitat disturbance or destruction, timber harvest, recreation, fire, grazing,
44 effects of small population size, woody plant encroachment, exotic species invasion, succession,
45 global climate change, and pollution.

1 Money wild buckwheat could occur in the affected areas of the following SEZs:
2 Escalante Valley, Milford Flats South, and Wah Wah Valley.

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

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

11
12 Munz's cholla is a large perennial dicot cactus in the Cactaceae family that is native to
13 California but also occurs in Mexico (Baja California). The plant is a large, erect, spiny cactus in
14 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. Munz's cholla blooms from March to May with sparse reddish maroon-brown flowers
20 on the branches. The fruit is a globose, dry berry that is tan when mature, contains pale yellow
21 seeds, and is spineless but bears numerous long glochids (*Flora of North America* 2010;
22 Jepson 2010; Nature Serve 2010).

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

28
29 There are no data available from which meaningful inferences can be made regarding
30 population trends or changes in the distribution of Munz's cholla in California, but because it is
31 rare in the state, conservation of this species is needed to ensure it remains a part of California's
32 flora. Major threats are associated with habitat disturbance or destruction, recreation, fire,
33 grazing, effects of small population size, exotic species invasion, succession, global climate
34 change, and pollution (Nature Serve 2010).

35
36 Munz's cholla could occur in the affected areas of the following SEZs: Imperial East,
37 Iron Mountain, and Riverside East.

38
39
40 **Needle Mountains Milkvetch (*Astragalus eurylobus*)**

41
42 ESA Listing Status: Not Listed
43 BLM Listing Status: Listed as Sensitive (Nevada)
44 State Listing Status: Not Listed
45 Rarity: Nevada State Rank S2; USFWS Species of Concern
46

1 Needle Mountains milkvetch is a small, herbaceous perennial dicot in the Fabaceae
2 (bean) family that is native to Nevada and also occurs in Arizona and Utah. In Nevada, the plant
3 is known from only six sites in Lincoln and Nye Counties. The plant consists of a taproot with a
4 woody crown that gives rise to several prostrate or trailing stems are woody below and up to
5 24-in. (61-cm) long. All of the herbage is covered with hair, making the plant appear silvery. The
6 stems bear alternate, pinnately compound leaves. The leaflets are oval-pointed and opposite.
7 Needle Mountains milkvetch blooms during April to July with clusters of pink-purple, pea-like
8 flowers on stalks arising from the leaf bases. The fruits are oblong legume pods that are strongly
9 curved with pointed tips and are attached to the plant by short stalks. The wrinkled pods, which
10 may be hairy, lie on the ground and eventually become woody. The pods contain numerous
11 smooth, heart-shaped seeds that are olive, brown, or black. *Astragalus tephrodes* var. *eurylobus*
12 is a synonym for *Astragalus eurylobus* (Nature Serve 2010; Nevada Natural Heritage
13 Program 2010).

14
15 Needle Mountains milkvetch grows on gravel washes and sandy soils in alkaline desert
16 and arid grasslands at elevations between 4,250 and 6,250 ft (1,292 and 1,900 m) (Nature
17 Serve 2010; Nevada Natural Heritage Program 2010).

18
19 There are no data available from which meaningful inferences can be made regarding
20 population trends or changes in the distribution of Needle Mountains milkvetch in Nevada, but
21 because this species is rare in the state, conservation of this species is needed to ensure it remains
22 a part of Nevada's flora. Major threats are associated with habitat disturbance or destruction,
23 recreation, fire, grazing, effects of small population size, woody plant encroachment, exotic
24 species invasion, succession, global climate change, and pollution.

25
26 The Needle Mountains milkvetch may occur in the affected area of the following SEZs:
27 Delamar Valley, Dry Lake Valley North, East Mormon Mountain, and Escalante Valley.

28 29 30 **Nevada Dune Beardtongue (*Penstemon arenarius*)**

31
32 ESA Listing Status: Not Listed

33 BLM Listing Status: Listed as Sensitive (Nevada)

34 State Listing Status: Not Listed

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

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

1 *maguirei* is a synonym for *Penstemon arenarius* (Nature Serve 2010; Nevada Natural Heritage
2 Program 2010).

3
4 Nevada dune beardtongue is dependent on sand dunes or deep sand occurring on deep,
5 loose, sandy soils of valley bottoms, aeolian deposits, and dune skirts, often in alkaline areas,
6 sometimes on road banks and other recovering disturbances crossing such soils, in shadscale
7 communities at elevations of 3,920 to 5,960 ft (1,195 to 1,817 m) (Nature Serve 2010; Nevada
8 Natural Heritage Program 2010).

9
10 Populations of Nevada dune beardtongue are declining at the sites where they grow in
11 Nevada. Because the plant is endemic to the Nevada, conservation of this species is needed to
12 ensure it remains a part Nevada's flora. Major threats are associated with habitat disturbance or
13 destruction, recreation, fire, grazing, effects of small population size, exotic species invasion,
14 succession, global climate change, and pollution (Nevada Natural Heritage Program 2010).

15
16 The Nevada dune beardtongue may occur in the affected area of Millers SEZ.

17
18
19 **Nevada Willowherb (*Epilobium nevadense*)**

20
21 ESA Listing Status: Not Listed

22 BLM Listing Status: Listed as Sensitive (Nevada and Utah)

23 State Listing Status: Not Listed

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

25
26 Nevada willowherb is a somewhat shrubby, perennial herb that occurs in Colorado,
27 Nevada, and Utah. The plant consists of several upright, persistent, woody branches that are 6- to
28 16-in. (15- to 40-cm) tall, arising from a stout taproot. Lance-shaped leaves that may be hairy or
29 nearly smooth are crowded along the hairy branches. Nevada willowherb blooms from June to
30 September with flower stalks that arise from leaf bases near the ends of the branches with
31 clusters of rose-purple flowers. The fruit is an elongated hairy and/or glandular capsule on a
32 short stalk that contains numerous dark brown seeds with a tuft of white hairs (pappus) at one
33 end (Nature Serve 2010; Nevada Natural Heritage Program 2010; *Utah Rare Plant Guide* 2010).

34
35 Nevada willowherb grows in pinyon-juniper woodlands and oak/mountain mahogany
36 communities, on talus slopes and rocky limestone outcrops at elevations between 5,000 and
37 8,800 ft (1,500 and 2,680 m) (*Utah Rare Plant Guide* 2010).

38
39 There are no data available from which meaningful inferences can be made regarding
40 population trends or changes in the distribution of Nevada willowherb in Utah, but conservation
41 of this species is needed to ensure it remains a part of Utah's flora. Major threats are associated
42 with habitat disturbance or destruction, timber harvest, recreation, fire, grazing, effects of small
43 population size, woody plant encroachment, exotic species invasion, succession, global climate
44 change, and pollution.

1 Nevada willowherb could occur in the affected area of the following SEZs: Delamar
2 Valley, Dry Lake Valley North, East Mormon Mountain, and Escalante Valley.

3
4
5 **New Mexico Rock Daisy (*Perityle staurophylla* var. *staurophylla*)**

6
7 ESA Listing Status: Not Listed

8 BLM Listing Status: Listed as Sensitive (New Mexico)

9 State Listing Status: Not Listed

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

11
12 New Mexico rock daisy (*Perityle staurophylla* var. *staurophylla*) is endemic to south
13 central New Mexico in Doña Ana, Otero, and Sierra Counties and the Sacramento, San Andres,
14 and Caballo Mountains. It occurs in crevices of dry limestone cliffs and boulders on protected
15 north and east faces at elevations between 4,900 and 7,00 ft (1,500 and 2,100 m)
16 (NMRPTC 2010).

17
18 The New Mexico rock daisy is classified as a perennial subshrub or forb/herb. It flowers
19 from June to September (NMRPTC 2010). Although the species is locally common in its limited
20 cliffside habitat that protects it from human impacts, it is listed as sensitive by the BLM New
21 Mexico State Office and is a USFWS and New Mexico species of concern.

22
23 The New Mexico rock daisy may occur in the affected area of the following SEZs: Afton,
24 Mason Draw, and Red Sands.

25
26
27 **Orocopia Sage (*Salvia greatae*)**

28
29 ESA Listing Status: Not Listed

30 BLM Listing Status: Listed as Sensitive (California)

31 State Listing Status: Not Listed

32 Rarity: California State Rank S2

33
34 Orocopia sage is a large shrubby perennial dicot in the Lamiaceae (mint) family that is
35 native and endemic to California. The plant is extensively branched from near ground level,
36 resulting in a very dense, bushy habit. The evergreen, mound-like plants can be up to 4-ft (1.2-m)
37 tall. The stems are covered with glandular hairs and bear widely separated, nondeciduous,
38 opposite, hairy leaves. The thick, leathery leaves are oval in outline and have several long,
39 pointed teeth with a spine at the end of each tooth. Orocopia sage blooms from March to April
40 with clusters of lavender flowers arising from the bases of the paired leaves toward the ends of
41 the branches. Each flower is subtended by a woolly, spiny base (the calyx). The fruit is a flat,
42 keeled, gray to brown nutlet. The nutlets develop in groups of four at the base of each flower
43 (Jepson 2010; Nature Serve 2010).

44
45 Orocopia sage is endemic to the Sonoran Desert of southern California. Its habitats
46 include the Orocopia Mountains in Riverside County to the Chocolate Mountains in Imperial

1 County. It grows in creosote bush scrub communities and dry washes at elevations lower than
2 2,600 ft (800 m) (Jepson 2010; Nature Serve 2010).

3
4 There are no data available from which meaningful inferences can be made regarding
5 population trends or changes in the distribution of Orocopia sage in California, but because it is
6 endemic to southern California, conservation of this species is needed to ensure it remains a part
7 of California's flora. Major threats are associated with habitat disturbance or destruction,
8 recreation, fire, grazing, effects of small population size, exotic species invasion, succession,
9 global climate change, and pollution (Nature Serve 2010).

10
11 Orocopia sage could occur in the affected areas of the following SEZs: Iron Mountain
12 and Riverside East.

13
14
15 **Palmer's Mariposa-Lily (*Calochortus palmeri* var. *palmeri*)**

16
17 ESA Listing Status: Not Listed
18 BLM Listing Status: Listed as Sensitive (California)
19 State Listing Status: Not Listed
20 Rarity: California State Rank S2; USFWS Species of Concern

21
22 Palmer's mariposa-lily is an herbaceous perennial monocot in the Liliaceae (lily) family
23 that is native and endemic to California. The plant arises from an underground bulb with an
24 erect, smooth stem that is usually 12- to 24-in. (30- to 60-cm) tall. The stem may branch toward
25 the end and is subtended by a long, linear basal leaf that usually withers by the time the plant
26 blooms. Bulblets are usually present at the base of the stem. Palmer's mariposa-lily blooms from
27 April to June with an inflorescence of up to five white, pink, or lavender bell-shaped flowers at
28 the end of the leafless flower stem. Each flower petal has a brownish nectary at its base that is
29 surrounded by yellow hairs. The fruit is an erect, linear, angled capsule containing numerous flat,
30 yellowish or tan seeds (California Native Plant Society 2010; *Flora of North America* 2010;
31 Nature Serve 2010).

32
33 Palmer's mariposa-lily is endemic to California, where it is distributed mostly throughout
34 the coastal mountain ranges from the Los Angeles area to the San Francisco Bay area. It grows in
35 moist to wet meadows or on moist grassy knolls. It is also found along creeks or swales and
36 within chaparral, pinyon woodlands, and pine forest communities at elevations between 3,280
37 and 7,850 ft (1,000 and 2,390 m) (California Native Plant Society 2010; *Flora of North*
38 *America* 2010; Nature Serve 2010).

39
40 Palmer's mariposa-lily is declining rapidly in the counties where it occurs. Therefore,
41 conservation of this species is needed to ensure it remains a part of California's flora. Major
42 threats are associated with habitat disturbance or destruction, timber harvest, recreation, fire,
43 grazing, effects of small population size, woody plant encroachment, exotic species invasion,
44 succession, global climate change, and pollution (Nature Serve 2010).

45
46 Palmer's mariposa-lily could occur in the affected areas of the Pisgah SEZ.
47

1 **Parish's Alkali Grass (*Puccinellia parishii*)**

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

8 Parish's alkali grass is an annual herbaceous monocot grass in the Poaceae family that is
9 native to Arizona but also occurs in California, Colorado, and New Mexico. The plant is
10 geographically widespread but rare locally. Numerous erect stems arise from a base of fibrous
11 roots and are 0.8- to 8-in. (2- to 20-cm) tall. Long, linear, spreading basal leaves clasp the stems
12 at their basal ends. Stem leaves are very narrow and inrolled. The plant is bluish-green in color.
13 Parish's alkali grass blooms from April to May with inflorescences that are slender spikes at the
14 ends of the stems composed of the scale-like flower parts. It is an ephemeral grass, beginning to
15 produce stems near the end of winter, flowering in early spring, and dying and withering away
16 by July. The fruit is an oval caryopsis ("seed") with a longitudinal groove (AZGFD 2010; Nature
17 Serve 2010).
18

19 Parish's alkali grass is restricted to alkaline or salty, moist soils, often forming a white
20 crust on the surface, and it is typically found along seeps and streams and in canyon bottoms,
21 playas, and marshes as well as in seasonally wet areas at the heads of drainages or on gentle
22 slopes in pinyon-juniper associations to desert communities at elevations of 2,950 to 6,070 ft
23 (900 to 1,850 m) (AZGFD 2010; Nature Serve 2010).
24

25 There are no data available from which meaningful inferences can be made regarding
26 population trends or changes in the distribution of Parish's alkali grass in Arizona, but
27 conservation of this locally rare species is needed to ensure it remains a part of Arizona's flora.
28 Major threats are associated with habitat disturbance or destruction, recreation, fire, grazing,
29 effects of small population size, woody plant encroachment, exotic species invasion, succession,
30 global climate change, and pollution.
31

32 Parish's alkali grass could occur in the affected areas of the Bullard Wash SEZ.
33
34

35 **Parish's Brittlegrass (*Atriplex parishii*)**

36
37 ESA Listing Status: Not Listed
38 BLM Listing Status: Listed as Sensitive (California)
39 State Listing Status: Not Listed
40 Rarity: California State Rank S1; USFWS Species of Concern
41

42 Parish's brittlegrass is a small, annual herbaceous dicot in the Chenopodiaceae family
43 that is native to California and essentially endemic to Riverside County, although the plant may
44 occur in Mexico (Baja California). The plant consists of several fragile, white, branching stems
45 that are erect or spreading to prostrate, 2- to 12-in. (5- to 30-cm) long, and covered with scurfy-
46 mealy scales. The stems bear numerous oval-pointed leaves that are gray and densely scurfy or

1 hairy. The leaves are smaller and more widely separated toward the ends of the branches.
2 Parish's brittlescale blooms from June to October with separate small female and male
3 inflorescences (monoecious) at the bases of the leaves toward the ends of the stems. These
4 inflorescences are the same gray-green color as the herbage. They are compact and
5 inconspicuous, and each flower consists of several leaf-like bracts that enclose either the female
6 (ovary) or male (stamens) flower parts. The fruit is capsule-like, a dark brown seed enclosed by
7 the fused bracts, which form a winged achene (California Native Plant Society 2010; *Flora of*
8 *North America* 2010; Nature Serve 2010).

9
10 Parish's brittlescale is essentially endemic to southern California. The plant is restricted
11 to chenopod scrub, playas, and vernal pools in Riverside County, where it grows on saline and
12 alkaline soils at elevations between 100 and 6,200 ft (33 and 1,900 m) (California Native Plant
13 Society 2010; *Flora of North America* 2010; Nature Serve 2010).

14
15 There are no data available from which meaningful inferences can be made regarding
16 population trends or changes in the distribution of Parish's brittlescale in California, but because
17 it is essentially endemic to southern California, conservation of this species is needed to ensure it
18 remains a part of California's flora. Major threats are associated with habitat disturbance or
19 destruction, recreation, fire, grazing, effects of small population size, exotic species invasion,
20 succession, global climate change, and pollution (Nature Serve 2010).

21
22 Parish's brittlescale could occur in the affected areas of the Pisgah SEZ.
23
24

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

26
27 ESA Listing Status: Not Listed

28 BLM Listing Status: Listed as Sensitive

29 State Listing Status: Not Listed

30 Rarity: California State Rank S1; Nevada State Rank S2; USFWS Species of Concern
31

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

42
43 Parish's phacelia is rare in all of the locations where it has been found. The plant grows
44 in Mojave Desert scrub communities, dry lake margins, gypsum beds, and playas on alkaline-
45 clay soils at elevations between 1,800 and 3,900 ft (550 and 1,200 m) (California Native Plant
46 Society 2010; Jepson 2010; Nature Serve 2010).

1
2 There are no data available from which meaningful inferences can be made regarding
3 population trends or changes in the distribution of Parish's phacelia in California, but because
4 this plant is rare in California, conservation of this species is needed to ensure it remains a part of
5 the state's flora. Major threats are associated with habitat disturbance or destruction, timber
6 harvest, recreation, fire, grazing, effects of small population size, woody plant encroachment,
7 exotic species invasion, succession, global climate change, and pollution (Nature Serve 2010).
8

9 Parish's phacelia could occur in the affected area of the following SEZs: Bullard Wash,
10 Dry Lake, and Pisgah.
11
12

13 **Pima Indian Mallow (*Abutilon parishii*)**

14

15 ESA Listing Status: Not Listed
16 BLM Listing Status: Listed as Sensitive (Arizona)
17 State Listing Status: Arizona Salvage Restricted (SR)
18 Rarity: Arizona State Rank S2; USFWS Species of Concern
19

20 Pima Indian mallow is a shrubby, herbaceous, perennial dicot in the family Malvaceae
21 that is native and endemic to Arizona. The plant consists of several erect, branching, densely
22 hairy stems that arise from a woody rootstock and are up to 75-in. (190-cm) tall. The stems bear
23 widely separated, alternate, heart-shaped leaves with coarse, irregular teeth. The thick leaves
24 have a corrugated appearance and indented veins, are densely velvety on both surfaces, and are
25 dark green above and nearly white beneath. Pima Indian mallow has a relatively weak spring
26 flowering that is followed by a longer late-summer/fall bloom. Red-orange flowers are borne on
27 flower stalks that arise from leaf bases toward the ends of the stems. The flowers open only for
28 about one hour on sunny afternoons. The fruit is a globose, hairy capsule composed of a group of
29 wedge-shaped carpels. Each carpel has a reflexed, pointed tip and contains one or more brown
30 seeds (AZGFD 2010; Nature Serve 2010).
31

32 Pima Indian mallow grows in mesic habitats in full sun within higher elevation Sonoran
33 Desert scrub on rocky hillsides, cliff bases, canyon bottoms, and lower side slopes and ledges of
34 canyons among rocks and boulders. In riparian zones, the plant occurs on flat secondary terraces
35 but typically not in canyon bottoms. It is often found near trails, probably because of the
36 influence of the trail on the light, heat, and water of the microhabitat. Its elevation ranges from
37 1,720 to 4,900 ft (525 to 1,495 m) (AZGFD 2010; Nature Serve 2010).
38

39 There are no data available from which meaningful inferences can be made regarding
40 population trends or changes in the distribution of Pima Indian mallow in Arizona, but because it
41 is endemic to Arizona, conservation of this species is needed to ensure it remains a part of
42 Arizona's flora. Major threats are associated with habitat disturbance or destruction, timber
43 harvest, recreation, fire, grazing, effects of small population size, woody plant encroachment,
44 exotic species invasion, succession, global climate change, and pollution.
45

46 Pima Indian mallow could occur in the affected areas of the Bullard Wash SEZ.
47

1 **Pioche Blazingstar (*Mentzelia argillicola*)**

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

8 Pioche blazingstar is a perennial herbaceous dicot in the Loasaceae family that is native
9 and endemic to Nevada. The plant consists of a branching, erect to spreading stem with a semi-
10 woody base that is up to 10-in. (25-cm) tall. All of the herbage is bristly-hairy. The stem bears
11 widely separated, alternate, spatula-shaped to long-ovate leaves that are wavy-edged and have
12 shallow, rounded, irregular teeth. Pioche blazingstar blooms during the spring with yellow
13 flowers on short stalks that arise from leaf bases near the ends of the stems. The fruit is an erect,
14 cylindrical, hairy capsule, tapered to the base, on a short stalk. The capsule has several pointed
15 bracts on its top and contains several oval seeds that are flat at one end (Nevada Natural Heritage
16 Program 2010; Nature Serve 2010).
17

18 Pioche blazingstar grows on dry, soft, silty, clay soils on knolls and slopes with sparse
19 vegetation consisting mainly of *Artemisia pygmaea*, *Eriogonum nummulare*, *Gutierrezia*
20 *sarothrae*, and *Salvia dorrii* var. *dorrii*.
21

22 There are no data available from which meaningful inferences can be made regarding
23 population trends or changes in the distribution of Pioche blazingstar in Nevada, but because it is
24 endemic, conservation of this species is needed to ensure it remains a part of Nevada's flora.
25 Major threats are associated with habitat disturbance or destruction, recreation, fire, grazing,
26 effects of small population size, exotic species invasion, succession, global climate change, and
27 pollution.
28

29 The Pioche blazingstar may occur in the affected area of the following SEZs: Delamar
30 Valley and Dry Lake Valley North.
31
32

33 **Ripley's Milkvetch (*Astragalus ripleyi*)**

34
35 ESA Listing Status: Not Listed
36 BLM Listing Status: Listed as Sensitive (Colorado)
37 State Listing Status: Not Listed
38 Rarity: Colorado State Rank S2
39

40 Ripley's milkvetch is a tall, robust herbaceous perennial dicot in the family Fabaceae
41 (bean family) that is native to Colorado but also occurs in New Mexico. The plant arises from a
42 woody crown with rhizomes; is 16- to 36-in. (40- to 100-cm) tall; and has erect, branching stems
43 that are covered with long hairs appressed to the stems. The stems bear alternate, pinnately
44 compound leaves that are hairy on one or both surfaces. Large clusters of pea-like flowers are
45 produced from June to July on stalks arising from the leaf bases. The large flowers are pale
46 lemon yellow and hang down from the nodding flower stalks. The fruits are oblong, pointed

1 legumes (pods) that may be hairy or smooth, remain attached to the plant by long stalks, and
2 contain numerous smooth seeds that are olive, brown, or black (Nature Serve 2010).

3
4 Ripley's milkvetch grows in mixed conifer and shrubland habitats on rocky substrates at
5 elevations above 8,000 ft (2,400 m). The plant occurs exclusively on volcanic-derived soils
6 associated with the San Juan volcanic field (*Colorado Rare Plant Field Guide* 2010; Nature
7 Serve 2010).

8
9 Ripley's milkvetch is a regional endemic that is restricted to soils derived from volcanic
10 formations. Given its limited range, populations are currently vulnerable to habitat alteration
11 resulting from a variety of potential impacts. There are no data available from which meaningful
12 inferences can be made regarding population trends or changes in the distribution of Ripley's
13 milkvetch in Colorado, but conservation of this species is needed to ensure it remains a part of
14 Colorado's flora. Major threats are associated with habitat disturbance or destruction, timber
15 harvest, recreation, fire, grazing, effects of small population size, woody plant encroachment,
16 exotic species invasion, succession, global climate change, and pollution (Nature Serve 2010).

17
18 Ripley's milkvetch could occur in the affected areas of the following SEZs: Antonito
19 Southeast, Fourmile East, and Los Mogotes East.

20
21
22 **Rock Phacelia (*Phacelia petrosa*)**

23
24 ESA Listing Status: Not Listed
25 BLM Listing Status: Listed as Sensitive (Nevada)
26 State Listing Status: Not Listed
27 Rarity: Nevada State Rank S2

28
29 Rock phacelia is a herbaceous annual dicot in the Boraginaceae family that is native to
30 Nevada but also occurs in Arizona and Utah. The plant consists of several erect to ascending
31 stems, branched from the base, that are 4- to 12-in. (10- to 31-cm) tall. The stems bear leaves that
32 are alternate and mostly basal. The basal leaves are oval with wavy, rounded teeth. Stem leaves
33 are widely separated, similar to the basal leaves, and become smaller towards the ends of the
34 stems. The leaves are densely covered with spreading, shiny hairs. Rock phacelia blooms in the
35 spring with coiled, spike-like, fuzzy clusters of crowded flowers at the ends of the stems. The
36 flowers are bell-shaped with blue petals that become lighter toward their bases. The fruit is a
37 hairy, globose capsule containing four light brown, oblong seeds that have corrugated surfaces
38 (Nature Serve 2010; Nevada Natural Heritage Program 2010).

39
40 Rock phacelia grows on dry limestone and volcanic talus slopes of foothills, washes, and
41 gravelly canyon bottoms on substrates derived from calcareous material. It inhabits mixed desert
42 scrub and creosote bush and blackbrush communities at elevations between 2,500 and 5,800 ft.
43 (760 and 1,763 m) (Nature Serve 2010; Nevada Natural Heritage Program 2010).

44
45 There are no data available from which meaningful inferences can be made regarding
46 population trends or changes in the distribution of rock phacelia in Nevada, but conservation of

1 this species is needed to ensure it remains a part of Nevada’s flora. Major threats are associated
2 with habitat disturbance or destruction, recreation, fire, grazing, effects of small population size,
3 woody plant encroachment, exotic species invasion, succession, global climate change, and
4 pollution.

5
6 Rock phacelia could occur in the affected areas of the following SEZs: Delmar Valley,
7 Dry Lake and East Mormon Mountain.

8
9
10 **Rock Purpusia (*Ivesia arizonica* var. *saxosa*)**

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

16
17 The rock purpusia is a perennial herb endemic to southern Nevada. It inhabits crevices of
18 cliffs and boulders on volcanic substrates in pinyon-juniper communities at elevations between
19 4,900 and 6,900 ft (1,490 and 2,100 m). The rock purpusia may occur in the affected area of the
20 following SEZs: Amargosa Valley, Delamar Valley, and Dry Lake Valley North.

21
22
23 **Rock-Loving Aletes (*Neoparrya lithophila*)**

24
25 ESA Listing Status: Not Listed
26 BLM Listing Status: Listed as Sensitive (Colorado)
27 State Listing Status: Not Listed
28 Rarity: Colorado State Rank S2

29
30 Rock-loving aletes is a herbaceous perennial dicot in the Apiaceae (parsley) family that is
31 endemic to south central Colorado. The plants grow in clumps from taproots, with upright stems
32 that are 3- to 11-in. (8- to 29-cm) tall. The stems have alternate pinnately compound leaves that
33 are thick, glossy, and leathery. Rock-loving aletes blooms from May to early July with clusters
34 of pale yellow flowers at the ends of the stems. The fruit consists of two seed-like carpels (a
35 mericarp) that adhere to each other and then separate when ripe (Nature Serve 2010).

36
37 The habitat of rock-loving aletes includes igneous outcrops or sedimentary rock derived
38 from extrusive volcanics and north-facing cliffs and ledges within pinyon-juniper woodlands at
39 elevations of 7,000 to 10,000 ft (2,100 to 3,048 m) (*Colorado Rare Plant Field Guide* 2010;
40 Nature Serve 2010).

41
42 Rock-loving aletes is known only from Chaffee, Conejos, Fremont, Huerfano, Rio
43 Grande, and Saguache Counties in south central Colorado. There are no data available from
44 which meaningful inferences can be made regarding population trends or changes, but
45 conservation of this species is needed to ensure it remains a part of Colorado’s flora. Rock-
46 loving aletes is afforded some protection by the remote, relatively inaccessible location of its

1 habitat. Major threats are associated with habitat disturbance or destruction, recreation, effects of
2 small population size, global climate change, and pollution (*Colorado Rare Plant Field*
3 *Guide* 2010; Nature Serve 2010).

4
5 Rock-loving aletes could occur in the affected area of the following SEZs: Antonito
6 Southeast, Fourmile East, and Los Mogotes East.

7
8
9 **Rosy Two-Tone Beardtongue (*Penstemon bicolor* spp. *roseus*)**

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

15
16 The rosy two-tone beardtongue is a perennial forb that is known from Arizona,
17 California, and Nevada. This species occurs on calcareous, granitic, or volcanic substrates in
18 washes, roadsides, scree and outcrop bases, rock crevices, or similar places receiving enhanced
19 runoff at elevations between 1,800 and 4,850 ft (550 and 1,480 m). The rosy two-tone
20 beardtongue may occur in the affected area of the following SEZs: Dry Lake and East Mormon
21 Mountain.

22
23
24 **Rough Dwarf Greasebush (*Glossopetalon pungens* var. *pungens*)**

25
26 ESA Listing Status: Not Listed
27 BLM Listing Status: Listed as Sensitive (Nevada)
28 State Listing Status: Not Listed
29 Rarity: Nevada State Rank S2

30
31 The rough dwarf greasebush is a perennial shrub that is endemic to the Spring and Sheep
32 Ranges in southern Nevada. This species inhabits crevices of carbonate cliffs and outcrops,
33 generally within pinyon-juniper and montane coniferous woodlands. The rough dwarf
34 greasebush may occur in the affected area of the Dry Lake SEZ.

35
36
37 **Sacramento Prickly Poppy (*Argemone pleitacantha* spp. *pinnatisecta*)**

38
39 ESA Listing Status: Endangered
40 BLM Listing Status: Not Listed
41 State Listing Status: Endangered in New Mexico
42 Rarity: New Mexico State Rank S2

43
44 The Sacramento prickly poppy is a robust perennial species that occurs in canyons of the
45 west side of the Sacramento Mountains in New Mexico. The species occurs on disturbed areas
46 that are either semi-riparian or have a reliable seasonal provision of water. The plant is also often

1 found at springs and permanently wet sites as long as the soils are well-drained and on drier sites,
2 such as terraces above the normal level of flood flows. The Sacramento prickly poppy is known
3 to occur in seven canyon systems: Fresno, Dry, Alamo, Mule, San Andres, Dog, and Escondido.
4 In total, approximately 80% of the species' range is on National Forest system lands, 18% is on
5 privately owned land, and the remainder is on lands administered by the BLM. The Sacramento
6 prickly poppy is adapted to withstand some scouring by summer floods, which may encourage
7 seed germination. However, loss of riparian vegetation in Alamo Canyon as a result of water
8 diversion has increased the scouring intensity of flood events, rendering much of the active
9 channel either less suitable or unsuitable for the species. Loss of the system's ability to capture
10 fine material also makes the channels drier, reducing the survivability of seedlings that do
11 germinate. Seedlings are readily desiccated, and their survival is limited to sites where moisture
12 levels are higher or to periods when precipitation is above average. As a result of the capture of
13 most perennial flows on the west face of the Sacramento Mountains for use in the valley below,
14 the amount of suitable habitat has been much reduced. Pipeline rights-of-way and roadsides
15 provide the reduced vegetative competition and increased moisture that the plant requires and
16 frequently serve as artificial habitat for a substantial number of plants.

17
18 The Sacramento prickly poppy was federally listed as endangered on August 24, 1989
19 (USFWS 1989). Critical habitat has not been designated for this species.

20
21 The greatest ongoing threat to this species is reductions in water flow in the canyon
22 systems. It is likely that most of the remaining plants currently occupy the extreme margins of
23 what can be considered suitable habitat. It is not known how much occupied habitat was
24 depopulated when water was developed for human use. The loss of, at the least, the seasonal
25 flows out of the canyon and across the bajadas of the west slope could have resulted in the loss
26 of at least as many plants as the number that exist today in the degraded conditions of the canyon
27 proper.

28
29 The Sacramento prickly poppy may occur in the affected area of the Red Sands SEZ.

30 31 32 **Sand Food (*Pholisma sonora*)**

33
34 ESA Listing Status: Not Listed

35 BLM Listing Status: Listed as Sensitive (California)

36 State Listing Status: Arizona Highly Safeguarded (HS)

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

38
39 Sand food is a herbaceous perennial root parasite that lacks chlorophyll and the ability to
40 make its own food, as green plants can. It is a rare and unusual dicot in the Lennoaceae family
41 that is native to California and Arizona. The plant grows in sand dunes and consists of a long,
42 scaly, fleshy stem that extends below the surface to attach to the roots of a nearby desert shrub
43 and draw nourishment from that host plant. The underground stem can be up to 6.5-ft (2-m) long;
44 is grayish, whitish, or brown in color; and has alternate, glandular, scale-like leaves along its
45 surface. Sand food blooms from April to June with a saucer-shaped, fuzzy inflorescence at, or
46 slightly above, the sand surface that is up to 4 in. (10 cm) in diameter. The inflorescence consists

1 of tightly packed flower buds with hairy bases (the calyx) that are the color of sand. The flower
2 buds open in concentric circles successively from the outer edge of the head to the center. The
3 flowers are star-shaped with purple petals that have white edges. The fruit is a small, dry capsule
4 containing numerous flattened nutlets (AZGFD 2010; California Native Plant Society 2010;
5 Jepson Interchange 2010; Nature Serve 2010).

6
7 Sand food grows in loose, sand dune habitats in creosote bush scrub in the Sonoran
8 Desert at elevations below 650 ft (200 m) (AZGFD 2010; California Native Plant Society 2010;
9 Nature Serve 2010).

10
11 There are no data available from which meaningful inferences can be made regarding
12 population trends or changes in the distribution of sand food in California and Arizona, but
13 conservation of this rare species is needed to ensure it remains a part of these state's flora. Major
14 threats are associated with habitat disturbance or destruction, recreation, fire, grazing, effects of
15 small population size, exotic species invasion, succession, global climate change, and pollution.

16
17 Sand food could occur in the affected areas of the Imperial East SEZ.

18 19 20 **Sand Prickly-Pear Cactus (*Opuntia arenaria*)**

21
22 ESA Listing Status: Not Listed

23 BLM Listing Status: Not Listed

24 State Listing Status: Endangered in New Mexico

25 Rarity: New Mexico State Rank S2: USFWS Species of Concern

26
27 Sand prickly-pear cactus (*Opuntia arenaria*) occurs in the Rio Grande River and adjacent
28 valleys in southern New Mexico, western Texas, and northern Mexico. Within New Mexico,
29 populations exist in southern Doña Ana, Luna, and Socorro Counties. It inhabits sandy, rocky,
30 and silty areas, including semi-stabilized sand dunes among open Chihuahuan desert scrub, at
31 elevations ranging from 3,800 to 4,300 ft (1,160 to 1,300 m). The species is often associated with
32 honey mesquite and a sparse cover of grasses (Nature Serve 2010; NMRPTC 2010).

33
34 Sand prickly-pear cactus flowers in May to June. Flowers are yellow and may contain
35 pink or red tints. Green fruits change to tan when ripe, and the dry fruit stays on the plant
36 throughout the summer. The species has fewer chromosomes and higher morphological stability
37 than other dry-fruited species of *Opuntia* (NMRPTC 2010).

38
39 Much of the cactus's former habitat has been destroyed by urbanization and agricultural
40 development in the Rio Grande Valley. Cactus collectors and road widening also pose a threat to
41 populations. Currently, only seven populations are known in New Mexico (Nature Serve 2010;
42 NMRPTC 2010).

43
44 The sand prickly-pear cactus may occur in the affected area of the following SEZs: Afton
45 and Mason Draw.

1 **Sandhill Goosefoot (*Chenopodium cycloides*)**

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

8 Sandhill goosefoot (*Chenopodium cycloides*) occurs in south central New Mexico,
9 southern Colorado, Nebraska, Kansas, Oklahoma, and western Texas. It inhabits open, sandy
10 areas with sparse vegetation, especially along the edges of blowouts on sand dunes, sand sage
11 communities, *Quercus havardii* communities, and short-grass prairie communities. Its elevation
12 ranges from 2,600 to 4,900 ft (800 to 1,500 m). It occurs on gentle slopes, with inclines ranging
13 from 0 to 5%, although it may occur on steeper slopes in dune environments. Its distribution is
14 patchy and clumped, and its abundance varies temporally. It is difficult to measure population
15 trends because few sites have been visited more than once (Nature Serve 2010; NMRPTC 2010).
16

17 Sandhill goosefoot flowers in late June to August and fruits from early summer to fall. Its
18 fruit is red, ovoid, and minutely tuberculate. The plant may be self- or cross- pollinated, with its
19 pollen dispersed by wind. Seed production varies substantially from year to year depending on
20 factors such as disease, temperature, precipitation, and the herbivory of the flowers. It likely has
21 persistent, large seed banks that exhibit some form of dormancy. Hybridization has not been
22 observed (*Flora of North America* 2010; Nature Serve 2010; NMRPTC 2010).
23

24 Eleven occurrences of the sandhill goosefoot have been recorded in New Mexico since
25 1913. Threats include urbanization; mineral, oil and gas development; agriculture; range
26 conversion; overgrazing by livestock; and invasive species.
27

28 The sandhill goosefoot may occur in the affected area of the following SEZs: Afton and
29 Mason Draw.
30

31
32 **Sanicle Biscuitroot (*Cymopterus ripleyi* var. *saniculoides*)**

33
34 ESA Listing Status: Not Listed
35 BLM Listing Status: Listed as Sensitive (Nevada)
36 State Listing Status: Not Listed
37 Rarity: USFWS Species of Concern
38

39 The sanicle biscuitroot is a perennial herb that is endemic to Nevada from mixed desert
40 scrub and pinyon-juniper woodland communities on sandy to gravelly alkaline substrates and
41 volcanic deposits. The sanicle biscuitroot may occur in the affected area of the Millers SEZ.
42
43
44

1 **Scheer's Pincushion Cactus (*Coryphantha scheeri* var. *valida*)**

2
3 ESA Listing Status: Not Listed
4 BLM Listing Status: Not Listed
5 State Listing Status: Endangered in New Mexico
6 Rarity: New Mexico State Rank S2; USFWS Species of Concern
7

8 Scheer's pincushion cactus occurs in southern New Mexico in Hidalgo, Luna, Dona Ana,
9 Sierra, Socorro, Otero, and Eddy Counties. Habitat includes desert grassland, Chihuahuan desert
10 scrub communities, and, occasionally, rocky benches, washes, or bajadas at elevations of 3,300
11 to 3,600 ft (1,000 to 1,100 m). Substrate is deep sandy soil (AZGFD 2010).
12

13 Scheer's pincushion cactus flowers in July. Flowers are diurnal and form on new growth
14 and/or the last-produced areoles of the preceding year.
15

16 Occurrence of the Scheer's pincushion cactus is estimated to be only 21 to 300 plants.
17 Threats include horticultural collecting and agricultural conversion. The threat is high in
18 immediacy, moderate in scope, and low in severity. This species may occur within the affected
19 regions of the Red Sands SEZ (AZGFD 2010; NatureServe 2010).
20
21

22 **Sheep Fleabane (*Erigeron ovinus*)**

23
24 ESA Listing Status: Not Listed
25 BLM Listing Status: Listed as Sensitive (Nevada)
26 State Listing Status: Not Listed
27 Rarity: Nevada State Rank S2; USFWS Species of Concern
28

29 The sheep fleabane is a perennial forb that is endemic to Mount Irish and the Sheep and
30 Groom Ranges in southern Nevada. This species inhabits crevices of carbonate cliffs and
31 outcrops, generally within pinyon-juniper and montane coniferous woodlands. The sheep
32 fleabane may occur in the affected area of the following Dry Lake SEZ.
33
34

35 **Sheep Mountain Milkvetch (*Astragalus amphioxys* var. *musimonum*)**

36
37 ESA Listing Status: Not Listed
38 BLM Listing Status: Listed as Sensitive
39 State Listing Status: Not Listed
40 Rarity: Nevada State Rank S2; USFWS Species of Concern
41

42 The Sheep Mountain milkvetch is a perennial herb that is restricted to the foothills of the
43 Sheep Mountains in southern Nevada. It occurs on carbonate alluvial gravels, particularly along
44 drainages, roadsides, and in other microsites with enhanced runoff, at elevations between 4,400
45 and 6,000 ft.
46

1 The Sheep Mountain milkvetch may occur in the affected area of the following SEZs:
2 Delamar Valley and Dry Lake.

3
4
5 **Silverleaf Sunray (*Enceliopsis argophylla*)**

6
7 ESA Listing Status: Not Listed
8 BLM Listing Status: Listed as Sensitive (Nevada)
9 State Listing Status: Not Listed
10 Rarity: Nevada State Rank S1

11
12 The silverleaf sunray is a perennial forb that is primarily known from southern Nevada.
13 This species occurs in dry, open, relatively barren areas on gypsum badlands, volcanic gravels,
14 or loose sands at elevations between 1,200 and 2,400 ft (365 and 730 m). The silverleaf sunray
15 may occur in the affected area of the Dry Lake SEZ.

16
17
18 **Sneed's Pincushion Cactus (*Escobaria sneedii* var. *sneedii*)**

19
20 ESA Listing Status: Endangered
21 BLM Listing Status: Not Listed
22 State Listing Status: Endangered in New Mexico
23 Rarity: New Mexico State Rank S2

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

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

1 The Sneed's pincushion cactus may occur in the affected area of the following SEZs:
2 Afton and Mason Draw.

3
4
5 **Spring-Loving Centaury (*Centaurium namophilum*)**

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

22
23 The spring-loving centaury was federally listed as threatened on May 20, 1985
24 (USFWS 1985). Critical habitat has been designated in the Ash Meadows area of Nye County,
25 Nevada.

26
27 The spring-loving centaury may occur in the affected area of the Amargosa Valley SEZ.

28
29
30 **Stephens' Beardtongue (*Penstemon stephensii*)**

31
32 ESA Listing Status: Not Listed
33 BLM Listing Status: Listed as Sensitive (California)
34 State Listing Status: Not Listed
35 Rarity: California State Rank S2; USFWS Species of Concern

36
37 Stephens' beardtongue is a shrubby perennial dicot in the Plantaginaceae family that is
38 native and endemic to California, where it occurs in the mountains of the Mojave Desert in Inyo
39 and San Bernardino Counties. The plant consists of several erect, smooth stems that are 12- to
40 60-in. (30- to 150-cm) tall. The stems bear widely spaced, thin, opposite leaves that are oval,
41 with wide triangular tips and sharply serrated edges. Toward the ends of the stems, these leaf
42 pairs become fused at their bases and form a disc around the stem. Stephens' beardtongue
43 blooms from April to July with wide-mouthed tubular flowers in shades of pink or purple in a
44 spike-like inflorescence at the end of the stem. The surfaces of the petals and other flower parts
45 are minutely glandular-hairy. The fruit is an oval capsule that contains numerous seeds
46 (California Native Plant Society 2010; Nature Serve 2010).

1 Stephens' beardtongue grows in rocky (usually carbonate) areas, including rock crevices,
2 limestone cliffs, rocky slopes, and washes with sandy conglomerate. It occurs predominantly
3 within creosote bush scrub and pinyon-juniper woodland communities, occasionally within
4 shadscale scrub or sagebrush scrub at elevations between 3,900 and 6,550 ft (1,200 and 2,000 m)
5 (California Native Plant Society 2010; Nature Serve 2010).
6

7 There are no data available from which meaningful inferences can be made regarding
8 population trends or changes in the distribution of Stephens' beardtongue in California, but
9 because it is endemic to the mountains of the Mojave Desert and is threatened by limestone
10 mining, conservation of this species is needed to ensure it remains a part of California's flora.
11 Other 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 (California Native Plant Society 2010; Nature Serve 2010).
14

15 Stephens' beardtongue could occur in the affected areas of the Pisgah SEZ.
16
17

18 **Sticky Buckwheat (*Eriogonum viscidulum*)**

19

20 ESA Listing Status: Not Listed
21 BLM Listing Status: Not Listed
22 State Listing Status: Protected in Nevada
23 Rarity: Nevada State Rank S2; USFWS Species of Concern
24

25 The sticky buckwheat is a perennial forb that is known only from Clark County, Nevada,
26 and Mohave County, Arizona. This species is dependent on sand dune communities, where it
27 occurs on deep, loose, sandy soils in washes, flats, roadsides, steep aeolian slopes, and stabilized
28 dunes at elevations between 1,200 and 2,200 ft (365 and 670 m). The sticky buckwheat may
29 occur in the affected area of the Dry Lake SEZ.
30
31

32 **Straw-Top Cholla (*Opuntia echinocarpa*)**

33

34 ESA Listing Status: Not Listed
35 BLM Listing Status: Not Listed
36 State Listing Status: Arizona Salvage Restricted (SR)
37 Rarity: None
38

39 Straw-top cholla is a shrubby, perennial, dicot cactus in the Cactaceae family that is
40 native to Arizona but also occurs in California, Nevada, and Utah. The plant is a large, erect to
41 spreading, densely branched, spiny cactus in the form of a shrub or tree that is 1.6- to 6.6-ft (0.5-
42 to 2-m) tall. The trunk and branches are round, segmented, and green or gray-green in color. The
43 stem segments are firmly attached, except for the terminal segments, which are sometimes easily
44 detached and can function as vegetative propagules. The entire plant is armed with clusters of
45 stiff spines arising from wart-like oval tubercles. Each tubercle may bear up to 20 spines. The
46 numerous spines interlace and sometimes obscure the stem. Minute, detachable bristles

1 (glochids) and fine, yellowish wool form tufts at the base of the spines. Straw-top cholla blooms
2 from March to June with clusters of flowers on the older branches. The flowers are light green to
3 yellow-green, sometimes suffused with maroon or rose. The fruit is a densely spiny, globose, dry
4 berry that is tan when mature and contains numerous pale yellow, angular seeds. *Opuntia*
5 *echinocarpa* is a synonym for *Cylindropuntia echinocarpa* (AZGFD 2010; *Flora of North*
6 *America* 2010; Nature Serve 2010).

7
8 Straw-top cholla grows on sandy, loamy, alluvial to gravelly substrates in the Mojave and
9 Sonoran Deserts, in creosote-bush/white bur-sage, blackbrush, and saltbush scrub, desert
10 grasslands, juniper and oak-juniper woodlands, flats, bajadas, and canyons at elevations of 164 to
11 5,575 ft (50 to 1,700 m) (AZGFD 2010; *Flora of North America* 2010; Nature Serve 2010).

12
13 There are no data available from which meaningful inferences can be made regarding
14 population trends or changes in the distribution of straw-top cholla in Arizona, but conservation
15 of this species is needed to ensure it remains a part of Arizona's flora. Major threats are
16 associated with habitat disturbance or destruction, timber harvest, recreation, fire, grazing,
17 effects of small population size, woody plant encroachment, exotic species invasion, succession,
18 global climate change, and pollution.

19
20 Straw-top cholla could occur in the affected areas of the following SEZs: Brenda, Bullard
21 Wash, and Gillespie.

22 23 24 **Threecorner Milkvetch (*Astragalus geyeri* var. *triquetrus*)**

25
26 ESA Listing Status: Not Listed
27 BLM Listing Status: Not Listed
28 State Listing Status: Protected in Nevada
29 Rarity: Nevada State Rank S2; USFWS Species of Concern

30
31 The threecorner milkvetch is a perennial forb that is known only from Clark County,
32 Nevada, and Mohave County, Arizona. This species inhabits open, deep, sandy soils; desert
33 washes; or dunes, generally stabilized by vegetation and/or a gravel veneer at elevations between
34 1,500 and 2,500 ft (455 and 760 m). The Threecorner milkvetch may occur in the affected area
35 of the following SEZs: Dry Lake and East Mormon Mountain.

36 37 38 **Tiehm Blazingstar (*Mentzelia tiehmi*)**

39
40 ESA Listing Status: Not Listed
41 BLM Listing Status: Listed as Sensitive (Nevada)
42 State Listing Status: Not Listed
43 Rarity: Nevada State Rank S1

44
45 The Tiehm blazingstar is a perennial herb endemic to Nevada. It occurs on hilltops and
46 sparsely vegetated, white, calcareous knolls and bluffs with other scattered perennial plant

1 species. The Tiehm blazingstar may occur in the affected area of the following SEZs: Delamar
2 Valley and Dry Lake Valley North.

3
4
5 **Tonopah Pincushion (*Sclerocactus nyensis*)**

6
7 ESA Listing Status: Not Listed
8 BLM Listing Status: Listed as Sensitive (Nevada)
9 State Listing Status: Protected in Nevada
10 Rarity: Nevada State Rank S1

11
12 The Tonopah pincushion cactus is endemic to Esmeralda and Nye Counties, Nevada.
13 This species occurs on dry rocky soils and low outcrops on gentle slopes in open areas or under
14 shrubs in the upper salt desert and lower sagebrush zones. The Tonopah pincushion may occur in
15 the affected area of the Gold Point SEZ.

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

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

24
25 The Toquima milkvetch is a perennial herb that is endemic to Nevada on sandy to
26 gravelly slopes or flats at elevations between 6,500 and 7,500 ft (1,980 and 2,280 m). The
27 Toquima milkvetch may occur in the affected area of the Millers SEZ.

28
29
30 **Tumamoc Globeberry (*Tumamoca macdougalii*)**

31
32 ESA Listing Status: Not Listed
33 BLM Listing Status: Listed as Sensitive (Arizona)
34 State Listing Status: Arizona Salvage Restricted (SR)
35 Rarity: None

36
37 Tumamoc globeberry is a delicate perennial dicot vine in the Cucurbitaceae
38 (squash/gourd) family that is native and endemic to southern Arizona and northern Mexico. The
39 plant is dormant during the winter and early spring. In late spring, slender, smooth, herbaceous
40 stems arise from succulent tuberous roots and climb, by means of tendrils, up to 10 ft (3 m) into
41 nearby shrubs and trees. Growth is stimulated by spring and summer rains. The annual stems
42 bear thin, alternate, three-lobed leaves with clasping tendrils at the leaf bases. Each leaf lobe is
43 further divided into several irregular lobes. Tumamoc globeberry blooms from July to August
44 and fruits from August to September. The plant has separate male and female flowers
45 (monoecious) that are star-shaped, are white to greenish-yellow, and arise from leaf bases. The

1 fruit is a small, globose, bright red, several-seeded berry that is relished by wildlife
2 (AZGFD 2010; Nature Serve 2010).

3
4 Tumamoc globeberry grows in desert scrub and xeric situations, in shady areas of nurse
5 plants along gullies and washes, in rocky to gravelly, sandy, silty, and clayey soils, at elevations
6 of 1,476 to 2,608 ft (450 to 795 m) (AZGFD 2010; Nature Serve 2010).

7
8 There are no data available from which meaningful inferences can be made regarding
9 population trends or changes in the distribution of Tumamoc globeberry in Arizona, but because
10 this species is endemic to Arizona, conservation of this species is needed to ensure it remains a
11 part of Arizona's flora. Major threats are associated with habitat disturbance or destruction,
12 recreation, effects of small population size, exotic species invasion, succession, global climate
13 change, and pollution.

14
15 Tumamoc globeberry could occur in the affected areas of the Gillespie SEZ.

16 17 18 **Villard Pincushion Cactus (*Escobaria villardii*)**

19
20 ESA Listing Status: Not Listed

21 BLM Listing Status: Listed as Sensitive (New Mexico)

22 State Listing Status: Endangered in New Mexico

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

24
25 The Villard pincushion cactus occurs in the northern Franklin and Sacramento Mountains
26 in Otero and Doña Ana Counties, New Mexico. Its characteristic habitat is nearly flat benches
27 above vertical north-facing limestone cliffs in Chihuahuan Desert and black grama grassland. Its
28 substrate is well-developed, loamy soil. Its elevation ranges from 4,500 to 6,500 ft (1,370 to
29 2,000 m) (NatureServe 2010; NMRPTC 2010).

30
31 Villard pincushion cactus is a spiny perennial succulent. Pale yellowish, pinkish, or white
32 flowers appear in April. Fruit is elongate and green to reddish. Seeds are brown, pitted, and
33 roughly 0.04 in (1-mm) long (NatureServe 2010; NMRPTC 2010).

34
35 Villard pincushion cactus is common within its area of distribution. Its locations are
36 nearly inaccessible, which severely limits the threat of collection or grazing. Accidental wildfires
37 in grassland habitat pose a threat. It is listed as sensitive by the BLM, listed as endangered by the
38 state of New Mexico, is a USFWS species of concern, and is ranked S2 in New Mexico. This
39 species may occur within the affected regions of the following SEZs: Afton, Mason Draw, and
40 Red Sands (NatureServe 2010; NMRPTC 2010).

41 42 43 **White Bearpoppy (*Arctomecon merriamii*)**

44
45 ESA Listing Status: Not Listed

46 BLM Listing Status: Listed as Sensitive (Nevada)

1 State Listing Status: Not Listed

2 Rarity: Not Listed

3
4 The white bearpoppy is a perennial herb that is endemic to the desert regions of
5 southeastern California and southern Nevada. It occurs in barren, gravelly areas, rocky slopes,
6 and limestone outcrops at elevations between 2,000 and 5,900 ft (600 and 1,800 m). The white
7 bearpoppy may occur in the affected area of the following SEZs: Amargosa Valley, Delamar
8 Valley, Dry Lake, and East Mormon Mountain.

9
10
11 **White River Cat's-Eye (*Cryptantha welshii*)**

12
13 ESA Listing Status: Not Listed

14 BLM Listing Status: Listed as Sensitive

15 State Listing Status: Not Listed

16 Rarity: USFWS Species of Concern

17
18 The White River cat's-eye is a perennial herb endemic to southern Nevada. It occurs on
19 dry, open, sparsely vegetated outcrops on carbonate substrates at elevations between 4,500 and
20 6,600 ft (1,370 and 2,010 m). The White River cat's-eye may occur in the affected area of the
21 following SEZs: Delamar Valley and Dry Valley North.

22
23
24 **White-Bracted Spineflower (*Chorizanthe xanti* var. *leucotheca*)**

25
26 ESA Listing Status: Not Listed

27 BLM Listing Status: Listed as Sensitive (California)

28 State Listing Status: Not Listed

29 Rarity: California State Rank S2

30
31 White-bracted spineflower is an herbaceous annual dicot in the Polygonaceae family that
32 is native and endemic to California. The plant consists of an erect stem that is 2- to 10-in. (5- to
33 25-cm) tall. All of the herbage is reddish and covered with hairs. The leaves are mostly basal,
34 oblong, and slightly hairy above and densely hairy below. White-bracted spineflower blooms
35 from April to June with an openly branched, spreading, inflorescence that consists of woolly
36 clusters of rose to red flowers. Each flower is surrounded by six reddish, densely white-hairy
37 leaf-like bracts tipped with hooked bristles (awns). The fruit is a smooth, brown achene enclosed
38 by the persistent flower base (*Flora of North America* 2010; Nature Serve 2010).

39
40 White-bracted spineflower is known only from the San Bernardino and San Jacinto
41 Mountains and grows in Mojave Desert scrub communities, pinyon-juniper woodlands, and pine-
42 oak woodlands on sandy or gravelly soils at elevations below 3,925 ft (1,200 m) (California
43 Native Plant Society 2010; *Flora of North America* 2010; Nature Serve 2010).

44
45 There are no data available from which meaningful inferences can be made regarding
46 population trends or changes in the distribution of white-bracted spineflower in California, but

1 because this plant is endemic to California, conservation of this species is needed to ensure it
2 remains a part of the state's flora. Major threats are associated with habitat disturbance or
3 destruction, timber harvest, recreation, fire, grazing, effects of small population size, woody
4 plant encroachment, exotic species invasion, succession, global climate change, and pollution
5 (Nature Serve 2010).

6
7 White-bracted spineflower could occur in the affected areas of the Pisgah SEZ.
8
9

10 **White-Margined Beardtongue (*Penstemon albomarginatus*)**

11
12 ESA Listing Status: Not Listed

13 BLM Listing Status: Listed as Sensitive (California)

14 State Listing Status: Not Listed

15 Rarity: California State Rank S1; Nevada State Rank S2; USFWS Species of Concern
16

17 White-margined beardtongue is a herbaceous perennial dicot in the Plantaginaceae family
18 that is native to California but also occurs in Arizona and Nevada. The plant consists of several
19 erect, smooth stems that are 6- to 14-in. (15- to 35-cm) tall and arise from a long taproot whose
20 crown is buried in the sand. The stems bear widely spaced, opposite leaves that are pale green,
21 oblong-pointed, weakly toothed, and wavy edged and have a distinct white margin. Near the
22 bases of the stems, the leaves tend to be small and scale-like. White-margined beardtongue
23 blooms from March to May with tubular flowers in shades of pink, lavender, or white, with
24 darker purple veins and spots, and with yellow hairs on the inside of the lower petals. The
25 flowers are borne in spike-like inflorescences at the ends of the stems. The fruit is an oval
26 capsule that contains numerous irregularly angled seeds (*Flora of North America* 2010; Nature
27 Serve 2010).
28

29 White-margined beardtongue grows in loose, wind-blown, desert, sand dune habitats and
30 Mojave Desert scrub communities at elevations below 3,600 ft (1,100 m) (California Native
31 Plant Society 2010; Nature Serve 2010).
32

33 There are no data available from which meaningful inferences can be made regarding
34 population trends or changes in the distribution of white-margined beardtongue in California, but
35 conservation of this species is needed to ensure it remains a part of California's flora. Major
36 threats are associated with habitat disturbance or destruction, recreation, fire, grazing, effects of
37 small population size, exotic species invasion, succession, global climate change, and pollution.
38

39 White-margined beardtongue could occur in the affected area of the following SEZs:
40 Amargosa Valley, Iron Mountain, Pisgah, and Riverside East.
41
42

43 **Wright's Marsh Thistle (*Cirsium wrightii*)**

44
45 ESA Listing Status: Not Listed

46 BLM Listing Status: Listed as Sensitive (New Mexico)

1 State Listing Status: Endangered in New Mexico
2 Rarity: New Mexico State Rank S2; USFWS Species of Concern
3

4 Wright's marsh thistle occurs in south central New Mexico, western Texas, and
5 Chihuahua, Mexico. In New Mexico, it is found in Eddy, Chaves, Guadalupe, Otero, Sierra, and
6 Socorro Counties. Within Socorro County, it occurs in the Sacramento Mountains, lower Pecos
7 River Valley, and Alamosa Springs. Wright's marsh thistle inhabits wet, alkaline soils in spring
8 seeps and marshy areas of streams and ponds of otherwise arid or semiarid areas. Its elevation
9 ranges from 3,450 to 8,500 ft (1,130 to 2,600 m) (NatureServe 2010; NMRPTC 2010).
10

11 Wright's marsh thistle is a biennial or perennial succulent forb. It flowers from March to
12 October and sets seeds only once before dying. A few hybrids between *C. wrightii* and
13 *C. vinaceum* have been observed in the Sacramento Mountains (NatureServe 2010;
14 NMRPTC 2010).
15

16 Known populations of Wright's marsh thistle are few and widely disjunct. Populations in
17 Roswell, Chavez County, Lake Valley, Sierra County, and San Bernardino Cienega in Arizona
18 have been extirpated. The desert springs and cienegas that this species inhabits are rare and
19 susceptible to drying up or being diverted. Insects introduced as a biological control for nearby
20 weedy thistles may pose a grave threat for nonweedy thistle species like Wright's marsh thistle.
21 The impacts of fire and livestock grazing on this species have not been studied. On
22 September 10, 2009, the USFWS found that a petition to list this species as endangered or
23 threatened under the ESA may be warranted, and it began a 12-month review of the species. No
24 ESA listing has yet been issued, but Wright's marsh thistle is listed as sensitive by the BLM,
25 listed as endangered by the state of New Mexico, is a USFWS species of concern, and is ranked
26 S2 in New Mexico. It may occur within the affected regions of the Red Sands SEZ
27 (NatureServe 2010; MRPTC 2010).
28
29

30 **Yellow Two-Tone Beardtongue (*Penstemon bicolor* ssp. *bicolor*)**

31
32 ESA Listing Status: Not Listed
33 BLM Listing Status: Listed as Sensitive (Nevada)
34 State Listing Status: Not Listed
35 Rarity: Nevada State Rank S2; USFWS Species of Concern
36

37 The yellow two-tone beardtongue is endemic to Clark County, Nevada, on mostly BLM
38 lands in the vicinity of Las Vegas. It occurs on calcerous or carbonate soils in washes, roadsides,
39 rock crevices, or outcrops at elevations between 2,500 and 5,500 ft. The yellow two-tone
40 beardtongue may occur in the affected area of the Dry Lake SEZ.
41
42
43

1 **J.6.1.2 Invertebrates**
2
3

4 **Amargosa Naucorid (*Pelocoris shoshone amargosa*)**
5

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

10
11 The Amargosa naucorid is endemic to the Amargosa Valley in Inyo County, California,
12 and Nye County, Nevada. It inhabits spring-fed aquatic habitats, where it prefers quiet waters
13 among vegetation. The Amargosa naucorid may occur in the affected area of the Amargosa
14 Valley SEZ.
15

16
17 **Amargosa Tryonia (*Tryonia variegata*)**
18

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

24 The Amargosa tryonia is endemic to the Amargosa Valley in Nye County, Nevada. It
25 inhabits spring-fed aquatic habitats where there is an abundance of detritus or aquatic
26 macrophytes. The Amargosa tryonia may occur in the affected area of the Amargosa Valley
27 SEZ.
28
29

30 **Anthony Blister Beetle (*Lytta mirifica*)**
31

32 ESA Listing Status: Not Listed
33 BLM Listing Status: Listed as Sensitive
34 State Listing Status: New Mexico Species of Concern
35 Rarity: USFWS Species of Concern
36

37 The Anthony blister beetle occurs in south central New Mexico, which includes Sierra,
38 Otero, and Doña Ana Counties, although finer-scale distributions have not been specified. It is a
39 terrestrial species that inhabits the flowers and foliage of various plants and agricultural areas,
40 where it may be a pest of certain crops, including tomatoes, potatoes, beets, and clover
41 (NMDGF 2010).
42

43 Blister beetles are both plant feeders and parasites, eating grasses and forbs as well as
44 deriving nutrients from living hosts. Larvae parasitize bees by climbing onto flowers and
45 attaching themselves to bees that visit the flowers. The bees carry the larvae to their nest, where
46 they attack bee eggs. They also feed on grasshopper eggs. Adult beetles are plant feeders and can

1 completely defoliate plants. Blister beetles reproduce by laying eggs. They undergo
2 hypermetamorphosis and appear in several forms throughout their life (NMDGF 2010).

3
4 The Anthony blister beetle is affected by the extirpation of blacktailed and Gunnison
5 prairie dogs and other large, burrowing rodents. It was listed in the *Federal Register* as a
6 Category 2 species for consideration to be listed as a threatened or an endangered species on
7 November 15, 1994. In 1996, the USFWS changed the listing status of federal candidate species
8 to eliminate category designations, and it no longer considered Category 2 species like the beetle
9 as candidate species. It was classified as a species of concern in March of 1996. Currently, it is
10 listed as sensitive by the BLM and is a USFWS and New Mexico species of concern. It may
11 occur within the affected regions of the Afton SEZ (NMDGF 2009; NMSU 2010).

12
13
14 **Ash Meadows Naucorid (*Ambrysus amargosus*)**

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

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

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

32
33 The Ash Meadows naucorid was listed as federally threatened on May 20, 1985
34 (USFWS 1985). Critical habitat has been designated for this species in the Ash Meadows
35 National Wildlife Refuge. Threats to the continued existence of the species have included habitat
36 alteration and fragmentation from agriculture, stream channelization, peat mining, and water
37 diversion.

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

40
41
42 **Ash Meadows Pebblesnail (*Pyrgulopsis erythropoma*)**

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

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

3
4 The Ash Meadows pebblesnail is endemic to the Ash Meadows National Wildlife
5 Refuge, where it is known from only six spring-fed systems. The Ash Meadows pebblesnail may
6 occur in the affected area of the Amargosa Valley SEZ.
7
8

9 **Big Dune Miloderes Weevil (*Miloderes* sp. 1)**

10
11 ESA Listing Status: Not Listed
12 BLM Listing Status: Listed as Sensitive
13 State Listing Status: Not Listed
14 Rarity: Nevada State Rank S1
15

16 The Big Dune miloderes weevil is endemic to the Big Dune area, approximately 3 mi
17 (5 km) east of the Amargosa Valley SEZ. The Big Dune miloderes weevil may occur in the
18 affected area of the Amargosa Valley SEZ.
19
20

21 **Crescent Dunes Aegialian Scarab (*Aegialia crescenta*)**

22
23 ESA Listing Status: Under Review
24 BLM Listing Status: Listed as Sensitive
25 State Listing Status: Not Listed
26 Rarity: Nevada State Rank S1
27

28 The Crescent Dunes aegialian scarab is a sand dune obligates species primarily restricted
29 to the Crescent Dunes, approximately 6 mi (10 km) east of the Millers SEZ. The Crescent Dunes
30 aegialian scarab may occur in the affected area of the Millers SEZ.
31
32

33 **Crescent Dunes Serican Scarab (*Serica ammomenisco*)**

34
35 ESA Listing Status: Under Review
36 BLM Listing Status: Listed as Sensitive
37 State Listing Status: Not Listed
38 Rarity: Nevada State Rank S1
39

40 The Crescent Dunes serican scarab is a sand dune obligates species primarily restricted to
41 the Crescent Dunes, approximately 6 mi (10 km) east of the Millers SEZ. The Crescent Dunes
42 serican scarab may occur in the affected area of the Millers SEZ.
43
44
45

1 **Crystal Springsnail (*Pyrgulopsis crystalis*)**

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 crystal springsnail is a freshwater mollusk endemic to the Ash Meadows region of
9 Nye County, Nevada, where it is known only from Crystal Spring. Within this spring, this
10 species is found clinging to the walls of deep orifices. The Crystal springsnail may occur in the
11 affected area of the Amargosa Valley SEZ.
12
13

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

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 distal gland springsnail is a freshwater mollusk endemic to the Ash Meadows region
22 of Nye County, Nevada. It is found at four small, spring-fed habitats within 6 mi (10 km) from
23 each other. Within these habitats, the species occurs on soft substrates in warmer waters. The
24 distal gland springsnail may occur in the affected area of the Amargosa Valley SEZ.
25
26

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

28
29 ESA Listing Status: Under Review
30 BLM Listing Status: Not Listed
31 State Listing Status: Not Listed
32 Rarity: Nevada State Rank S1
33

34 The elongate gland springsnail is a freshwater mollusk endemic to the Ash Meadows
35 region of Nye County, Nevada. It is found only in the spring at Clay Pits. Within these habitats,
36 the species occurs on soft substrates in thermal waters near the spring outflow. The elongate
37 gland springsnail may occur in the affected area of the Amargosa Valley SEZ.
38
39

40 **Fairbanks Springsnail (*Pyrgulopsis fairbanksensis*)**

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 Fairbanks springsnail is a freshwater mollusk endemic to the Ash Meadows region of
2 Nye County, Nevada. It is found only in Fairbanks Spring. Within these habitats, the species
3 occurs on soft substrates in thermal waters. The Fairbanks springsnail may occur in the affected
4 area of the Amargosa Valley SEZ.

5
6
7 **Giuliani's Dune Scarab Beetle (*Pseudocotalpa giulianii*)**

8
9 ESA Listing Status: Under Review
10 BLM Listing Status: Listed as Sensitive
11 State Listing Status: Not Listed
12 Rarity: Nevada State Rank S1
13

14 The Giuliani's dune scarab beetle is an insect that is endemic to the Big Dune and Lava
15 Dune in Nye County, Nevada. Within these habitats, the species primarily lives beneath the sand
16 surface; adults are active above ground for short periods near sunset. Adults breed on creosote
17 bushes and on sand surfaces; larvae develop beneath the sand surface, where they apparently
18 feed on plant roots. The Giuliani's dune scarab beetle may occur in the affected area of the
19 following Amargosa Valley SEZ.

20
21
22 **Grated Tryonia (*Tryonia clathrata*)**

23
24 ESA Listing Status: Under Review
25 BLM Listing Status: Listed as Sensitive
26 State Listing Status: Not Listed
27 Rarity: Nevada State Rank S2
28

29 The grated tryonia is a freshwater mollusk known from the Muddy River system in
30 southern Nevada. The grated tryonia may occur in the affected area of the following SEZs:
31 Delamar Valley and Dry Lake.
32

33
34 **Great Basin Silverspot Butterfly (*Speyeria nokomis nokomis*)**

35
36 ESA Listing Status: Not Listed
37 BLM Listing Status: Listed as Sensitive (Colorado)
38 State Listing Status: Not Listed
39 Rarity: Colorado State Rank S1; New Mexico State Rank S1
40

41 The Great Basin silverspot butterfly is known from northeastern Arizona, western
42 Colorado, northern New Mexico, and eastern Utah. Within Colorado, this species occurs in
43 isolated populations in streamside meadows and open seepage areas associated with violets. The
44 Great Basin silverspot butterfly may occur in the affected area of the following SEZs: Antonito
45 Southeast and Los Mogotes.
46
47

1 **Hubbs Pyrg (*Pyrgulopsis hubbsi*)**

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 Hubbs pyrg is known only from Hiko Spring and Crystal Spring in the Pahrnat
9 Valley of Lincoln County, Nevada. The species could possibly be extirpated at Hiko Spring. The
10 Hubbs pyrg may occur in the affected area of the Delamar Valley SEZ.
11

12
13 **Large Aegialian Scarab Beetle (*Aegialia magnifica*)**

14
15 ESA Listing Status: Under Review
16 BLM Listing Status: Listed as Sensitive
17 State Listing Status: Not Listed
18 Rarity: Nevada State Rank S1
19

20 The large aegialian scarab beetle is an insect that is endemic to the Big Dune and Lava
21 Dune in Nye County, Nevada, where the species is known to be dependent on deep sand habitats.
22 Little information is known on the ecology of this species. The large aegialian scarab beetle may
23 occur in the affected area of the Amargosa Valley SEZ.
24

25
26 **Median Gland Springsnail (*Pyrgulopsis pisteri*)**

27
28 ESA Listing Status: Under Review
29 BLM Listing Status: Not Listed
30 State Listing Status: Not Listed
31 Rarity: Nevada State Rank S1
32

33 The median gland springsnail is a freshwater mollusk endemic to the Ash Meadows
34 region of Nye County, Nevada. It is found in only three spring-fed habitats, all within 1 mi
35 (1.6 km) of each other. Within these habitats, the species is found in the outflows of the springs
36 on travertine, aquatic macrophytes or soft substrates. The median gland springsnail may occur in
37 the affected area of the Amargosa Valley SEZ.
38

39
40 **Minute Tryonia (*Tryonia ericae*)**

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 minute tryonia is a freshwater mollusk endemic to the Ash Meadows region of Nye
2 County, Nevada. It is known from fewer than four spring-fed habitats globally. Within these
3 habitats, the species is found on macrophytes in thermal outflow waters. The minute tryonia may
4 occur in the affected area of the Amargosa Valley SEZ.
5
6

7 **Moapa Pebblesnail (*Pyrgulopsis avernalis*)**
8

9 ESA Listing Status: Under Review
10 BLM Listing Status: Not Listed
11 State Listing Status: Not Listed
12 Rarity: Nevada State Rank S1
13

14 The Moapa pebblesnail is an aquatic snail restricted to the Moapa Springs in Clark
15 County, Nevada. The Moapa pebblesnail may occur in the affected area of the Dry Lake SEZ.
16
17

18 **Moapa Valley Pebblesnail (*Pyrgulopsis carinifera*)**
19

20 ESA Listing Status: Under Review
21 BLM Listing Status: Not Listed
22 State Listing Status: Not Listed
23 Rarity: Nevada State Rank S1
24

25 The Moapa Valley pebblesnail is a freshwater mollusk restricted to spring-fed habitats in
26 the Moapa Valley of southern Nevada. The Moapa Valley pebblesnail may occur in the affected
27 area of the Dry Lake SEZ.
28
29

30 **Moapa Warm Spring Riffle Beetle (*Stenelmis moapa*)**
31

32 ESA Listing Status: Under Review
33 BLM Listing Status: Listed as Sensitive
34 State Listing Status: Not Listed
35 Rarity: Nevada State Rank S1
36

37 The Moapa Warm Springs riffle beetle is an aquatic insect restricted to the Warm Springs
38 Area of Clark County, Nevada. It occurs in swift, shallow waters of freshwater outlet springs on
39 gravel substrates. It is often found near vegetation and bare tree roots. The Moapa Warm Spring
40 riffle beetle may occur in the affected area of the Dry Lake SEZ.
41
42

43 **Mojave Gypsum Bee (*Andrena balsamorhizae*)**
44

45 ESA Listing Status: Not Listed
46 BLM Listing Status: Listed as Sensitive

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

4 The Mojave gypsum bee is an insect that is endemic to Nevada, where the species is
5 restricted to gypsum soils associated with habitats of its single larval host plant, silverleaf sunray.
6 Such habitats include warm desert shrub communities; dry, open, relatively barren areas on
7 gypsum badlands; and volcanic gravels. The Mojave gypsum bee may occur in the affected area
8 of the following SEZs: Dry Lake and East Mormon Mountain.
9

10
11 **Mojave Poppy Bee (*Perdita meconis*)**
12

13 ESA Listing Status: Not Listed
14 BLM Listing Status: Listed as Sensitive
15 State Listing Status: Not Listed
16 Rarity: Nevada State Rank S2
17

18 The Mojave poppy bee is an insect known only from Clark County, Nevada, where it is
19 dependent on poppy plants (*Arctemocon* spp.). Such habitats include roadsides, washes, and
20 barren desert areas. The Mojave poppy bee may occur in the affected area of the following SEZs:
21 Delamar Valley, Dry Lake, and East Mormon Mountain.
22

23
24 **Oasis Valley Springsnail (*Pyrgulopsis micrococcus*)**
25

26 ESA Listing Status: Under Review
27 BLM Listing Status: Listed as Sensitive
28 State Listing Status: Not Listed
29 Rarity: Nevada State Rank S2
30

31 The Oasis Valley springsnail is a freshwater mollusk endemic to the Amargosa River
32 drainage and the Death, Panamint, and Saline Valleys in Inyo County, California, and Nye
33 County, Nevada. The species occurs in small springs and stream outflows, where it is typically
34 found on stone, travertine, and detritus. The Oasis Valley springsnail may occur in the affected
35 area of the Amargosa Valley SEZ.
36

37
38 **Pahranagat Naucorid (*Pelocoris shoshone shoshone*)**
39

40 ESA Listing Status: Not Listed
41 BLM Listing Status: Listed as Sensitive
42 State Listing Status: Not Listed
43 Rarity: Nevada State Rank S1
44

45 The Pahranagat naucorid is an aquatic insect known to occur only in the Muddy and
46 White River Basins in southern Nevada. It inhabits warm, quiet waters of spring-fed systems.

1 The Pahranaagat naucorid may occur in the affected area of the following SEZs: Delamar Valley
2 and Dry Lake.

3
4
5 **Pahranaagat Pebblesnail (*Pyrgulopsis merriami*)**

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 Pahranaagat pebblesnail is a freshwater mollusk restricted to spring-fed habitats in the
13 White River system of southern Nevada. The Pahranaagat pebblesnail may occur in the affected
14 area of the Delamar Valley SEZ.

15
16
17 **Point of Rocks Tryonia (*Tryonia elata*)**

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 Point of Rocks tryonia is a freshwater mollusk endemic to the Ash Meadows region
25 of Nye County, Nevada. It is found at only two localities at Point of Rocks Springs. Within these
26 habitats, the species is found on travertine mounds near spring outflows. The Point of Rocks
27 tryonia may occur in the affected area of the Amargosa Valley SEZ.

28
29
30 **Sporting Goods Tryonia (*Tryonia angulata*)**

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 sporting goods tryonia is a freshwater mollusk endemic to the Ash Meadows region
38 of Nye County, Nevada, where it is known from only three springs. Within these habitats, the
39 species is found on soft substrates in thermal waters. The Sporting Goods tryonia may occur in
40 the affected area of the Amargosa Valley SEZ.

41
42
43 **Spring Mountains Springsnail (*Pyrgulopsis deaconi*)**

44
45 ESA Listing Status: Not Listed
46 BLM Listing Status: Listed as Sensitive

1 State Listing Status: Not Listed
2 Rarity: New Mexico State Rank S1; Nevada State Rank S1

3
4 The Spring Mountains springsnail is endemic to freshwater springs of the Spring
5 Mountains in southern Nevada. The Spring Mountains springsnail may occur in the affected area
6 of the Dry Lake SEZ.

7
8
9 **J.6.1.3 Fish**

10
11 **Ash Meadows Amargosa Pupfish (*Cyprinodon nevadensis mionectes*)**

12
13 ESA Listing Status: Endangered
14 BLM Listing Status: Not Listed
15 State Listing Status: Protected in Nevada
16 Rarity: Nevada State Rank S2

17
18 The Ash Meadows Amargosa pupfish is found in 10 spring areas within the Ash
19 Meadows of Nye County, Nevada. Most of these springs are on public land within the Ash
20 Meadows National Wildlife Refuge (USFWS 2010a). Typical habitat consists of ephemeral
21 pools, headwater spring pools, and outfall drainage and marshes that connect to the spring
22 system. This species feeds mainly on blue-green algae and small invertebrates. It breeds
23 throughout the year, with peaks in spring and early summer (Nature Serve 2010).

24
25 The Ash Meadows Amargosa pupfish was listed as federally endangered on
26 September 28, 1983 (USFWS 1983). Critical habitat was also designated on this date within the
27 Ash Meadows National Wildlife Refuge.

28
29 Threats to the species include competition and predation from introduced non-native
30 species, channelization, water impoundment and diversion, groundwater pumping, pollution, and
31 elimination of riparian vegetation (Nature Serve 2010).

32
33 The Ash Meadows Amargosa pupfish may occur in the affected area of the Amargosa
34 Valley SEZ.

35
36
37 **Ash Meadows Speckled Dace (*Rhinichthys osculus nevadensis*)**

38
39 ESA Listing Status: Endangered
40 BLM Listing Status: Not Listed
41 State Listing Status: Protected in Nevada
42 Rarity: Nevada State Rank S1

43
44 The Ash Meadows speckled dace, also known as the Nevada speckled dace, is endemic to
45 spring systems and aquatic habitats formed by spring waters at Ash Meadows, in Nye County,
46 Nevada. Although formerly more widespread in the area, the species is currently restricted to

1 Jackrabbit Spring, Big Spring, the two westernmost springs of the Bradford Springs group, and
2 the outflows of these springs. This dace is known to occur in headwater spring pools, spring
3 outflow creeks (including areas of the creek up to a mile or more from their spring sources), and
4 marshes formed by spring flows. The subspecies also occurs in irrigation ditches and canals that
5 utilize the spring flows for irrigation. The Ash Meadows speckled dace appears to be rather
6 general in its habitat requirements, utilizing areas with a rather fast stream current as well as
7 quiet spring pools (Nature Serve 2010).

8
9 Speckled dace are typically omnivores. They often feed on bottom materials, including
10 aquatic insect larvae, crustaceans, attached diatoms, snails, and algae. Some mid-water foods or
11 even an occasional surface insect will be taken. Terrestrial insects that fall in the water may also
12 be consumed. Speckled dace typically mature in their second summer. Spawning often occurs
13 during the spring, but some spawning may take place all year, especially in spring habitats with a
14 rather narrow range of temperatures. Speckled dace typically spawn on the gravel edge or riffles
15 in stream habitats. Eggs hatch in approximately 6 days.

16
17 Human development in the area consists primarily of small, scattered residences with
18 which subsistence gardens, small orchards, or agricultural fields may be associated. During the
19 early 1970s, a large farm began operating in Ash Meadows. Development of the farm involved
20 the extensive removal of natural vegetation; land leveling; the construction of irrigation wells,
21 ditches, and fences; and other activities necessary for commercial farming. The former major
22 threats from dewatering and development were eliminated with the establishment of the Ash
23 Meadows National Wildlife Refuge. However, some of the spring outflows that were diverted
24 into ditches in the past remain today.

25
26 The Nevada speckled dace was federally listed as endangered on September 2, 1983
27 (USFWS 1983). Critical habitat was also designated on this date.

28
29 The primary threats to the Nevada speckled dace consist of habitat destruction and the
30 effects of exotic fish introductions. Because of the acquisition of many spring areas by the
31 USFWS, the major threats in the future will most likely consist of additional exotic species
32 introductions rather than physical habitat alteration (Nature Serve 2010).

33
34 The Ash Meadows speckled dace may occur in the affected area of the Amargosa Valley
35 SEZ.

36 37 38 **Desert Pupfish (*Cyprinodon macularius*)**

39
40 ESA Listing Status: Endangered

41 BLM Listing Status: Not Listed

42 State Listing Status: Arizona Wildlife Species of Concern; Endangered in California

43 Rarity: Arizona State Rank S1; California State Rank S1

44
45 The desert pupfish is a small fish that seldom exceeds 3 in. (7.5 cm) in length.
46 Historically, the desert pupfish occupied marshes, desert springs, and tributary streams in the

1 Lower Colorado and Gila River watersheds in California, Arizona, and Mexico
2 (USFWS 2010b,c). Currently it is known from only two Salton Sea tributaries in California and a
3 few shoreline pools and irrigation drains in Imperial and Riverside Counties. Successful
4 re-introductions have taken place in Riverside and Butte Counties in California and in Pima,
5 Pinal, Maricopa, Graham, Cochise, LaPaz, and Yavapai Counties in Arizona. The desert pupfish
6 can occupy locations where environmental conditions are extreme; namely, areas with dissolved
7 oxygen concentrations of <0.4 mg/L, salinity levels twice as high as those of sea water, and
8 temperatures up to 113°F (45°C) (USFWS 2010c). Shallow water, good clarity, and soft
9 substrates are common features of the desert pupfish habitat. The desert pupfish typically feeds
10 on a variety of algae, plants, aquatic invertebrates, and detritus.

11
12 Reproduction occurs during the second summer for most desert pupfish. Spawning occurs
13 throughout late spring and summer, with up to three generations produced in a single season
14 (Nature Serve 2010; USFWS 2010c).

15
16 The desert pupfish was listed as federally endangered on March 31, 1986
17 (USFWS 1986). Critical habitat was also designated on this date. Threats to the species include
18 competition and predation from introduced non-native species, channelization, water
19 impoundment and diversion, groundwater pumping, pollution, and erosion from livestock
20 grazing within the watershed (Nature Serve 2010; USFWS 2010c).

21
22 The desert pupfish may occur in the affected area of the Bullard Wash SEZ.

23 24 25 **Devil's Hole Pupfish (*Cyprinodon diabolis*)**

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 Devil's Hole pupfish is a small species about 1-in. (2.5-cm) long that occurs in
33 Devil's Hole in the Amargosa Valley of Nevada, located about 90 mi northwest of Las Vegas
34 (USFWS 1990). While this species is naturally restricted to Devil's Hole, the species has been
35 introduced in artificial refugia at the Amargosa Pupfish Station in Ash Meadows and in facilities
36 constructed by the Bureau of Reclamation located near the Hoover Dam. It lives only for one
37 year or less and spawns between April and mid-June. Population levels vary from about 125 to
38 550 individuals (USFWS 1990). The variation between spring and fall counts is a function of
39 severe environmental conditions, low oxygen levels, and low sunlight during the winter months,
40 which is a factor in algal production in the cavern. A population maintained within a refugium
41 seems to survive longer and fluctuate less between spring and fall than does the natural
42 population (USFWS 1990). Food of the pupfish includes algae and detritus obtained from the
43 sides and bottom of the cavern.

44
45 The Devil's Hole pupfish was listed as federally endangered on March 11, 1967
46 (USFWS 1967). Critical habitat has not been designated for this species. The greatest threat to

1 continued survival of the species is the small numbers existing in Devil’s Hole. The presence of
2 non-native snails is a threat if they are not controlled. These snails consume algae that the
3 pupfish feed on and rely on for oxygen production (Nature Serve 2010).

4
5 The Devil’s Hole pupfish may occur in the affected area of the Amargosa Valley SEZ.

6
7
8 **Gila Topminnow (*Poeciliopsis occidentalis occidentalis*)**

9
10 ESA Listing Status: Endangered
11 BLM Listing Status: Not Listed
12 State Listing Status: Arizona Wildlife Species of Concern
13 Rarity: Arizona State Rank S1
14

15 The Gila topminnow (*Poeciliopsis occidentalis occidentalis*) is a small, live-bearing
16 minnow that occurs in isolated springs in the Santa Cruz River system in New Mexico and
17 Arizona and on the San Carlos Apache Indian Reservation located in southeastern Arizona. The
18 Gila topminnow distribution in New Mexico and Arizona includes Redrock Canyon,
19 Cottonwood Spring, Monkey Spring, upper Sonoita Creek, Fresno Canyon, Coal Mine Canyon,
20 lower Sonoita Creek, Santa Cruz River north of Nogales, Cienega Creek, Sharp Spring, the upper
21 Santa Cruz River, Bylas Spring, Middle Spring, and Salt Creek. Topminnows have fairly broad
22 habitat requirements. They prefer shallow, warm, quiet water but can adjust to a rather wide
23 range of conditions, living in quiet to moderate currents. Topminnows live in a variety of water
24 types: springs, cienegas, marshes, permanent streams, intermittent streams, and, formerly, along
25 the edges of large rivers. Their preferred habitat consists of dense mats of algae and debris,
26 usually along stream margins or below riffles, with sandy substrates, sometimes covered with
27 organic mud and debris (AZGFD 1998; Nature Serve 2010).

28
29 The diet of the Gila topminnow is fairly generalized, consisting mostly of bottom debris,
30 vegetable material, and amphipod crustaceans. The topminnows feed voraciously upon aquatic
31 insect larvae, such as mosquitoes, when available. The breeding season for this species lasts from
32 January to August, but a few pregnant females are present throughout the year, and young are
33 produced even in winter. Sexual maturity may occur in a few weeks to many months after birth,
34 depending largely on the time of year the individual is born. Topminnows are not expected to
35 live longer than a year under natural conditions (Nature Serve 2010).

36
37 The Gila topminnow was federally listed as endangered on March 11, 1967
38 (USFWS 1967). Critical habitat has not been designated. The decline of this subspecies is
39 attributable to several factors: the construction of dams; the introduction of non-native predatory
40 and competitive fish; the drainage of wetlands and cienegas; and the desiccation of streams,
41 springs, and cienegas. Today, because of the presence of barriers to movement, Gila topminnows
42 can no longer re-distribute from their remaining isolated and widely separated populations to
43 colonize formerly occupied habitats, even during years with above average rainfall
44 (AZGFD 1998; Nature Serve 2010).

45
46 The Gila topminnow may occur in the affected area of the Bullard Wash SEZ.
47

1 **Hiko White River Springfish (*Crenichthys baileyi grandis*)**

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 Hiko White River springfish is a subspecies of White River springfish (*C. b. baileyi*)
9 that occurs only in the Hiko Springs and Crystal Spring of the White River, located north of
10 Alamo, Nevada. It has also been introduced into Blue Link Spring in Mineral County, Nevada.
11 In the mid 1990s, the populations of the Hiko Springs and Blue Link Springs totaled about 5,500
12 and 12,000 fish, respectively. The Crystal Spring population was <125 and in danger of
13 extirpation.
14

15 The life history of the HikoWhite River springfish is poorly understood but is generally
16 considered to be similar to that of the White River springfish. Adults prefer water depths of
17 about 1 m (3.5 ft), while larval fish are most often in shallow areas at depths of 0 to 0.6 m (0 to
18 2 ft). Spawning occurs between April and August, with the timing of spawning related to
19 primary production in the pools.
20

21 The white river springfish was listed as federally endangered on September 27, 1985
22 (USFWS 1985). Critical habitat was also designated on that date. Agricultural and municipal use
23 of Hiko Spring continues to limit the water available for the Hiko White River springfish. The
24 only surface water remaining is a small spring impoundment and seepage from this pool. The
25 Crystal Spring site is also affected by water withdrawal for agriculture (Nature Serve 2010).
26

27 The Hiko White River springfish may occur in the affected area of the Delamar Valley
28 SEZ.
29
30

31 **Moapa Dace (*Moapa coriacea*)**

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 Moapa dace is endemic to the warm spring area at the headwaters of the Moapa
39 (Muddy) River, in northern Clark County, southeastern Nevada. It is restricted to 10 warm
40 springs, their outflows, and the warm waters of the upper mainstream Muddy River. The velocity
41 of the water flow is variable, but in many areas, it can be swift. Streamside vegetation is dense
42 throughout most of the Moapa dace habitat, frequently forming a complete canopy over the
43 stream and filling the channel with snags and brush. Streamside vegetation consists of ash,
44 cottonwood, screwbean mesquite, willow, tamarisk, grape vines, and a variety of shrubs, grasses,
45 and herbs (Nature Serve 2010). The Moapa dace appears to be predominantly carnivorous,
46 feeding on invertebrates, and on lesser amounts of detritus and filamentous algae. Observation of

1 feeding indicates that the species feeds relatively indiscriminately on organisms drifting with the
2 current. Fish tend to congregate at dawn and dusk in swift water near snags and dash up into the
3 current to pick off drift material passing by. Moapa dace will consume benthic invertebrates
4 directly off the bottom in pool habitats. Larvae living in shallower, more slowly moving water
5 probably feed on smaller micro-crustaceans.
6

7 Moapa dace can reproduce throughout the year in the nearly constant temperatures of
8 their habitat. Peak reproduction probably occurs from February to April, followed by peak
9 emigration of the young in May. This species has been observed spawning on sandy substrate in
10 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).
11

12 The Moapa dace was federally listed as endangered on March 11, 1967 (USFWS 1967).
13 Critical habitat has not been designated.
14

15 The most important factor limiting the distribution and abundance of the Moapa dace
16 within its former range was probably the turbidity caused by irrigation return flows into the
17 formerly clear water. The feeding ability of the Moapa dace may have been severely curtailed by
18 this increased turbidity. Other apparent reasons for the decline of the species include competitive
19 interactions with introduced exotic species, parasites (commonly associated with aquarium fishes
20 and introduced through these exotic fish), and declining water quality (chemical parameters and
21 physical parameters) from channelization and irrigation for agricultural development. Future
22 threats to the species include additional water development for irrigation or any activity that
23 would increase the water turbidity, reduce the low gene pool, channelize the stream course, or
24 add exotic species to the stream in the headwaters of the Muddy River (Nature Serve 2010).
25

26 The Moapa dace may occur in the affected area of the Dry Lake SEZ.
27
28

29 **Moapa Speckled Dace (*Rhinichthys osculus moapae*)**

30

31 ESA Listing Status: Under Review
32 BLM Listing Status: Listed as Sensitive
33 State Listing Status: Protected in Nevada
34 Rarity: Nevada State Rank S1
35

36 The Moapa speckled dace is endemic to Clark County, Nevada, where it is restricted to
37 the Moapa (Muddy) River system. It utilizes stream bottoms in shallow, cobble riffles. These
38 fish occur in low-velocity areas behind rocks. Spawning habitat consists of small patches of bare
39 rocks and pebbles. The Moapa speckled dace may occur in the affected area of the Dry Lake
40 SEZ.
41
42

43 **Moapa White River Springfish (*Crenichthys baileyi moapae*)**

44

45 ESA Listing Status: Under Review
46 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 warm-water springs in the upper Muddy River. Preferred habitat includes spring pools
6 and backwaters in spring outflows. The species is more abundant in and near the springs than in
7 the river. The Moapa White River springfish may occur in the affected area of the Dry Lake
8 SEZ.

9
10
11 **Mohave Tui Chub (*Gila bicolor mohavensis*)**

12
13 ESA Listing Status: Endangered
14 BLM Listing Status: Not Listed
15 State Listing Status: Endangered in California (California Fully Protected)
16 Rarity: California State Rank S2

17
18 The Mohave tui chub is a medium-sized to large subspecies that ranges from 2 to 3.5 in.
19 (5.2 to 9.2 cm) in length and can reach lengths of 6.5 in. (17 cm). It occurred historically in the
20 Mohave River from the union of the east and west forks at the base of the San Bernardino
21 Mountains downstream to Soda Dry Lake in San Bernardino County, California. The existing
22 Mohave tui chub populations occur at four sites: Soda Springs, the California Department of Fish
23 and Game's Camp Cady Wildlife Area, China Lake Naval Air Weapons Center, and the Barstow
24 Desert Information Center (USFWS 2009a).

25
26 Habitat for the Mohave tui chub consists of deep pools and slough-like areas. Ditch-grass
27 (*Ruppia maritima*) in the sloughs likely provides spawning habitat and cover for juvenile fish,
28 protecting them from airborne predators (USFWS 2009a). Mohave tui chub typically spawn
29 from March/April to October. Females lay approximately 4,000 to 50,000 eggs over aquatic
30 vegetation. Once hatched, the fry will school in the shallows, while medium-sized (1 to 3 in. or
31 2.5 to 7.5 cm) tui chub school in water that is 1- to 2-in. (2.5- to 5-cm) deep. Large chub are
32 typically solitary and found in deeper water. Foods consumed include plankton, beetle larvae,
33 chironomid larvae, and organic debris (USFWS 2009a).

34
35 The Mohave tui chub was listed as federally endangered on October 13, 1970
36 (USFWS 1970). Critical habitat has not been designated for this species.

37
38 The greatest threat to continued survival of this species is lack of vegetation management
39 in the ponds and sloughs. Overgrown areas are filled with decomposing vegetation, which lowers
40 the dissolved oxygen in quiet, shallow habitats. Because of the isolated habitats in Soda Springs,
41 the species is subject to decreased genetic variability from inbreeding. Other threats include
42 introduction of other exotic species, habitat alteration, water diversion, and pollution (Nature
43 Serve 2010; USFWS 2009a).

44
45 The Mohave tui chub may occur in the affected area of the Pisgah SEZ.
46
47

1 **Oasis Valley Speckled Dace (*Rhinichthys osculus* ssp. 6)**

2
3 ESA Listing Status: Under Review
4 BLM Listing Status: Listed as Sensitive
5 State Listing Status: Protected in Nevada
6 Rarity: Nevada State Rank S1; USFWS Species of Concern
7

8 The Oasis Valley speckled dace is a small fish species that is restricted to spring-fed
9 habitats in the Oasis Valley, Nye County, Nevada. The Oasis Valley speckled dace may occur in
10 the affected area of the Amargosa Valley SEZ.
11

12
13 **Pahranagat Roundtail Chub (*Gila robusta jordani*)**

14
15 ESA Listing Status: Endangered
16 BLM Listing Status: Listed as Sensitive
17 State Listing Status: Protected in Nevada
18 Rarity: Nevada State Rank S1
19

20 The Pahranagat roundtail chub is a species that is about 10-in. (25-cm) long. It is found
21 only in Ash Springs, located in the Pahranagat Valley, Lincoln County, Nevada, and in about
22 7,400 ft (2,250 m) of its outflow. The Pahranagat roundtail chub is usually quite rare in the upper
23 6,400 ft (1,950 m) of the outflow stream but maintains good numbers of adults in a single
24 microhabitat in the lower portion of the natural channel. The lower section of the natural channel
25 from about 6,400 to 7,400 ft (1,950 to 2,250 m) below Ash Springs is a generally broad, straight
26 channel. There are scattered, dense stands of willow and grape along the stream margin, with
27 some ash and cottonwood. Root projections, fallen branches (and logs), and overhanging
28 branches provide aquatic cover. The substrate is sand, silt, and mud. Runs and pools make up
29 about 92% and 8%, respectively, of the available habitat. The relative scarcity of deep, slow
30 run/pool habitats with associated cover may impose some limitation on population size in this
31 last remaining habitat available to the species.
32

33 Reproduction occurs in the outflow of Ash Spring during February and March, when
34 adults leave their sheltered pool. This period coincides with annual thermal minimum
35 temperatures. Juveniles have been observed in the outflow from March through September,
36 disappearing rapidly from the population during October through January. Juveniles are
37 primarily insectivorous, while adults consume mostly plant material.
38

39 The Pahranagat roundtail chub was federally listed as endangered on October 13, 1970
40 (USFWS 1970). Critical habitat has not been designated for this subspecies. Threats to the
41 existence of this subspecies include habitat loss, predation, and competition with introduced
42 exotic species. The species was extirpated from Crystal Spring, possibly as a result of the
43 introduction of largemouth bass into the system. The subspecies appears to be presently
44 threatened by having lost most of its stream habitats, adverse consequences of interaction with
45 exotic fishes and snails, and loss of young to downstream intermittent habitats (Nature
46 Serve 2010).
47

1 The Pahranaagat roundtail chub may occur in the affected area of the Delamar Valley
2 SEZ.

3
4
5 **Pahranaagat Speckled Dace (*Rhinichthys osculus velifer*)**

6
7 ESA Listing Status: Under Review
8 BLM Listing Status: Listed as Sensitive
9 State Listing Status: Protected in Nevada
10 Rarity: Nevada State Rank S1
11

12 The Pahranaagat speckled dace is endemic to Nevada where it is restricted to the White
13 River Valley system. It inhabits rivers, streams, tributaries, springs, brooks, marshes, lakes, and
14 reservoirs. The Pahranaagat speckled dace may occur in the affected area of the Delamar Valley
15 SEZ.

16
17
18 **Pahrump Poolfish (*Empetrichthys latos*)**

19
20 ESA Listing Status: Endangered
21 BLM Listing Status: Not Listed
22 State Listing Status: Protected in Nevada
23 Rarity: Nevada State Rank S1
24

25 The Pahrump poolfish is a small omnivore that is about 2-in. (5-cm) long at maturity. It is
26 endemic to the Pahrump Valley in southern Nye County, Nevada. After nearly becoming extinct,
27 three populations were re-established at the following locations: Corn Creek Spring on the
28 Desert National Wildlife Refuge north of Las Vegas, Nevada; Shoshone Springs southeast of
29 Ely, Nevada; and an irrigation reservoir located on the Spring Mountains Ranch State Park west
30 of Las Vegas. No information was found on reproduction in this species.

31
32 Prior to the loss of the Manse Spring population, the habitat consisted of water with a
33 constant temperature of 76°F (24°C), with emergent vegetation in the shallow areas. Larger fish
34 used the open, deeper waters of the spring; juveniles were in the shallows with emergent
35 vegetation.

36
37 The Pahrump poolfish was listed as federally endangered on March 11, 1967
38 (USFWS 1967). Critical habitat has not been designated for this species. The greatest threat to
39 the re-introduced populations is competition and predation from other fish.

40
41 The Pahrump poolfish may occur in the affected area of the Dry Lake SEZ.
42
43
44

1 **Rio Grande Chub (*Gila pandora*)**

2
3 ESA Listing Status: Not Listed
4 BLM Listing Status: Listed as Sensitive
5 State Listing Status: Colorado Species of Concern
6 Rarity: Colorado State Rank S1; New Mexico State Rank S2
7

8 The Rio Grande chub is restricted to streams of the Rio Grande Basin. It inhabits clear,
9 cool, fast-flowing water over rubble or gravel substrates. The Rio Grande chub may occur in the
10 affected area of the following SEZs: Antonito Southeast, De Tilla Gulch, and Los Mogotes East.
11

12
13 **Rio Grande Sucker (*Catostomus plebeius*)**

14
15 ESA Listing Status: Not Listed
16 BLM Listing Status: Not Listed
17 State Listing Status: Endangered in Colorado
18 Rarity: Colorado State Rank S1; New Mexico State Rank S2
19

20 The Rio Grande sucker is restricted to streams of the Rio Grande Basin, from south
21 central Colorado to southern New Mexico. It is found in channels and backwaters near rapidly
22 flowing waters. The Rio Grande sucker may occur in the affected area of the following SEZs:
23 Antonito Southeast, De Tilla Gulch, and Los Mogotes East.
24

25
26 **Roundtail Chub (*Gila robusta*)**

27
28 ESA Listing Status: Not Listed
29 BLM Listing Status: Listed as Sensitive
30 State Listing Status: Arizona Wildlife Species of Concern
31 Rarity: Nevada State Rank S1, Arizona State Rank S2; Utah State Rank S2;
32 USFWS Species of Concern
33

34 The roundtail chub is known from larger tributaries in the Colorado Basin, from
35 Wyoming south to Arizona and New Mexico. It occupies cool to warm water streams and rivers
36 consisting of pools adjacent to riffles and runs. The roundtail chub may occur in the affected area
37 of the Gillespie SEZ.
38

39
40 **Warm Springs Pupfish (*Cyprinodon nevadensis pectoralis*)**

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 warm springs pupfish occupies six springs, outflow drainages, and marsh habitats in
2 Ash Meadows, Nye County, Nevada. These springs are North Scruggs Springs, South Scruggs
3 Springs, Marsh Springs, North Indian Springs, South Indian Springs, and School Springs. The
4 characteristics of the habitat of the springs are fairly constant. Temperatures in the springs range
5 from 86 to 91°F (30 to 33°C), and the pools are less than 4-ft (1.3-m) deep. *Chara* and *Spirogyra*
6 are the common submerged plants; *Scirpus* and *Typha* make up most of the emergent vegetation.
7 Salinity in these habitats is generally low. Little is known of the food habits of the warm springs
8 pupfish, but it is thought to feed primarily on algae and detritus throughout the year.

9
10 Reproduction occurs throughout the year at some springs and from February through
11 September in both Indian Springs. Several generations may be produced in a given year.
12 Spawning habitat is in open water with soft silt or sandy substrate. Fry occupy shallow areas
13 where algal growth is high.

14
15 The warm springs pupfish was listed as federally endangered on October 13, 1970
16 (USFWS 1970). No critical habitat is designated for this species. Threats to the species include
17 competition and predation from introduced non-native fish species. Bullfrogs and crayfish are
18 potential predators in much of the pupfish's habitat (Nature Serve 2010).

19
20 The warm springs pupfish may occur in the affected area of the Amargosa Valley SEZ.

21 22 23 **White River Desert Sucker (*Catostomus clarkii intermedius*)**

24
25 ESA Listing Status: Not Listed
26 BLM Listing Status: Listed as Sensitive
27 State Listing Status: Protected in Nevada
28 Rarity: Nevada State Rank S1

29
30 The White River desert sucker is a small fish endemic to Nevada, where it is restricted to
31 remnant streams of the White River system. The White River desert sucker may occur in the
32 affected area of the Delmar Valley SEZ.

33 34 35 **White Sands Pupfish (*Cyprinodon tularosa*)**

36
37 ESA Listing Status: Not Listed
38 BLM Listing Status: Not Listed
39 State Listing Status: Threatened in New Mexico
40 Rarity: New Mexico State Rank S1; USFWS Species of Concern

41
42 The White Sands pupfish is endemic to the Tularosa Basin in southern New Mexico. It
43 occurs in Malpais Spring and Lost River in Otero County, Salt Creek in Sierra County, and
44 Mound Springs in Lincoln County. Characteristic habitat is clear, shallow, strongly alkaline
45 pools and calm spring runs. Breeding adults prefer water temperatures of 59 to 70°F (15 to
46 21°C), although the habitat they occupy is characterized by high daily temperature fluctuations,

1 and they can tolerate temperatures of 30 to 100°F (-1 to 38°C). Salinity ranges from 2,000 to
2 100,000 mg/L total dissolved solids (TDS). Water depth utilized is less than 1 ft (0.3 m).
3 Substrate is mud-silt and sand-gravel. Associated species include salt grass (*Distichlis stricta*),
4 salt cedar (*Tamarix chinensis*), *Scirpus* spp., *Ruppia* spp., *Eleocharis* spp., Characeae, and
5 pondweed (*Potamogeton* spp.) (NMDGF 2010).
6

7 Feeding mainly on algae and mosquito larvae, the White Sands pupfish will also consume
8 its own eggs and fry. It is omnivorous, feeding most heavily on Culicidae, although it will eat
9 other invertebrates, algae, juveniles of its own species, plant matter, and aquatic insects.
10 Spawning begins at 64°F (18°C) in early April and continues through mid-September, peaking in
11 July. Males establish breeding territories in the shallow periphery of their habitat and entice
12 females to mate by using ritualized movements. Females possess up to 338 mature ova and
13 spawn several times each season. Pupfish grow rapidly in their first year of life, their mean
14 longevity is 2 years, and their maximum is 5 years.
15

16 In 1998, the White Sands pupfish was abundant and reasonably secure in its limited
17 habitat. The population remained stable in 1990, 1991, 1994, and 1996. Its abundance varies
18 seasonally, with the highest densities occurring in summer and autumn. Its abundance is directly
19 correlated with the extent of wetted habitats.
20

21 The White Sands pupfish was a federal “Notice of Review” species for possible listing as
22 endangered or threatened in 1985. It was identified as a Category 2 candidate on November 21,
23 1991, and listed as a species for consideration to be listed as threatened or endangered on
24 November 15, 1994. In 1996, the USFWS eliminated this category designation, and the species
25 was listed as a species of concern. It is listed as threatened by the state of New Mexico and is
26 ranked S1 in the state. Threats include invasive species, its extremely limited range, chemical
27 contamination, and water diversion (NMDGF 2010).
28
29

30 **J.6.1.4 Amphibians**

31 **Amargosa Toad (*Bufo nelsoni*)**

32
33
34
35 ESA Listing Status: Under Review
36 BLM Listing Status: Listed as Sensitive
37 State Listing Status: Protected in Nevada
38 Rarity: Nevada State Rank S2
39

40 The Amargosa toad is a small toad that is endemic to a very small range (<40 mi²
41 [100 km²]) in the Amargosa Valley in Nye County, Nevada. The species is confined to isolated
42 riparian and spring-fed habitats along the Amargosa River. It is usually observed near water at
43 the outflow of warm springs. The Amargosa Toad may occur in the affected area of the
44 Amargosa Valley SEZ.
45
46
47

1 **Lowland Leopard Frog (*Lithobates yavapaiensis*)**

2
3 ESA Listing Status: Not Listed

4 BLM Listing Status: Listed as Sensitive (Arizona)

5 State Listing Status: Arizona Wildlife Species of Concern

6 Rarity: California Species of Concern; USFWS Species of Concern

7
8 Lowland leopard frogs (*Lithobates yavapaiensis*) occur in a variety of natural and
9 manmade aquatic systems. General habitat associations include small to medium-sized streams,
10 rivers, channels, springs, ponds, and stock ponds within desert scrub, grassland, woodland, and
11 pinyon-juniper habitats dominated by bulrushes, cattails (*Typha* sp.), and riparian grasses near or
12 under an overstory of Fremont cottonwoods (*Populus fremonti*) and willows (*Salix* sp.) and
13 mesquite (*Prosopis* sp.). Selected sites are characterized as having a semi-permanent to
14 permanent hydrological cycle, a salinity range of 6.0% to 9.0%, and a thermal range of 51.8 to
15 84.2°F (11 to 29°C) (AmphibiaWeb 2010). Within these communities, individuals select daily
16 basking sites close to refugia in the form of emergent and perimeter vegetation, deep water, root
17 masses, undercut banks, and debris piles. Foraging is also conducted within these sites, since a
18 wide variety of insects and other arthropods make up this frog's diet (Nature Serve 2010).

19
20 The historic distribution of the lowland leopard frogs once extended discontinuously
21 from Arizona and New Mexico in the south, west to California, and north to Nevada and Utah.
22 Recent studies, however, indicate that habitat changes associated with agriculture, livestock
23 grazing, development, reservoir construction, and exotic predatory species have caused this
24 range to contract by nearly 50%. Populations of lowland leopard frogs are currently limited to
25 Arizona and New Mexico at an elevation ranging from sea level to 5,961 ft (0 to 1,817 m).

26
27 The lowland leopard frog was formerly a Category 2 candidate species under the ESA
28 until the classification system was modified and subsequently removed from the list.

29
30 Lowland leopard frog populations could potentially occur in the affected areas of the
31 following SEZs: Brenda, Bullard Wash, and Gillespie.

32
33
34 **Northern Leopard Frog (*Lithobates pipiens*)**

35
36 ESA Listing Status: Under Review

37 BLM Listing Status: Listed as Sensitive

38 State Listing Status: Not Listed

39 Rarity: California State Rank S2; Nevada State Rank S2; New Mexico State Rank S2;
40 Colorado Species of Concern

41
42 Northern leopard frogs (*Lithobates pipiens*) require a broad range of habitats in close
43 proximity because of their complicated life histories (Smith and Keinath 2007). Critical habitat
44 types vary by season and life stage, and they tend to exhibit a high degree of site fidelity
45 (Jennings and Hayes 1994). Breeding habitat consists of a variety of aquatic habitats, with
46 preferred sites characterized as having a semi-permanent to seasonal hydrological cycle; a

1 shallow water depth (<2 m); an areal extent of less than 20 ac (8 ha); abundant emergent
2 vegetation dominated by cattails (*Typha spp.*); an unconsolidated bottom; a low canopy cover
3 (<30%); low salinity; and an absence of predatory fish (Smith and Keinath 2007). Following
4 reproduction, adult and juvenile northern leopard frogs disperse into adjacent riparian habitat that
5 is dominated by dense, relatively tall grasses or forbs and has a moist substrate, where they
6 forage opportunistically for insects, arachnids, worms, and crustaceans (Jennings and
7 Hayes 1994). Overwintering occurs beneath leaf litter or below logs or within ponds or flowing
8 streams.

9
10 The size of the home range of northern leopard frog populations is determined by the
11 spatial configuration of breeding and nonbreeding habitats across the landscape. This area
12 typically encompasses a relatively small areal extent of 161 to 6,458 ft² (15 to 600 m²). Within
13 these territories, individuals disperse from 16 to 26,247 ft (5 to 8,000 m) from natal ponds into
14 terrestrial habitat, with juveniles making larger movements (>2,625 ft or >800 m) than adults
15 (<328 ft or <100 m) (Jennings and Hayes 1994).

16
17 Historically, the northern leopard frog was one of the most common and widespread
18 anurans in North America, occurring from southern Canada, south to Pennsylvania and
19 Kentucky, and west to the Pacific states. However, since the 1970s, this species has experienced
20 significant declines and local extirpations throughout most of its range, particularly in the
21 western states of California, Colorado, Montana, Idaho, eastern Washington, and Arizona (Smith
22 and Keinath 2007).

23
24 The western population of the northern leopard frog, including populations within
25 California, Arizona, Colorado, Idaho, Iowa, Minnesota, Missouri, Montana, Nebraska, Nevada,
26 New Mexico, North Dakota, Oregon, South Dakota, Texas, Utah, Washington, Wisconsin, and
27 Wyoming, was petitioned for listing under the ESA on July 9, 2009. In response to that petition,
28 the USFWS has initiated a status review for this species to determine whether listing is
29 warranted on October 28, 2009 (USFWS 2009b).

30
31 Northern leopard frog populations could potentially occur in the affected areas of the
32 following SEZs: Antonito Southeast, Delamar Valley, and Los Mogotes East.

33 34 35 **Southwestern Toad (*Bufo microscaphus*)**

36
37 ESA Listing Status: Under Review

38 BLM Listing Status: Listed as Sensitive

39 State Listing Status: Utah Species of Concern

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

41
42 The southwestern toad is an amphibian that occupies scattered habitats in Arizona,
43 Nevada, New Mexico, and Utah. It occurs in woodlands and low-elevation riparian habitats in
44 association with permanent or semi-permanent water bodies. The southwestern toad may occur
45 in the affected area of the following SEZs: Bullard Wash, Delmar Valley, Dry Lake, and
46 Gillespie.

1 **J.6.1.5 Reptiles**
2
3

4 **Arizona Skink (*Eumeces gilberti arizonensis*)**
5

6 ESA Listing Status: Not Listed
7 BLM Listing Status: Not Listed
8 State Listing Status: Arizona Wildlife Species of Concern
9 Rarity: Arizona State Rank S1; USFWS Species of Concern
10

11 The Arizona skink is a subspecies of Gilbert’s skink (*Eumeces gilberti*) that is known
12 only from west central Arizona. It occurs among rocks, logs, and leaf litter areas near permanent
13 or semi-permanent streams and riparian drainages up through oak-pine woodlands. The Arizona
14 skink may occur in the affected area of the Bullard Wash SEZ.
15

16
17 **Colorado Desert Fringe-Toed Lizard (*Uma notata*)**
18

19 ESA Listing Status: Not Listed
20 BLM Listing Status: Listed as Sensitive (Arizona)
21 State Listing Status: Not Listed
22 Rarity: California State Rank S2
23

24 The Colorado Desert fringe-toed lizard (*Uma notata*), an aeolian sand specialist, is
25 restricted to sparsely vegetated areas with fine, loose, windblown sand, including dunes, flats,
26 and riverbanks and washes of very arid desert (Nature Serve 2010). Individuals establish home
27 ranges that extend from 0.2 to 0.5 ac (0.10 to 0.2 ha) within areas that provide critical habitat
28 components, including (1) access to sands on windward ends of small accretion dunes and
29 (2) sparse shrubs and annual vegetation that provide primary dietary resources (e.g., ants, beetles,
30 true bugs, grasshoppers, and caterpillars) (Mayhew 1964). Preferred habitats generally occur
31 within creosote scrub desert communities at elevations ranging from sea level to 1,600 ft (0 to
32 490 m).
33

34 The geographic distribution of the Colorado Desert fringe-toed lizard extends from
35 extreme southeast California in the Colorado Desert from the Salton Sea and Imperial sand hills
36 east to the Colorado River, south to the Colorado River delta, and on into extreme northeastern
37 Baja California. The lizard’s range extends west as far as the east base of Borrego Mountain.
38

39 Specific estimates of population size are not known, but the lizard’s status is considered
40 relatively stable range-wide. However, recent investigations have suggested that many
41 populations are vulnerable to, or have already undergone, local extirpation as a result of
42 disruption to dune formation processes, off-highway vehicles, and increased predator populations
43 (CaliforniaHerps 2010; Murphy et al. 2006; Nature Serve 2010).
44

45 Colorado Desert fringe-toed lizard populations may potentially occur within the affected
46 area of the Imperial East SEZ.
47

1 **Desert Tortoise (*Gopherus agassizii*)**

2
3 ESA Listing Status: Threatened (Mojave Desert populations);

4 Under Review (Sonoran populations)

5 BLM Listing Status: Listed as Sensitive (Arizona)

6 State Listing Status: Arizona Wildlife Species of Concern; Threatened in California

7 Rarity: None

8
9 The desert tortoise occurs in desert regions of the southwestern United States and
10 northwestern Mexico. Within the six-state solar energy study region, it occurs in portions of
11 Arizona, California, Nevada, and Utah. Populations of this species are found in the Mojave and
12 Sonoran Deserts. The Mojave population, which includes desert tortoises north and west of the
13 Colorado River, is currently listed as threatened under the ESA. The Sonoran population, which
14 occurs south and east of the Colorado River, is currently under review for ESA listing.

15
16 Within the varied plant communities of the Mojave and Sonoran Desert regions, desert
17 tortoises can potentially survive and reproduce where their basic habitat requirements are met.
18 These requirements include sufficient suitable plants for forage and cover and suitable substrates
19 for burrow and nest sites. Desert tortoises occur primarily on flats and bajadas that have soils
20 ranging from sand to sandy-gravel and that are characterized by scattered shrubs and abundant
21 inter-shrub space for growth of herbaceous plants. Desert tortoises are also found on rocky
22 terrain and slopes in parts of the Mojave and Sonoran Desert regions. There is substantial
23 geographic variation in the way tortoises use available resources. Desert tortoises spend much of
24 their lives in burrows, emerging to feed and mate during late winter and early spring. They
25 typically remain active through the spring, and they sometimes emerge again after summer
26 storms. During these activity periods, desert tortoises eat a wide variety of herbaceous plants,
27 particularly grasses and the flowers of annual plants. Desert tortoises exhibit delayed maturity
28 and live a long life. Females typically create a nest under a large shrub or at a burrow entrance
29 and lay from 2 to 14 eggs from May to July (Utah Division of Wildlife Resources 2010). Adults
30 are well-protected against most predators (apart from humans) and other environmental hazards.
31 During hibernation, several individuals often occupy the same burrow (Utah Division of Wildlife
32 Resources 2010). Their longevity helps compensate for their variable annual reproductive
33 success, which is correlated with environmental conditions.

34
35 Several factors have led to declining populations of the desert tortoise. Reductions in
36 tortoise numbers have been attributed to direct and indirect human-caused mortality, coupled
37 with the inadequacy of existing regulatory mechanisms to protect desert tortoises and their
38 habitat. Impacts, such as the destruction, degradation, and fragmentation of habitat, result from
39 urbanization, agricultural development, livestock grazing, mining, and roads. In addition, an
40 upper respiratory tract disease is an additional major cause of mortality and population decline,
41 particularly in the western Mojave Desert. Predators that prey on adult desert tortoises include
42 the coyote (*Canis latrans*), kit fox (*Vulpes macrotis*), raccoon (*Procyon lotor*), bobcat (*Felis*
43 *rufus*), badger (*Taxidea taxus*), and feral dog (*Canis familiaris*). Predators of tortoise eggs and
44 young include the common raven (*Corvus corax*), gila monster (*Heloderma suspectum*), snakes,
45 roadrunner (*Geococcyx californianus*), red-tailed hawk (*Buteo jamaicensis*), and badger
46 (USFWS 2008a).

1 The Mojave population of desert tortoise (including any Sonoran Desert tortoises that are
2 outside their normal range) was federally listed as threatened on April 2, 1990. On February 8,
3 1994, the USFWS designated approximately 6.4 million ac (25,900 km²) of desert as critical
4 habitat for this species. The Mojave population was listed in response to precipitous declines in
5 desert tortoise numbers in many areas.
6

7 Mojave populations of the desert tortoise, listed as threatened under the ESA, may occur
8 in the affected areas of the following SEZs: Amargosa Valley, Delamar Valley, Dry Lake, Dry
9 Lake Valley North, East Mormon Mountain, Iron Mountain, Pisgah, and Riverside East. Sonoran
10 populations of the desert tortoise, currently under review for ESA listing, may occur in the
11 affected areas of the following SEZs: Brenda, Bullard Wash, and Gillespie.
12
13

14 **Flat-Tailed Horned Lizard (*Phrynosoma mcallii*)**

15
16 ESA Listing Status: Proposed
17 BLM Listing Status: Listed as Sensitive (California)
18 State Listing Status: Arizona Wildlife Species of Concern
19 Rarity: Arizona State Rank S2; California State Rank S2
20

21 The flat-tailed horned lizard (*Phrynosoma mcallii*) is confined to dunes, sandy hills and
22 washes, badlands, and salt flats within desert scrub communities. It occurs at an elevational
23 range of 0 to 1,606 ft (0 to 520 m) primarily on fine, windblown silica sand deposits, with
24 gravelly soils utilized to a lesser extent. White bursage (*Ambrosia dumosa*), indigo bush (*Dalea*
25 *emoryi*), saltbush (*Atriplex canescens* and *A. polycarpa*), and big galleta grass (*Pleuraphis*
26 *rigida*) are highly correlated to high species density, presumably for their ability to trap
27 windblown sand and provide shade for thermal cover (Flat-Tailed Horned Lizard Interagency
28 Coordinating Committee 2003). Home ranges encompass a spatial extent of 0.5 to 8.8 ac (0.2 to
29 3.6 ha) and coincide closely with the presence of the lizard's primary prey item, harvester ants
30 (*Pogonomyrex californicus*).
31

32 The geographic distribution of the flat-tailed lizard is the most limited of any horned
33 lizard species in the United States; its range is in the extreme southwestern corner of Arizona, the
34 southeastern corner of California, and adjoining portions of Sonora and Baja California, Mexico.
35 Populations occur in (1) southwestern Yuma County south of the Gila River and west of the
36 Butler and Gila Mountains of Arizona and (2) Imperial, Riverside, and San Diego Counties in
37 California, where they are experiencing slight to moderate declines, respectively (AGFD 2010;
38 CaliforniaHerps 2010; NatureServe 2010).
39

40 The USFWS originally proposed listing the flat-tailed horned lizard as a threatened
41 species on November 29, 1993. The proposal was withdrawn in 1997, challenged, and later
42 reinstated in 2002. After an extensive comment period and data review, the USFWS again
43 withdrew the proposed listing in 2003. Following additional challenges against the withdrawal of
44 the proposed rule, the USFWS reinstated the proposed rule to list this species as threatened under
45 the ESA on March 2, 2010 (USFWS 2010d).
46

1 Flat-tailed horned lizard populations could potentially occur in the affected area of the
2 Imperial East SEZ.

3
4
5 **Gila Monster (*Heloderma suspectum*)**

6
7 ESA Listing Status: Not Listed
8 BLM Listing Status: Listed as Sensitive
9 State Listing Status: Protected in Nevada
10 Rarity: California State Rank S1; Utah State Rank S1; Nevada State Rank S2;
11 USFWS Species of Concern
12

13 The Gila monster is a desert lizard with a scattered distribution in the Mojave and
14 Sonoran Deserts. This species inhabits areas of rocky, deeply incised topography, including
15 canyon bottoms, rocky bajadas, washes, desert scrub, desert riparian areas, oak woodlands, and
16 semiarid grasslands. The Gila monster may occur in the affected area of the following SEZs:
17 Brenda, Bullard Wash, Dry Lake and Gillespie.
18

19
20 **Milk Snake (*Lampropeltis triangulum*)**

21
22 ESA Listing Status: Not Listed
23 BLM Listing Status: Listed as Sensitive (Colorado)
24 State Listing Status: Not Listed
25 Rarity: Not Listed
26

27 The milk snake, *Lampropeltis triangulum*, is a widely distributed species with a total of
28 25 subspecies known from the snake's geographical range. Each is distinguished by slight color
29 variations and habitat affinities. Of these subspecies, two occur in Colorado: *L. t. taylori* and
30 *L. t. gentilis*. Milk snakes of these sub-specific groups use a variety of rocky grassland and
31 shrubland habitat types, including scrub, shortgrass prairie, sagebrush desert, and pinyon-juniper
32 woodland communities. Individuals select microhabitats with limestone or igneous outcroppings
33 on hillsides, canyons, river valleys, and high plains at elevations primarily below 8,000 ft
34 (2,440 m), where they generally remain concealed within rock crevices or beneath debris.
35

36 Geographically, milk snakes range throughout much of the continental United States,
37 with a species presence in Colorado that occurs in Conchos County in the west. Accurate
38 information on its population status within the states is not known because of the snake's
39 fossorial and nocturnal behavior.
40

41 Milk snake populations could potentially occur in the affected areas of the following
42 SEZs: Antonito Southeast and Los Mogotes.
43
44
45

1 **Mojave Fringe-Toed Lizard (*Uma scoparia*)**

2
3 ESA Listing Status: Not Listed
4 BLM Listing Status: Listed as Sensitive (Arizona and California)
5 State Listing Status: Arizona Wildlife Species of Concern
6 Rarity: Arizona State Rank S1
7

8 The Mojave fringe-toed lizard (*Uma scoparia*), an aeolian sand specialist, is restricted to
9 sparsely vegetated areas with fine, loose, windblown sand, including dunes, flats, and riverbanks
10 and washes of very arid desert (Nature Serve 2010). Individuals establish home ranges that
11 extend from 0.2 to 0.5 ac (0.10 to 0.2 ha) within areas that provide critical habitat components,
12 including (1) access to sands affording adequate nesting opportunities as well as a gradient of
13 solar and temperature conditions needed to maintain an optimal thermal preferenda of 99.5°F
14 (37.5°C) and (2) sparse shrubs and annual vegetation that provide primary dietary resources
15 (e.g., seeds, flowers, grasses, and insects) (Mayhew 1964). Preferred habitats generally occur
16 within creosote scrub desert communities at an elevation ranging from sea level to 3,002 ft (0 to
17 915 m).
18

19 The geographic distribution of the Mojave fringe-toed lizard ranges discontinuously in
20 the Mojave Desert, from Death Valley south to the Colorado River near Blythe, California, and
21 extreme southwestern Arizona, where it occurs as small, scattered populations. Specific
22 estimates of population size are not known; however, recent investigations have suggested that
23 many populations are vulnerable to, or have already undergone, local extirpation (Murphy et al.
24 2006).
25

26 The Amargosa River Population of the Mojave fringe-toed lizard, which occurs in
27 portions of San Bernardino County, California, was petitioned for listing under the ESA on
28 April 10, 2006. In response to that petition, the USFWS initiated a status review for this species
29 to determine whether listing is warranted on January 10, 2008 (USFWS 2008b). However,
30 populations under review for listing under the ESA do not occur in the vicinity of any of the
31 SEZs.
32

33 The Mojave fringe-toed lizard could occur in the affected areas of the following SEZs:
34 Iron Mountain, Pisgah, and Riverside East.
35
36

37 **Rosy Boa (*Charina trivirgata*)**

38
39 ESA Listing Status: Not Listed
40 BLM Listing Status: Listed as Sensitive (Arizona and California)
41 State Listing Status: Not Listed
42 Rarity: California State Rank S2
43

44 The rosy boa (*Charina trivirgata*) is one of two boid species native to the United States.
45 It is a heavy-bodied snake with smooth, shiny scales and a blunt but tapered tail that is primarily
46 crepuscular in nature. As a saxicolous species, the rosy boa is strongly associated with rocky

1 habitats, including deserts, canyons, and arid scrublands. Individuals have well-defined, stable
2 home ranges averaging 4.0 ac (1.6 ha) in size, and a moderate level of site fidelity is displayed
3 (Diffendorfer et al. 2005). Within these areas, microhabitats characterized as having a moderate
4 to high density of vegetation and rocks, available intermittent or permanent water, and a southern
5 exposure at elevations from sea level to 6,791 ft (0 to 2,070 m) are preferred. The diet of the rosy
6 boa includes such prey items as rodents, small birds, lizards, snakes, and amphibians (Nature
7 Serve 2010).

8
9 The geographic distribution of the rosy boa extends from southern California and
10 southwestern Arizona, where it occurs in scattered populations. There are two special status
11 subspecies of rosy boa that may occur within the affected areas of the SEZs: desert rosy boa
12 (*C. t. gracia*) and Mexican rosy boa (*C. t. trivirgata*). Specific estimates of population size are
13 not known because of the boa's fossorial and nocturnal tendencies, but its status is apparently
14 secure range-wide, although over-collection and road mortality have resulted in some local
15 population declines.

16
17 Desert rosy boa populations may potentially occur within the affected area of the
18 Riverside East SEZ. Mexican rosy boa populations may occur within the affected area of the
19 Gillespie SEZ.

20 21 22 **Texas Horned Lizard (*Phrynosoma cornutum*)**

23
24 ESA Listing Status: Not Listed
25 BLM Listing Status: Listed as Sensitive
26 State Listing Status: Not Listed
27 Rarity: Not Listed

28
29 The Texas horned lizard occurs in New Mexico, Texas, and Arizona. Within New
30 Mexico, it is common in Doña Ana and Otero Counties. Its preferred habitat is flat, open,
31 generally dry country with little plant cover other than desert scrub, bunchgrass, and cactus. The
32 lizard buries itself in loose sandy, loamy, or rocky soils and seeks shelter under rocks
33 (NMDGF 2010).

34
35 Texas horned lizards consume primarily harvester ants, although beetles and other small
36 invertebrates can also be consumed. Juvenile foods are probably similar to those of adults.
37 Mating occurs in May or June. Females lay 18 to 30 eggs and bury the clutch in holes in the
38 ground about 6-in. (15-cm) deep. Eggs hatch in 1 or 2 months. The young receive no parental
39 care, and reach sexual maturity in about 2 years (NMDGF2010).

40
41 In 1994, the Texas horned lizard was listed as a Category 2 species for consideration to
42 be listed as a threatened or endangered species. In 1996, the USFWS eliminated the categories
43 and reclassified the species as a species of concern. It was delisted as a species of concern in
44 2003. Threats include trenches, cattle guards, pitfalls, and pesticides. It may occur within the
45 affected regions of the following SEZs: Mason Draw and Red Sands (NMDGF 2010).

1
2 **Tucson Shovel-Nosed Snake (*Chionactis occipitalis klauberi*)**
3

4 ESA Listing Status: Candidate
5 BLM Listing Status: Listed as Sensitive
6 State Listing Status: Not Listed
7 Rarity: Arizona State Rank S1
8

9 The Tucson shovel-nosed snake is a fairly small snake that is one of three subspecies of
10 the western shovel-nosed snake known to occur in Arizona. The Tucson shovel-nosed snake
11 occupies the easternmost portion of the species' range in Maricopa and Pinal Counties. The
12 species is found in low desert regions, where it inhabits creosote-mesquite communities with soft
13 sandy substrates. The species is usually found near sandy washes, dunes, or bajadas. The Tucson
14 shovel-nosed snake may occur in the affected area of the Gillespie SEZ.
15

16
17 **J.6.1.6 Birds**
18

19
20 **American Peregrine Falcon (*Falco peregrinus anatum*)**
21

22 ESA Listing Status: Not Listed
23 BLM Listing Status: Listed as Sensitive
24 State Listing Status: Arizona Wildlife Species of Concern; Threatened in New Mexico
25 Rarity: Colorado State Rank S2; New Mexico State Rank S2;
26 Colorado and USFWS Species of Concern
27

28 American peregrine falcon populations have reoccupied much of their historic habitat in
29 New Mexico, California, and Arizona, where they occur in mountainous regions in the summer
30 or year-round. The falcons breed throughout North America south of the arctic tundra, in the Sea
31 of Cortez region and the Central Plateau in Mexico, and in the southern Appalachian Mountains.
32 They migrate to the Caribbean and South America in winter. The falcons nest along cliffs in
33 forested areas near water and bluffs and in urban areas on buildings next to large grasslands,
34 meadows, and lakes, where these predators can hunt. They use a side variety of habitat and may
35 be found at elevations ranging from 3,500 to 9,000 ft (1,070 to 2,740 m) (NMDGF 2010).
36

37 American peregrine falcons are carnivores, eating primarily birds like jays, woodpeckers,
38 swifts, mourning doves, and pigeons. They also occasionally feed on bats, small mammals, and
39 reptiles. Reproduction begins at 3 years of age. The falcons are monogamous and mate for life,
40 performing elaborate courtship displays from April to June. Clutches of three to four eggs are
41 incubated for 28 days and fledged 35 to 42 days after hatching, with fledgling success ranging
42 from 0.7 to 1.5 young (NMDGF 2010).
43

44 The American peregrine falcon was federally listed as endangered in 1970 following
45 drastic population declines coinciding with the spread of DDT application. Populations
46 rebounded following bans on the use of DDT, and the species was delisted in 1999. It was listed

1 as a federal species of concern by the USFWS in 2007. Present threats include pesticide
2 poisoning, low breeding density, reproductive isolation, lack of gene flow between isolated
3 populations, and reduction in foraging habitat and the availability of avian prey. The species may
4 occur within the affected regions of the following SEZs: Afton, Antonito Southeast, Brenda,
5 Bullard Wash, De Tilla Gulch, Fourmile East, Los Mogotes East, Mason Draw, and Red Sands
6 (NMDGF 2010).

7
8
9 **American White Pelican (*Pelecanus erythrorhynchos*)**

10
11 ESA Listing Status: Not Listed
12 BLM Listing Status: Listed as Sensitive
13 State Listing Status: Not Listed
14 Rarity: Colorado State Rank S1; Utah State Rank S1; Nevada State Rank S2;
15 USFWS Species of Concern

16
17 The American white pelican occurs on larger lakes and reservoirs. It may occur in the
18 affected area of the following SEZs: Fourmile East and Milford Flats South.

19
20
21 **Baird's Sparrow (*Ammodramus bairdii*)**

22
23 ESA Listing Status: Not Listed
24 BLM Listing Status: Listed as Sensitive
25 State Listing Status: Threatened in New Mexico
26 Rarity: New Mexico State Rank S1; USFWS Species of Concern

27
28 The Baird's sparrow is a winter nonbreeding resident in the southwestern United States
29 and northern Mexico. Within New Mexico, it occurs primarily in the eastern plains and southern
30 lowlands. It also occurs in Hidalgo County, the San Juan Mountains, and the Sangre de Cristo
31 Mountains at elevations up to 11,800 ft (3,600 m). Nonbreeding habitat includes open desert
32 grasslands, prairies, mountain fields, and overgrown fields at elevations from 2,800 to 5,500 ft
33 (850 to 1,680 m) (NMDGF 2010).

34
35 The Baird's sparrow feeds on spiders, grass, and forb seeds. Grasses are the most
36 important food item to adults, while the young feed only on insects. It nests in tallgrass prairie
37 habitats. Migration occurs from August to November (NMDGF 2010).

38
39 The Baird's sparrow is currently listed as sensitive by the BLM, listed as threatened and
40 ranked S1 in New Mexico, and considered a species of concern by the USFWS. Threats include
41 habitat alterations due to agriculture and the plowing of native prairies, loss of cover, and
42 grazing. Baird's sparrow may occur within the affected regions of the Red Sands SEZ
43 (NMDGF 2010).

1 **Bald Eagle (*Haliaeetus leucocephalus*)**

2
3 ESA Listing Status: Threatened (Sonoran populations); Delisted elsewhere
4 BLM-Sensitive Status: Listed as Sensitive
5 State Status: Arizona Wildlife Species of Concern; Threatened in Colorado;
6 Threatened in New Mexico; Protected in Nevada
7 Rarity: Colorado State Rank S1; New Mexico State Rank S1; Nevada State Rank S1;
8 Utah State Rank S1; USFWS Species of Concern (all populations but Sonoran);
9 Utah Species of Concern

10
11 The bald eagle ranges throughout much of North America, nesting on both coasts: from
12 Florida to Baja California, Mexico, in the south; and from Labrador to the western Aleutian
13 Islands, Alaska, in the north. Within this range, bald eagles are absent as breeding birds in most
14 of the Great Basin, the prairie and plains region, and the eastern United States west of the
15 Appalachian Mountains. It occurs in all states in the six-state solar energy region.

16
17 The bald eagle is a bird of aquatic ecosystems, frequenting estuaries, large lakes, major
18 rivers, and some seacoast habitats. The species may also use prairies if adequate food is
19 available. To support bald eagles, these areas must provide an adequate food base, perching areas
20 near the shoreline, and suitable nesting sites. Fish is the major component of the bald eagle's
21 diet, but waterfowl, seagulls, and carrion are also eaten. In winter (defined as the non-nesting
22 period), bald eagles often congregate at specific wintering sites that are close to open water and
23 offer good perch trees, night roosts, and an abundance of shallow-water fish or waterfowl as
24 prey. Large concentrations of eagles are often observed at salmon spawning rivers.

25
26 Nest sites are usually in large trees along shorelines, in relatively remote areas that are
27 free of disturbance. Trees must be sturdy and open to support bald eagle nests, which are often
28 5-ft (1.5-m) wide and 3-ft (0.9-m) deep. The nesting season lasts about 6 months. Breeding times
29 for bald eagles vary by elevation as well as by latitude; mating occurs in late September through
30 November in the south, in January through March in the central states, and in late March to early
31 April in Alaska. Adults tend to use the same breeding areas year after year, and often use the
32 same nest, although a breeding area may include one or more alternate nest(s).

33
34 The decline of bald eagles in most of the United States was caused by a combination of
35 hunting, a decline in major prey species, and DDT usage. Since a recovery program for the
36 species was established in the mid-1970s, the bald eagle population has increased in number and
37 expanded in range. This improvement is attributable to the banning of DDT and other persistent
38 organochlorides, habitat protection, and other recovery efforts.

39
40 The bald eagle was once federally listed as endangered in all of the lower 48 states
41 (March 11, 1967), with the exception of Michigan, Minnesota, Wisconsin, Washington, and
42 Oregon, where it was designated as threatened. It has since been delisted due to recovery in all
43 populations except the Sonoran populations occurring in Arizona (72 FR 37345, 73 FR 23966).
44 Currently, only the Sonoran population in Arizona is listed under the ESA. However, a recent
45 finding by the USFWS indicated that listing for this population may not be warranted
46 (75 FR 8601). Critical habitat for this species has not been designated.

1 Sonoran populations of the bald eagle, currently listed as threatened under the ESA,
2 may occur in the affected areas of the following SEZs: Brenda, Bullard Wash, and Gillespie.
3 Populations of bald eagle that are delisted from the ESA may occur in the affected areas of the
4 following SEZs: Afton, Antonito Southeast, De Tilla Gulch, Escalante Valley, Fourmile East,
5 Los Mogotes East, Mason Draw, Milford Flats South, Red Sands, and Wah Wah Valley.
6
7

8 **Barrow's Goldeneye (*Bucephala islandica*)**
9

10 ESA Listing Status: Not Listed
11 BLM Listing Status: Listed as Sensitive (Colorado)
12 State Listing Status: Threatened in New Mexico
13 Rarity: Colorado State Rank S2; New Mexico State Rank S2
14

15 The Barrow's goldeneye is a winter nonbreeding resident in the southwestern United
16 States and northern Mexico. Nonbreeding habitat includes open grasslands and overgrown fields.
17 The Barrow's goldeneye may occur in the affected area of the following SEZs: Antonito
18 Southeast, De Tilla Gulch and Fourmile East.
19
20

21 **Bell's Vireo (*Vireo bellii*)**
22

23 ESA Listing Status: Not Listed
24 BLM Listing Status: Listed as Sensitive (New Mexico)
25 State Listing Status: Threatened in New Mexico
26 Rarity: New Mexico State Rank S2; USFWS Species of Concern
27

28 The Bell's vireo breeds from southern California, the Southwest, and the central Great
29 Plains and adjacent Midwest to northern Mexico. Within New Mexico, it occurs in the lower
30 Gila Valley, Guadalupe Canyon, lower San Francisco Valley, and Hidalgo and Eddy Counties. It
31 winters in central and South America. Its habitat includes dense shrublands or woodlands along
32 lower-elevation riparian areas among willows, scrub oak, and mesquite; annual grasslands;
33 desert scrub; and marshes. The species may potentially nest in any successional stage with dense
34 understory vegetation (NMDGF 2010).
35

36 The Bell's vireo feeds mostly on hemipterans, lepidopterans, orthopterans, coleopterans,
37 and hymenopterans, although the birds will consume lesser amounts of snails, spiders, dipterans,
38 and plants. They breed from May to July, laying three to five eggs per clutch (NMDGF 2010).
39

40 Natural threats include heavy cowbird parasitism, severe weather, and predation.
41 Anthropogenic threats include livestock grazing, agricultural pesticides, and loss of habitat from
42 urbanization, flood control, and reservoir construction. Populations have declined in New
43 Mexico, likely due to extensive habitat destruction. Currently, the species is listed as threatened
44 by the state of New Mexico and ranked S2 in New Mexico and is a USFWS species of concern.
45 It may occur within the affected regions of the following SEZs: Afton and Red Sands (NMDGF
46 2010).
47

1 **Bendire's Thrasher (*Toxostoma bendirei*)**

2
3 ESA Listing Status: Not Listed
4 BLM Listing Status: Listed as Sensitive
5 State Listing Status: Not Listed
6 Rarity: Not Listed
7

8 The Bendire's thrasher is a small, neotropical migrant bird that is a summer breeding
9 resident in southern California. This species inhabits desert succulent shrub and Joshua tree
10 (*Yucca brevifolia*) habitats in the Mojave Desert, where it is associated with sagebrush
11 (*Artemisia* sp.), pinyon-juniper woodlands, cholla (*Opuntia* sp.) cactus, Joshua tree, palo verde
12 (*Cercidium* sp.), mesquite (*Prosopis* sp.), and agave species. The Bendire's thrasher may occur
13 in the affected area of the following SEZs: Iron Mountain, Pisgah, and Riverside East.
14

15
16 **Black Tern (*Chlidonias niger*)**

17
18 ESA Listing Status: Not Listed
19 BLM Listing Status: Listed as Sensitive
20 State Listing Status: Not Listed
21 Rarity: USFWS Species of Concern
22

23 The black tern is a migratory transient in the southwestern United States. Within New
24 Mexico, it is common in Chaves and Quay Counties. It inhabits wet grasslands, marshes, flooded
25 agricultural fields, playa margins, and open water habitats in desert lowland areas. Associated
26 vegetation includes wild oat (*Avena* spp.), ripgut brome (*Bromus rigidus*), soft chess (*Bromus*
27 *mollis*), bur clover (*Medicago hispida*), and filaree (*Erodium* spp.). Its elevation ranges from
28 2,900 to 7,500 ft (880 to 2,300 m) (NMDGF 2010).
29

30 Breeding in late May to August, black terns are monogamous for each breeding season,
31 and both parents care for the young after hatching. Females lay three eggs and incubate them for
32 21 days. Young are precocial at hatching (NMDGF 2010).
33

34 Threats to the black tern include habitat loss and degradation, partially due to wetland
35 drainage. The black tern was listed as a Category 2 federal candidate in the *Federal Register* on
36 November 15, 1994. Currently, it is a USFWS species of concern and is designated as sensitive
37 by the BLM. It may occur within the affected regions of the Red Sands SEZ (NMDGF 2010).
38
39

40 **California Black Rail (*Laterallus jamaicensis coturniculus*)**

41
42 ESA Listing Status: Not Listed
43 BLM Listing Status: Listed as Sensitive
44 State Listing Status: Arizona Wildlife Species of Concern; Threatened in California
45 (California Fully-Protected)
46 Rarity: Arizona State Rank S1; California State Rank S1; USFWS Species of Concern
47

1 The California black rail is a small, wetland bird that inhabits coastal and freshwater
2 marshes of southern California and western Arizona. This species is threatened under the
3 California Endangered Species Act (CESA) and is a California fully protected species. In the
4 SEZ region, the species is associated with marsh habitats containing dense vegetation, such as
5 cattail (*Typha* sp.), bulrush (*Scirpus* sp.), or reeds (*Phragmites* spp.). The California black rail
6 may occur in the affected area of the Imperial East SEZ.
7
8

9 **Ferruginous Hawk (*Buteo regalis*)**

10
11 ESA Listing Status: Not Listed
12 BLM Listing Status: Listed as Sensitive
13 State Listing Status: Arizona Wildlife Species of Concern
14 Rarity: Arizona State Rank S2; California State Rank S2; New Mexico State Rank S2;
15 Nevada State Rank S2; Utah State Rank S2; Colorado Species of Concern;
16 USFWS Species of Concern
17

18 The ferruginous hawk inhabits grasslands, sagebrush, and saltbrush habitats, as well as
19 the periphery of pinyon-juniper woodlands. The species nests in tall trees or on rock outcrops
20 along cliff faces. It may forage in various desert shrubland habitats. The ferruginous hawk may
21 occur in the affected area of the following SEZs: Afton, Amargosa Valley, Antonito Southeast,
22 Brenda, Bullard Wash, De Tilla Gulch, Delamar Valley, Dry Lake, Dry Lake Valley North, East
23 Mormon Mountain, Escalante Valley, Fourmile East, Gillespie, Gold Point, Imperial East, Iron
24 Mountain, Los Mogotes East, Mason Draw, Milford Flats South, Millers, Pisgah, Red Sands,
25 Riverside East, and Wah Wah Valley.
26
27

28 **Gila Woodpecker (*Melanerpes uropygialis*)**

29
30 ESA Listing Status: Not Listed
31 BLM Listing Status: Not Listed
32 State Listing Status: Endangered in California
33 Rarity: California State Rank S1
34

35 The Gila woodpecker is listed as an endangered species under CESA. It is a fairly
36 uncommon resident in southern California and southwestern Arizona, where it occurs in desert
37 riparian and wash habitats along the lower Colorado River Basin. The Gila woodpecker may
38 occur in the affected area of the Riverside East SEZ.
39
40

41 **Gray Vireo (*Vireo vicinior*)**

42
43 ESA Listing Status: Not Listed
44 BLM Listing Status: Listed as Sensitive
45 State Listing Status: Threatened in New Mexico
46

1 Rarity: California State Rank S2; Colorado State Rank S2; New Mexico State Rank S2;
2 USFSW Species of Concern
3

4 The gray vireo is an uncommon summer resident in arid pinyon-juniper and chaparral
5 habitats of southern California, New Mexico, Texas, Colorado, Utah, and Arizona. Within New
6 Mexico, gray vireos summer in the Guadalupe Mountains and Doña and Otero Counties in arid
7 juniper woodlands on foothills and mesas with a well-developed grass component. Nonforest
8 habitat is open to dense stands of shrubs and low trees. Associated vegetation includes juniper
9 (*Juniperus* spp.), oak (*Quercus* spp.), big sagebrush (*Artemisia tridentata*), saltbush (*Atriplex*
10 *confertifolia*), greasewood (*Sarcobatus vermiculatus*), and creosote bush (*Larrea divaricata*). Its
11 elevation ranges from 2,000 to 6,500 ft (600 to 2,000 m) (NMDGF 2010).
12

13 Gray vireos are insectivores, eating mainly Lepidopterans. They also feed on the fruits of
14 the elephant tree (*Bursera microphylla*). The species incubates clutches of three to five eggs for
15 14 to 15 days. Nests are parasitized frequently by cowbirds (NMDGF 2010; Nature Serve 2010).
16

17 The gray vireo was listed as endangered in New Mexico on July 22, 1983. It was ranked
18 S2 in New Mexico in 2006. Currently, it is listed as sensitive by the BLM; listed as threatened in
19 New Mexico; ranked S2 in Colorado, California, and New Mexico; and is a USFWS species of
20 concern. Threats include old-growth forest, fire exclusion, loss and alteration of quality juniper-
21 grassland habitat, and cowbird nest parasitism. The species is unlikely to occur in the affected
22 area of any SEZ due to lack of suitable habitat; however, it may occur within the affected regions
23 of the following SEZs: Afton, Mason Draw, and Red Sands (NMDGF 2010).
24
25

26 **Great Egret (*Ardea alba*)**

27

28 ESA Listing Status: Not Listed
29 BLM Listing Status: Listed as Sensitive
30 State Listing Status: Arizona Wildlife Species of Concern
31 Rarity: Arizona State Rank S1
32

33 The great 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. The great egret may occur
36 in the affected area of the following SEZs: Brenda and Gillespie.
37
38

39 **Greater Sage-Grouse (*Centrocercus urophasianus*)**

40

41 ESA Listing Status: Candidate
42 BLM Listing Status: Listed as Sensitive
43 State Listing Status: Utah Species of Concern
44 Rarity: Utah State Rank S2
45

1 The greater sage-grouse inhabits plains, foothills, and mountain valleys dominated by
2 sagebrush (*Artemisia* sp.). Lek sites are located in relatively open areas surrounded by sagebrush
3 or in areas where sagebrush density is low. Nesting usually occurs on the ground, where
4 sagebrush density is higher. Some populations may travel up to 60 mi (96 km) between summer
5 and winter habitats. The greater sage-grouse may occur in the affected area of the following
6 SEZs: Escalante Valley, Gold Point, Milford Flats South, Millers, and Wah Wah Valley.
7
8

9 **Gunnison Sage-Grouse (*Centrocercus minimus*)**

10
11 ESA Listing Status: Under Review
12 BLM Listing Status: Listed as Sensitive (Colorado)
13 State Listing Status: Not Listed
14 Rarity: Colorado State Rank S1; Colorado Species of Concern
15

16 The status of the Gunnison sage-grouse is under review by the USFWS to determine
17 whether it should be listed as endangered or threatened under the ESA (USFWS 2009c). The
18 Gunnison sage-grouse is considered a distinct species of sage-grouse on the basis of
19 morphological, genetic, behavioral, and geographical characteristics. The species is about one-
20 third smaller than the greater sage-grouse (*Centrocercus urophasianus*). The geographic range
21 for the Gunnison sage-grouse is restricted to those portions of Colorado and Utah that are south
22 of the Colorado River. The greatest concentration of this species (estimated between 2,000 and
23 3,000 birds) exists within the Gunnison Basin in southwestern Colorado. The total adult
24 (breeding) population is estimated to be fewer than 4,000 (Nature Serve 2010).
25

26 The mating behavior of sage-grouse is perhaps one of the most complex and stereotyped
27 behaviors known among birds. From mid-march to early June, males will exhibit a display on
28 leks, which are open areas that provide good visibility for acoustics and predator detection. The
29 male mating display is characterized by the male inflating its esophageal air sac in a strut
30 behavior with the wings held stiffly at either side. During this period, the air sac is evident
31 through the apteria (area of bare skin) on the male's neck. These skin patches inflate repeatedly
32 to create an acoustic and visual display to attract females. The strutting display of the Gunnison
33 sage-grouse is distinct from other sage-grouse species. During a typical strutting display,
34 Gunnison sage-grouse inflate the apteria of their necks nine times, as compared to twice for the
35 greater sage-grouse (USFWS 2009c).
36

37 Following courtship, females will select nests in tall and dense stands of shrubs—usually
38 sagebrush (*Artemisia* spp.)—from about 650 ft (200 m) to 5 mi (8 km) from the leks. Clutches
39 average seven to nine eggs that will hatch after a 27- or 28-day incubation period (American Bird
40 Conservancy 2010).
41

42 The Gunnison sage-grouse utilizes a variety of habitats throughout the year but it is
43 mostly associated with sagebrush ecosystems. Sagebrush provides shelter for nests and supports
44 diverse insect and forb communities that serve as food sources for young and adult individuals.
45 During the winter, Gunnison sage-grouse become dependent on sagebrush leaves as their sole

1 food source (American Bird Conservancy 2010). During the spring and summer months, the
2 species may also utilize healthy grasslands and riparian ecosystems.

3
4 Population declines and range contractions of the Gunnison sage-grouse are attributable
5 to a number of anthropogenic factors. As identified in the *Gunnison Sage-Grouse Conservation*
6 *Plan* (Gunnison Sage-Grouse Rangewide Steering Committee 2005), these factors were grouped
7 into three major categories that may contribute to the continued decline of the species. These
8 factors include (1) degradation in sagebrush-steppe habitat quality and composition; (2) loss or
9 fragmentation of sagebrush-steppe habitats from agricultural, energy, residential, and
10 transportation infrastructure developments; and (3) physical disturbance of individuals through
11 predation, diseases, invasive species, and recreational activities, such as hunting, bird watching,
12 and off-highway vehicle use.

13
14 The Gunnison sage-grouse may occur in the affected area of the De Tilla Gulch SEZ.

15
16
17 **Interior Least Tern (*Sterna antillarum athalassos*)**

18
19 ESA Listing Status: Endangered

20 BLM Listing Status: Not Listed

21 State Listing Status: Endangered in Colorado and New Mexico

22 Rarity: Colorado State Rank S1; New Mexico State Rank S1

23
24 The interior least tern breeds from California, South Dakota, and Maine to Chiapas and
25 the Caribbean, although the major inland population occurs in the Mississippi Basin. It winters
26 from Mexico's Pacific Coast and the U.S. Gulf Coast southward. Within New Mexico, it breeds
27 near Roswell, migrates in Eddy County, and exists in Chaves, DeBaca, and Socorro Counties.
28 Breeding habitat includes dry, flat, sparsely vegetated sandbars and gravel bars within a wide,
29 unobstructed, water-filled river channel that supports a forage fish supply, alkali flats, beaches,
30 and spits (NMDGF 2010).

31
32 Interior least terns arrive on breeding grounds from April to early June and begin to
33 establish feeding and nesting territories. During the breeding season, the terns' home range is
34 generally limited to a 2-mi (3-km) stretch of river associated with the nesting colony. Interior
35 least terns nesting at sandpits along rivers use the adjoining river as well as the sandpit lake itself
36 for foraging. Interior least terns are semi-colonial nesters that benefit from the anti-predator
37 behavior exhibited by the entire colony when the nesting territory is invaded. Nesting activity is
38 initiated after spring and early summer flows recede and dry areas on sandbars are exposed,
39 usually on higher elevations away from the water's edge. Artificially created nesting sites
40 (e.g., sand and gravel pits, dredge islands, reservoir shorelines, and power plant ash disposal
41 areas) are also used. After pair formation, both sexes make many shallow nest scrapes dispersed
42 in open, gravelly or sandy areas. After the female selects a suitable scrape, two or three eggs are
43 laid on consecutive days. If a first clutch of eggs is lost, interior least terns will re-nest up to two
44 times, each re-nesting attempt taking place at a new site. After 14 to 16 days of incubation, the
45 eggs begin to hatch on consecutive days. The nesting season ends by early August, and departure
46 from breeding areas is usually complete by early September. Following the breeding season,

1 interior least terns gather in small flocks along rivers to feed and prepare for migration.
2 Individuals are sexually mature at 1 year (NMDGF 2010).

3
4 Interior least terns are opportunistic feeders, eating minnows and other small, non-spiny
5 fish less than 4 in. (10 cm) in length, crustaceans, and insects. Chicks eat fish less than 0.6-in.
6 (1.5-cm) long (NMDGF 2010).

7
8 The interior least tern was listed as endangered in New Mexico on May 21, 1976. It was
9 federally listed as endangered on May 28, 1985 (50 FR 21784). Currently, it is also listed as
10 endangered by the states of New Mexico and Colorado, and it is ranked as S1 in both states.
11 Threats include the loss of sandbar habitat from river channelization, irrigation diversions, and
12 dam construction and disturbance from foot traffic, unleashed pets, swimmers, canoeists, and
13 off-highway vehicles. The tern may occur within the affected regions of the Red Sands SEZ
14 (NMDGF 2010).

15
16
17 **LeConte's Thrasher (*Toxostoma lecontei*)**

18
19 ESA Listing Status: Not Listed
20 BLM Listing Status: Listed as Sensitive (Nevada)
21 State Listing Status: Protected in Nevada
22 Rarity: Nevada State Rank S2; USFWS Species of Concern

23
24 The LeConte's thrasher is an uncommon year-round resident in Arizona, southern
25 California, and southern Nevada. This species inhabits saltbush-cholla scrub communities in
26 desert flats, dunes, or alluvial fans. The LeConte's thrasher may occur in the affected area of the
27 Dry Lake SEZ.

28
29
30 **Loggerhead Shrike (*Lanius ludovicianus*)**

31
32 ESA Listing Status: Not Listed
33 BLM Listing Status: Listed as Sensitive (New Mexico)
34 State Listing Status: Not Listed
35 Rarity: California Species of Concern; USFWS Species of Concern

36
37 The loggerhead shrike is a migratory bird known to occur as a year-round resident in the
38 southwestern United States. This species inhabits open country with scattered trees and shrubs,
39 such as savannas, desert shrublands, and open woodlands. Individuals are often observed
40 perching on poles, wires, or fence posts. Nesting occurs in shrubs or small trees on grasslands or
41 pasture areas. The loggerhead shrike may occur in the affected area of the Red Sands SEZ.

1 **Long-Billed Curlew (*Numenius americanus*)**

2
3 ESA Listing Status: Not Listed

4 BLM Listing Status: Listed as Sensitive

5 State Listing Status: Utah Species of Concern

6 Rarity: Colorado State Rank S2; Utah State Rank S2; Nevada State Rank S2

7
8 The long-billed curlew inhabits shortgrass grasslands near standing water. Suitable
9 migratory habitat for this species may occur anywhere in the solar project area where intermittent
10 standing water is present. The long-billed curlew may occur in the affected area of the following
11 SEZs: Escalante Valley, Milford Flats South, and Wah Wah Valley.

12
13
14 **Mountain Plover (*Charadrius montanus*)**

15
16 ESA Listing Status: Not Listed

17 BLM Listing Status: Listed as Sensitive (Colorado)

18 State Listing Status: Not Listed

19 Rarity: Utah State Rank S1; California State Rank S2; California Species of Concern;
20 Utah Species of Concern

21
22 The mountain plover inhabits prairie grasslands and arid plains and fields. It nests in
23 shortgrass prairies associated with prairie dogs, bison, and cattle. More than 50% of the global
24 population nests in the states of Colorado and New Mexico. The species may be a winter resident
25 in southern California. The mountain plover may occur in the affected area of the following
26 SEZs: Antonito Southeast, De Tilla Gulch, Fourmile East, and Los Mogotes East.

27
28
29 **Northern Aplomado Falcon (*Falco femoralis septentrionalis*)**

30
31 ESA Listing Status: Endangered

32 BLM Listing Status: Not Listed

33 State Listing Status: Endangered in New Mexico

34 Rarity: New Mexico State Rank S1

35
36 The northern aplomado falcon inhabits the desert grasslands and savannas of Latin
37 America. In the United States, the subspecies historically inhabited desert grasslands with
38 mesquite and yucca, riparian woodlands in open grasslands, and sand ridges with yuccas on the
39 coastal prairies of Texas, New Mexico, and southeastern Arizona. In general, open landscapes
40 with scattered trees and shrubs provide good habitat. Other necessary habitat components include
41 moderately low ground cover, an abundance of small to medium-sized birds, and a supply of
42 nesting platforms. There are a total of 22 grassland areas within the historical range of the
43 species in southeastern Arizona and southern New Mexico that offer suitable habitat conditions
44 for the aplomado falcon (NMDGF 2010; Nature Serve 2010).

1 Aplomado falcons prey primarily on other birds (e.g., cuckoos, doves, woodpeckers,
2 blackbirds, flycatchers, and thrushes), supplementing their diet with insects, small mammals,
3 reptiles, and amphibians (e.g., grasshoppers, butterflies, crickets, wasps, frogs, lizards, bats, and
4 rodents). Aplomado falcons do not construct their own nests and are thus dependent on nesting
5 platforms constructed by other species, such as the stick nests of Swainson’s hawks, crested
6 caracaras, and Chihuahuan ravens. In desert habitats, nest availability is determined by the
7 presence of species that build large nests, such as crows, kites, ravens, or hawks. The breeding
8 season lasts for 6 to 8 months, with most eggs laid between March and May. Clutches consist of
9 two to three eggs, and the incubation period (both parents tending) lasts 32 days. Nestlings
10 fledge after approximately 35 days and remain in the vicinity of the nest for another month
11 (Nature Serve 2010).

12
13 The northern aplomado falcon was federally listed as endangered on February 25, 1986.
14 Critical habitat has not been designated. At the time of listing, the falcon was no longer breeding
15 in the United States. Recently, however, there have been sightings of falcons in New Mexico,
16 suggesting that the subspecies is dispersing from breeding locations in Mexico back into the
17 southwestern United States.

18
19 The northern aplomado falcon previously experienced large population declines because
20 of pesticides, especially DDT applied in Mexico. It has also lost large areas of suitable habitat
21 through brush encroachment and agriculture clearing (Nature Serve 2010).

22
23 The northern Aplomado falcon may occur in the affected area of the following SEZs:
24 Afton, Mason Draw, and Red Sands.

25
26
27 **Northern Goshawk (*Accipiter gentilis*)**

28
29 ESA Listing Status: Not Listed
30 BLM Listing Status: Listed as Sensitive
31 State Listing Status: Arizona Wildlife Species of Concern; Protected in Nevada
32 Rarity: New Mexico State Rank S2; Nevada State Rank S2;
33 New Mexico Species of Concern; USFWS Species of Concern

34
35 The northern goshawk inhabits mature mountain forest and riparian zone habitats. It nests
36 in trees in mature deciduous, coniferous, and mixed forests. It forages in both heavily forested
37 and relatively open shrubland habitats. The Northern goshawk may occur in the affected area of
38 the following SEZs: Afton, Amargosa Valley, Escalante Valley, Mason Draw, Milford Flats
39 South, Red Sands, and Wah Wah Valley.

1 **Phainopepla (*Phainopepla nitens*)**

2
3 ESA Listing Status: Not Listed
4 BLM Listing Status: Listed as Sensitive (Nevada)
5 State Listing Status: Protected in Nevada
6 Rarity: Nevada State Rank S2; USFWS Species of Concern
7

8 The phainopepla occurs in the southwestern United States and Mexico in desert scrub,
9 mesquite, and pinyon-juniper woodland communities as well as desert riparian areas and
10 orchards. Nests are typically constructed in trees and shrubs from 3 to 45 ft (1 to 15 m) above the
11 ground. The phainopepla may occur in the affected area of the following SEZs: Amargosa
12 Valley, Delamar Valley, Dry Lake, and East Mormon Mountain.
13

14
15 **Prairie Falcon (*Falco mexicanus*)**

16
17 ESA Listing Status: Not Listed
18 BLM Listing Status: Listed as Sensitive (Nevada)
19 State Listing Status: Not Listed
20 Rarity: Not Listed
21

22 The prairie falcon is known to occur throughout the western United States. The species
23 occurs in open habitats in mountainous areas, sagebrush-steppe, grasslands, or cultivated areas.
24 Nests are typically constructed in well-sheltered ledges of rocky cliffs and outcrops. The prairie
25 falcon may occur in the affected area of the following SEZs: Amargosa Valley, Delamar Valley,
26 Dry Lake Valley North, Gold Point, and Millers.
27

28
29 **Short-Eared Owl (*Asio flammeus*)**

30
31 ESA Listing Status: Not Listed
32 BLM Listing Status: Listed as Sensitive
33 State Listing Status: Not Listed
34 Rarity: Utah Species of Concern; Colorado State Rank S2; Utah State Rank S2;
35 New Mexico State Rank S2
36

37 The short-eared owl inhabits grasslands, shrublands, and other open habitats. It is
38 nomadic, often selecting unique breeding sites each year, depending on local rodent densities. It
39 nests on the ground near shrubs. The short-eared owl may occur in the affected area of the
40 following SEZs: Antonito Southeast, De Tilla Gulch, Escalante Valley, Fourmile East, Los
41 Mogotes East, Milford Flats South, and Wah Wah Valley.
42
43
44

1 **Snowy Egret (*Egretta thula*)**

2
3 ESA Listing Status: Not Listed
4 BLM Listing Status: Listed as Sensitive
5 State Listing Status: Wildlife Species of Concern in Arizona
6 Rarity: Arizona State Rank S1; Colorado State Rank S2
7

8 The snowy egret is considered to be a year-round resident in the lower Colorado River
9 Valley in southwestern Arizona and southeastern California. This species is primarily associated
10 with open water areas such as marshes, lakes, ponds, and reservoirs. The snowy egret may occur
11 in the affected area of the following SEZs: Bullard Wash and Gillespie.
12
13

14 **Southwestern Willow Flycatcher (*Empidonax traillii extimus*)**

15
16 ESA Listing Status: Endangered
17 BLM Listing Status: Not Listed
18 State Listing Status: Arizona Wildlife Species of Concern; Endangered in California;
19 Endangered in Colorado; Endangered in New Mexico;
20 Protected in Nevada
21 Rarity: Arizona State Rank S1; California State Rank S1; Nevada State Rank S1;
22 Utah State Rank S1; New Mexico State Rank S2
23

24 The southwestern willow flycatcher is a subspecies of willow flycatcher that breeds in
25 southern California, southern Nevada, southern Utah, Arizona, New Mexico, western Texas, and
26 extreme northwest Mexico. It may also breed in southwestern Colorado, but nesting records are
27 lacking. All willow flycatchers are migratory.
28

29 The southwestern willow flycatcher occurs in riparian habitats along rivers, streams, or
30 other wetlands, where there are dense growths of willows, baccharis, cottonwood, buttonbush,
31 and other deciduous shrubs and trees. Flycatchers nest in thickets of trees and shrubs that are
32 approximately 13 to 23 ft (4 to 7 m) or more in height, have dense foliage from approximately 13
33 feet (7 m) above the ground, and often have a high percentage of canopy cover. The diversity of
34 nest site plant species may be low or comparatively high, and nest site vegetation may be even-
35 or uneven-aged, but it is usually dense and structurally homogeneous. Although the southwestern
36 willow flycatcher historically nested in native plant communities, and it still does so when such
37 vegetation is available, the species is now known to nest in thickets dominated by the non-native
38 species tamarisk and Russian olive. The subspecies virtually always nests near surface water or
39 saturated soil. At some nest sites, surface water may be present early in the breeding season, but
40 by late June or early July, only damp soil is present. Ultimately, a water table close enough to the
41 surface to support riparian vegetation is necessary (Nature Serve 2010).
42

43 The southwestern willow flycatcher is an insectivore. It forages within and above dense
44 riparian vegetation, taking insects on the wing or gleaning them from foliage. It also forages in
45 areas adjacent to nest sites, which may be more open. No information is available on specific
46 prey species.
47

1 Southwestern willow flycatchers arrive at breeding sites and begin singing by mid-May,
2 and they build nests in late May and early June. Birds construct a cup-shaped nest in a fork or
3 horizontal branch of a medium-sized bush or small tree, approximately 3.2 to 15 ft (1 to 4.5 m)
4 above the ground. Typically, there is dense vegetation above and around the nest. The subspecies
5 fledges young in early to mid-July. Some variations in these dates have been observed; they may
6 be related to altitude, latitude, and re-nesting.

7
8 The southwestern willow flycatcher was federally listed as endangered on February 27,
9 1995 (60 FR 10693). On July 22, 1997, approximately 599 river mi (960 km) of waterways and
10 their adjacent riparian habitats in Arizona, California, and New Mexico were designated as
11 critical habitat.

12
13 Threats to continued existence have primarily included habitat loss and degradation.
14 Extensive loss of the habitat of this subspecies has occurred through the conversion of
15 floodplains to agriculture, flood-control projects, and urban development. Other threats include
16 overgrazing and brood-parasitism by the brown-headed cowbird (Nature Serve 2010).

17
18 The southwestern willow flycatcher may occur in the affected area of the following
19 SEZs: Antonito Southeast, Bullard Wash, De Tilla Gulch, Delamar Valley, Dry Lake, Fourmile
20 East, Gillespie, and Los Mogotes East.

21
22
23 **Swainson's Hawk (*Buteo swainsoni*)**

24
25 ESA Listing Status: Not Listed
26 BLM Listing Status: Listed as Sensitive (Nevada)
27 State Listing Status: Protected in Nevada
28 Rarity: California State Rank S2; Nevada State Rank S2; USFWS Species of Concern

29
30 The Swainson's hawk occurs throughout the southwestern United States. It inhabits
31 desert, savanna, open pine-oak woodland, grassland, and cultivated habitats. Nests are typically
32 constructed in solitary trees, bushes, or small groves; sometimes the hawks nests near urban
33 areas. The Swainson's hawk may occur in the affected area of the following SEZs: Amargosa
34 Valley, Bullard Wash, Delamar Valley, Dry Lake Valley North, East Mormon Mountain, Gold
35 Point, and Millers.

36
37
38 **Western Burrowing Owl (*Athene cunicularia hypugaea*)**

39
40 ESA Listing Status: Not Listed
41 BLM Listing Status: Listed as Sensitive
42 State Listing Status: Threatened in Colorado
43 Rarity: Species of Concern in Arizona, California, New Mexico, and Utah;
44 Arizona State Rank S2; California State Rank S2; USFWS Species of Concern
45

1 The western burrowing owl is a year-round resident throughout the solar project area. It
2 forages in grasslands, shrublands, and open disturbed areas, and it nests in burrows usually
3 constructed by mammals. It forages on invertebrates and small mammals. The western
4 burrowing owl may occur in the affected area of the following SEZs: Afton, Amargosa Valley,
5 Antonito Southeast, Brenda, Bullard Wash, De Tilla Gulch, Delamar Valley, Dry Lake, Dry
6 Lake Valley North, East Mormon Mountain, Escalante Valley, Fourmile East, Gillespie, Gold
7 Point, Imperial East, Iron Mountain, Los Mogotes East, Mason Draw, Milford Flats South,
8 Millers, Pisgah, Red Sands, Riverside East, and Wah Wah Valley.

9
10
11 **Western Least Bittern (*Ixobrychus exilis hesperis*)**

12
13 ESA Listing Status: Not Listed

14 BLM Listing Status: Listed as Sensitive

15 State Listing Status: Arizona Wildlife Species of Concern; Protected in Nevada;
16 Species of Concern in California

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

18
19 The least bittern is a common summer resident in suitable habitats of the lower Colorado
20 River in southwestern California and southwestern Arizona. The species inhabits freshwater
21 marsh habitats containing dense, emergent vegetation, such as cattail (*Typha* sp.) and reeds
22 (*Phragmites* sp.). The western least bittern may occur in the affected area of the Imperial East
23 SEZ.

24
25
26 **Western Snowy Plover (*Charadrius alexandrinus nivosus*)**

27
28 ESA Listing Status: Not Listed

29 BLM Listing Status: Listed as Sensitive

30 State Listing Status: Arizona Wildlife Species of Concern; Protected in Nevada

31 Rarity: Species of Concern in Colorado; Arizona State Rank S1; Colorado State Rank S1;
32 USFWS Species of Concern

33
34 The western snowy plover breeds on alkali flats around reservoirs and sandy shorelines.
35 This species is a known summer breeder and winter resident in portions of the six-state solar
36 energy region. The western snowy plover may occur in the affected area of the following SEZs:
37 Dry Lake Valley North, Fourmile East, and Gillespie.

38
39
40 **Western Yellow-Billed Cuckoo (*Coccyzus americanus occidentalis*)**

41
42 ESA Listing Status: Candidate

43 BLM Listing Status: Not Listed

44 State Listing Status: Arizona Wildlife Species of Concern; Endangered in California;
45 Protected in Nevada

1 Rarity: California State Rank S1; Nevada State Rank S1; Utah State Rank S1;
2 New Mexico Species of Concern
3

4 The western yellow-billed cuckoo is considered by the USFWS as a Distinct Population
5 Segment (DPS) (subspecies *occidentalis*) of the yellow-billed cuckoo. Populations of the yellow-
6 billed cuckoo are more common in the central and eastern United States; the western yellow-
7 billed cuckoo DPS, however, has experienced significant population declines. This species is a
8 medium-sized, insectivorous, migratory bird species that occupies scattered, isolated habitats
9 west of the Rocky Mountains in Arizona, California, Colorado, Nevada, and New Mexico.
10

11 Typical breeding habitats for the western yellow-billed cuckoo are deciduous riparian
12 woodlands, particularly cottonwood and willow. Dense riparian understory foliage is an
13 important factor in nest site selection in some areas. Nests are commonly created in dense covers
14 of trees and shrubs. The species does not appear to select specific habitats types during the
15 nonbreeding season, as they are known to inhabit various types of forest, woodland, and shrub-
16 scrub habitats.
17

18 The USFWS determined the yellow-billed cuckoo as a candidate for federal listing under
19 the ESA of 1973 on July 25, 2001 (66 FR 38611). Primary threats to the western yellow-billed
20 cuckoo DPS include habitat destruction and pesticide application. Most habitat loss results from
21 the conversion of riparian habitats to agriculture (including livestock grazing) and water
22 development infrastructure. The spread of invasive non-native species, particularly tamarisk, has
23 also contributed to the decline of suitable breeding habitats.
24

25 The Western yellow-billed cuckoo may occur in the affected area of the following SEZs:
26 Afton, Delamar Valley, and Gillespie.
27
28

29 **White-Faced Ibis (*Plegadis chihi*)** 30

31 ESA Listing Status: Not Listed

32 BLM Listing Status: Listed as Sensitive

33 State Listing Status: Not Listed

34 Rarity: New Mexico Species of Concern; California State Rank S1;

35 Arizona State Rank S2; Colorado State Rank S2; New Mexico State Rank S2;

36 USFWS Species of Concern
37

38 The white-faced ibis is a migratory wading bird with distinct breeding and wintering
39 areas. Breeding primarily occurs in temperate areas of western North America in marshes,
40 swamps, and riverine systems. Wintering occurs in marshes, meadows, riverine systems, and
41 meadows from southern California and Arizona, to coastal Texas and Louisiana, and south to
42 Central and South America. The white-faced ibis may occur in the affected area of the following
43 SEZs: Imperial East and Red Sands.
44
45
46

1 **Yuma Clapper Rail (*Rallus longirostris yumanensis*)**

2
3 ESA Listing Status: Endangered

4 BLM Listing Status: Not Listed

5 State Listing Status: Arizona Wildlife Species of Concern; Threatened in California;
6 Protected in Nevada

7 Rarity: California State Rank S1; Nevada State Rank S1
8

9 The Yuma clapper rail is a subspecies that occurs in inland habitats in the southwestern
10 United States. Yuma clapper rails are found in shallow, freshwater marshes containing dense
11 stands of cattails and bulrushes, along the Colorado River from California, southern Nevada, and
12 Arizona south into Mexico. They also occur in dense, near-monotypic stands of cattail at the
13 Salton Sea in Imperial County, California, and in marshes and riparian habitats in western
14 Arizona and southern Nevada. Unlike other clapper rails, which are associated with tidal
15 marshes, the Yuma clapper rail occupies freshwater marshes during the breeding season. Until
16 recently, most of the population was thought to retreat to Mexico during the winter; it is now
17 estimated that more than 70% of the breeding population winters along the Lower Colorado
18 River.
19

20 The Yuma clapper rail feeds on crayfish and other crustaceans, and it is believed that the
21 abundance of food animals at a particular site is a better predictor of rail population densities
22 than is vegetation. Yuma clapper rails breed from March through July. Nests are built in three
23 major microhabitats: at the base of living clumps of cattail or bulrush, under wind-thrown
24 bulrush, or on the top of dead cattails remaining from the previous year's growth. Nesting
25 materials and cover are obtained from mature cattail/bulrush stands. Clutch size is typically six
26 to eight eggs, and most eggs hatch during the first week of June (Nature Serve 2010).
27

28 The Yuma clapper rail was federally listed as endangered on March 11, 1967
29 (USFWS 1967). Critical habitat for this subspecies has not been designated. Threats to continued
30 survival of the Yuma clapper rail include loss and degradation of habitat by activities such as
31 water projects and the draining or filling of marshes for development or agriculture. Other threats
32 to this species include catastrophic flooding, invasion of non-native plant species such as
33 tamarisk, and pollution from urban runoff, industrial discharges, and sewage effluent. Although
34 population numbers of the species appear to be stable, habitat throughout its range is not secure
35 (Nature Serve 2010).
36

37 The Yuma clapper rail may occur in the affected area of the following SEZs: Gillespie
38 and Imperial East.
39
40
41

1 **J.6.1.7 Mammals**

2
3
4 **Allen’s Big-Eared Bat (*Idionycteris phyllotis*)**

5
6 ESA Listing Status: Not Listed
7 BLM Listing Status: Listed as Sensitive
8 State Listing Status: Nevada Protected
9 Rarity: Nevada State Rank S1; Utah State Rank S2; USFWS Species of Concern

10
11 The Allen’s big-eared bat is known from isolated locations throughout the southwestern
12 United States and is considered to be a year-round resident in the East Mormon Mountain SEZ
13 region. Its habitat is primarily mountainous, wooded areas composed of ponderosa pine, pinyon-
14 juniper, Mexican woodland, and oak brush as well as cottonwood riparian woodland. The species
15 occurs within the range of Mohave Desert scrub of the low desert ranges to white fir forest
16 zones, with summer ranges occurring at higher elevations. This species roosts in caverns, rock
17 fissures, and mines. The Allen’s big-eared bat may occur in the affected area of the East Mormon
18 Mountains SEZ.

19
20
21 **Arizona Myotis (*Myotis occultus*)**

22
23 ESA Listing Status: Not Listed
24 BLM Listing Status: Listed as Sensitive
25 State Listing Status: Not Listed
26 Rarity: New Mexico Species of Concern; California State Rank S2;
27 USFWS Species of Concern

28
29 The Arizona myotis is known from extreme southeastern California and southern Arizona
30 and New Mexico, where it occurs along river lowlands and in adjacent desert mountain ranges. It
31 inhabits ponderosa pine and oak-pine woodlands in close proximity to water; it also occurs in
32 riparian forests within desert areas along the Colorado River. The Arizona myotis may occur in
33 the affected area of the following SEZs: Iron Mountain, Red Sands, and Riverside East.

34
35
36 **Big Free-Tailed Bat (*Nyctinomops macrotis*)**

37
38 ESA Listing Status: Not Listed
39 BLM Listing Status: Listed as Sensitive
40 State Listing Status: Not Listed
41 Rarity: California Species of Concern; Nevada State Rank S1; California State Rank S2;
42 New Mexico State Rank S2; Utah State Rank S2; USFWS Species of Concern

43
44 The big free-tailed bat is associated with bare rock/talus/scree, cliff, shrub desert,
45 hardwood woodland, and riparian communities. This species roosts in rock crevices on cliff
46 faces or in buildings. It forages primarily in coniferous forests and arid shrublands to feed on

1 moths. The big free-tailed bat may occur in the affected area of the following SEZs: Antonito
2 Southeast, De Tilla Gulch, Dry Lake, Fourmile East, Los Mogotes East, and Red Sands.
3
4

5 **Brazilian Free-Tailed Bat (*Tadarida brasiliensis*)**
6

7 ESA Listing Status: Not Listed
8 BLM Listing Status: Listed as Sensitive
9 State Listing Status: Protected in Nevada
10 Rarity: Not Listed
11

12 The Brazilian free-tailed bat is known from isolated locations throughout the
13 southwestern United States. The species forages in desert grassland, old field, savanna,
14 shrubland, and woodland habitats as well as in urban areas. It roosts in old buildings, caves,
15 mines, and hollow trees. The Brazilian free-tailed bat may occur in the affected area of the
16 following SEZs: Dry Lake, East Mormon Mountain, and Gold Point.
17
18

19 **California Leaf-Nosed Bat (*Macrotus californicus*)**
20

21 ESA Listing Status: Not Listed
22 BLM Listing Status: Listed as Sensitive
23 State Listing Status: Arizona Wildlife Species of Concern
24 Rarity: California State Rank S2; California Species of Concern;
25 USFWS Species of Concern
26

27 The California leaf-nosed bat (*Macrotus californicus*) is confined to lowland Sonoran
28 Desert habitats, including desert riparian, desert wash, desert scrub, desert succulent shrub, alkali
29 desert scrub, and palm oasis. Since this species neither migrates nor hibernates, it relies on the
30 availability of suitable roost sites that afford precise season-specific microclimatic conditions in
31 order to successfully exploit temperate zone deserts. Such roost sites occur almost exclusively
32 within mines or caves and have the following characteristics: They are a source of geothermal
33 heat; have a stable temperature of about 84°F (29°C); have high humidity (>50%); have no air
34 circulation; have high ceilings; and are at least 300 ft (100 m) in length. The proximal occurrence
35 of desert wash vegetation is an additional critical habitat component, because it provides
36 California leaf-nosed bats with a local source of their primary prey; this resource is necessary to
37 minimize winter foraging excursions (Nature Serve 2010; Western Bat Working Group 2010).
38

39 California leaf-nosed bats are purely insectivorous, with moths (sphingid, noctuid, and
40 cossid), butterflies, grasshoppers, and katydids making up the majority of their diet. Foraging
41 occurs close to the ground (<2 ft or <6 m), where prey items are gleaned from vegetation. The
42 sizes of the home ranges of California leaf-nosed bat populations are determined by the spatial
43 distribution of roosting and resources. Seasonally, movements between summer and winter
44 roosts are typically less than 2 mi (2.6 km), with core activity occurring up to 1 mi (1.3 km) from
45 roosts sites (CDFG 2010; Nature Serve 2010; Western Bat Working Group 2010).
46

1 California leaf-nosed bats are the most northerly representative of the family
2 Phyllostomidae (Western Bat Working Group 2010). Historically, their geographic range
3 extended across southern California, Arizona, and southern Nevada. However, studies suggest
4 that during the recent century, this species has disappeared from the coastal basins of California
5 and is currently limited to the eastern portion of its former range (CDFG 2010; Nature
6 Serve 2010; Western Bat Working Group 2010). Such rapid range contraction has been
7 attributed to roost disturbance, renewed mining in historic districts, mine closures, and
8 destruction of foraging habitat. Moreover, the restrictive roosting requirements, limited
9 distribution, and tendency to form large but relatively few roosting aggregations that are
10 characteristics of California leaf-nosed bats act to further exasperate the effects incurred by these
11 threats.

12
13 The California leaf-nosed bat was formerly a Candidate 2 (C2) species under the ESA
14 and is now considered a species of concern (nonstatutory ranking) by the USFWS.

15
16 The California leaf-nosed bat may occur in the affected area of the following SEZs:
17 Brenda, Bullard Wash, Gillespie, Imperial East, Iron Mountain, and Riverside East.

18
19
20 **Cave Myotis (*Myotis velifer*)**

21
22 ESA Listing Status: Not Listed
23 BLM Listing Status: Listed as Sensitive
24 State Listing Status: Protected in Nevada
25 Rarity: California State Rank S1; USFWS Species of Concern

26
27 The cave myotis (*Myotis velifer*) is generally within the Sonoran and Transition life
28 zones, particularly desert scrub, desert succulent shrub, desert wash, desert riparian, and pine-oak
29 communities. Creosote bush, palo verde, brittlebush, and cactus are dominant vegetative
30 components of utilized sites (Western Bat Working Group 2005). Within these communities, this
31 crevice-dwelling species requires cavern-like structures for roosting during all the stages of its
32 life cycle in which it exhibits a high level of site fidelity (CDFG 2010). Preferred roost sites are
33 typically caves; however, mines, bridges, or buildings may also be utilized if characterized as
34 having a thermal range of 46 to 52°F (8 to 11°C), a high relative humidity (>50%), and low air
35 circulation.

36
37 The diet of the cave myotis consists primarily of lepidopterans and coleopterans, but
38 weevils, antlions, and other flying insects may also be taken opportunistically. Foraging occurs
39 over dense riparian vegetation and in drier desert washes at heights of 12 to 50 ft (4 to 12 m)
40 (Western Bat Working Group 2010).

41
42 The sizes of the home ranges of cave myotis populations are determined by the spatial
43 distribution of roost sites and prey resources. Because this species tends to make extensive daily
44 movements between summer roosting areas and foraging habitat, home ranges may encompass
45 areas as large as 618 mi (1,600 km²) (AZGFD 2010).

1 The geographic distribution of the cave myotis extends from Kansas, Oklahoma, and
2 western Texas, to southern Nevada and to southeastern California (along the Colorado River
3 only), south through Mexico to the Honduras at elevations of 300 to 8,800 ft (92 to 2,684 m). In
4 California, this species has experienced significant declines as result of roost disturbance, loss of
5 riparian vegetation, and pesticides, and it is currently restricted to lowlands of the Colorado
6 River and adjacent mountain ranges (CDFG 2000).

7
8 The cave myotis was formerly a Candidate 2 (C2) species under the ESA and is now
9 considered a species of concern (nonstatutory ranking) by the USFWS.

10
11 Cave myotis populations could potentially occur in the affected areas of the following
12 SEZs: Brenda, Bullard Wash, Gillespie, and Riverside East.

13
14
15 **Dark Kangaroo Mouse (*Microdiposops megacephalus*)**

16
17 ESA Listing Status: Not Listed
18 BLM Listing Status: Listed as Sensitive
19 State Listing Status: Not Listed
20 Rarity: Utah Species of Concern; Utah State Rank S2

21
22 The dark kangaroo mouse occurs in the Great Basin region within the project area, in
23 sagebrush-dominated areas with sandy soils. Nocturnally active during warm weather, the
24 species remains in underground burrows during the day and cold winter months. The dark
25 kangaroo mouse may occur in the affected area of the following SEZs: Milford Flats South and
26 Wah Wah Valley.

27
28
29 **Desert Bighorn Sheep (*Ovis canadensis mexicana*)**

30
31 ESA Listing Status: Not Listed
32 BLM Listing Status: Not Listed
33 State Listing Status: Endangered in New Mexico
34 Rarity: New Mexico Species of Concern; New Mexico State Rank S1

35
36 The desert bighorn sheep (*Ovis canadensis mexicana*) is currently listed as threatened in
37 the state of New Mexico. It is one of several subspecies of bighorn sheep that is known to occur
38 in the southwestern United States. This subspecies is known to occur in eastern Arizona, New
39 Mexico, and Texas. Within New Mexico, desert bighorn sheep inhabit visually open, rocky,
40 desert, mountain ranges in the southern portion of the state. The species rarely uses desert
41 lowlands and valleys, but these areas may be occasionally used as movement corridors between
42 mountain ranges. The desert bighorn sheep may occur in the affected area of the following SEZs:
43 Afton and Mason Draw.

1 **Desert Valley Kangaroo Mouse (*Microdipodops megacephalus albiventer*)**

2
3 ESA Listing Status: Not Listed
4 BLM Listing Status: Listed as Sensitive
5 State Listing Status: Protected in Nevada
6 Rarity: Nevada State Rank S2; USFWS Species of Concern
7

8 The Desert Valley kangaroo mouse is endemic to central Nevada where it inhabits desert
9 areas at playa margins and in dune habitats. The Desert Valley kangaroo mouse may occur in the
10 affected area of the following SEZs: Delamar Valley and Dry Lake Valley North.
11

12
13 **Fringed Myotis (*Myotis thysanodes*)**

14
15 ESA Listing Status: Not Listed
16 BLM Listing Status: Listed as Sensitive
17 State Listing Status: Protected in Nevada
18 Rarity: Utah Species of Concern; Nevada State Rank S2; USFWS Species of Concern
19

20 The fringed myotis inhabits a wide range of habitats, including lowland riparian, desert
21 shrub, pinyon-juniper, and sagebrush habitats. Roost sites have been reported in buildings and
22 caves. This species may be a summer or year-round resident throughout the six-state solar energy
23 region. The fringed myotis may occur in the affected area of the following SEZs: Afton,
24 Amargosa Valley, Delamar Valley, Dry Lake Valley North, East Mormon Mountain, Escalante
25 Valley, Gold Point, Mason Draw, Milford Flats South, Millers, and Red Sands.
26

27
28 **Gunnison's Prairie Dog (*Cynomys gunnisoni*)**

29
30 ESA Listing Status: Candidate
31 BLM Listing Status: Not Listed
32 State Listing Status: Not Listed
33 Rarity: New Mexico State Rank S2
34

35 The Gunnison's prairie dog occurs in grasslands and shrublands in two separate range
36 portions: those that inhabit montane habitats (higher elevation, moister climate), and those that
37 inhabit prairie habitats (lower elevation, drier climate). Gunnison's prairie dogs are diurnal
38 herbivores that live in colonies and spend much of their time underground. The diet of the
39 Gunnison's prairie dog includes grasses, forbs, sedges, and shrubs. Invertebrates make up a small
40 portion of the diet. They are inactive or torpid during in severe winter weather (Nature
41 Serve 2010). Adults emerge from their burrows in March or early April. Reproduction occurs in
42 spring, but the timing of reproduction varies somewhat by latitude, elevation, and year.
43 Following birth, the young stay underground for about 1 month.
44

45 Gunnison's prairie dog colonies are often smaller than those of other species and may
46 consist of fewer than 50 individuals (NatureServe 2009). Colonial groups are organized into

1 territories that generally contain one adult male and several adult females and nonbreeding
2 juveniles. Survivorship is low. The Gunnison's prairie dog is an important prey species for
3 raptors. Range-wide, habitats occupied by the species have declined by nearly 98% between
4 1916 and the present (Nature Serve 2010).

5
6 Montane Gunnison's prairie dog populations are more vulnerable to the sylvatic plague
7 because in the montane region, colonies are fewer in number, smaller, and more scattered. These
8 factors would make it more difficult for individuals to recolonize sites that were extirpated as a
9 result of the disease (73 FR 6660). Compared to the lower-elevation prairie habitat regions,
10 moister montane areas may have more hospitable climates for fleas and, in turn, plague
11 outbreaks. Although plague outbreaks have occurred in the drier prairie portions of the
12 Gunnison's prairie dog range, populations in these habitats can recover much more quickly
13 because of the availability of nearby colonies.

14
15 Gunnison's prairie dog populations within montane habitats in central and south central
16 Colorado and north central New Mexico were listed as candidates for federal protection under
17 the ESA on February 5, 2008 (73 FR 6660). Threats to the continued existence of Gunnison's
18 prairie dog are primarily related to the spread of sylvatic plague. Sylvatic plague is a bacterial
19 disease that is generally transmitted among rodents by fleas. The disease is not native to North
20 America and has been known in the United States since 1900. The disease can severely reduce or
21 extirpate populations within a short time frame (3 to 10 years).

22
23 Gunnison prairie dog populations could potentially occur in the affected areas of the
24 following SEZs: Antonito Southeast, De Tilla Gulch, and Los Mogotes East.

25
26
27 **Kit Fox (*Vulpes macrotis*)**

28
29 ESA Listing Status: Not Listed
30 BLM Listing Status: Listed as Sensitive (Utah)
31 State Listing Status: Not Listed
32 Rarity: Not Listed
33

34 The kit fox (*Vulpes macrotis*) occurs in desert and semiarid communities, including
35 mixed-grass shrublands, shrublands, grasslands, and margins of pinyon-juniper woodlands. It
36 occurs at an elevational range of 4,800 to 6,000 ft (1,463 to 1,829 m) on sites of sandstone or
37 shale derivation with a high clay to clay-loam content and generally avoids areas with
38 gravelly substrates (Meaney et al. 2006). Diurnal den sites—because they ameliorate extreme
39 temperatures, reduce heat loads, conserve water, and protect against predators—are a critical
40 habitat component for this semi-fossorial species. As such, overlapping home ranges that are
41 620 to 2,866 ac (251 to 1,160 ha) in size are established in areas that provide adequate den site
42 availability and high densities of primary prey items, including lagomorphs, prairie dogs, and
43 kangaroo rats (Meaney et al. 2006; Nature Serve 2010).

44
45 The geographic distribution of the kit fox extends from northern Baja California, north
46 through western Texas, west of the Rocky Mountains, to southwestern Idaho and southeastern

1 Oregon, and it is in portions of California, Arizona, Nevada, Utah, New Mexico, and western
2 Colorado, where it tends to occur in small, isolated populations. Despite maintaining the majority
3 of its historical range, this species is declining in many of the states in which it occurs, including
4 Utah.

5
6 Kit fox populations could potentially occur in the affected areas of the following SEZs:
7 Escalante Valley, Milford Flats South, and Wah Wah Valley.
8
9

10 **Long-Legged Myotis (*Myotis volans*)**

11
12 ESA Listing Status: Not Listed
13 BLM Listing Status: Listed as Sensitive
14 State Listing Status: Not Listed
15 Rarity: Not Listed
16

17 The long-legged myotis primarily inhabits montane coniferous forests; it also occurs in
18 riparian and desert habitats. This species uses caves and mines as hibernacula, but its winter
19 habits are poorly known. It roosts in abandoned buildings, rock crevices, and under the bark of
20 trees. The long-legged myotis may occur in the affected area of the following SEZs: Afton and
21 Red Sands.
22
23

24 **Mohave Ground Squirrel (*Spermophilus mohavensis*)**

25
26 ESA Listing Status: Not Listed
27 BLM Listing Status: Not Listed
28 State Listing Status: Threatened in California
29 Rarity: California State Rank S2
30

31 The Mohave ground squirrel is known from the Mojave Desert in San Bernardino
32 County, California. It inhabits open desert scrub, grasslands, and Joshua tree woodlands at
33 elevations between 1,800 and 5,000 ft (500 and 1,525 m). It utilizes burrows at the bases of
34 shrubs. The Mohave ground squirrel may occur in the affected area of the Pisgah SEZ.
35
36

37 **Nelson's Bighorn Sheep (*Ovis canadensis nelsoni*)**

38
39 ESA Listing Status: Not Listed
40 BLM Listing Status: Listed as Sensitive
41 State Listing Status: Threatened in California
42 Rarity: USFWS Species of Concern
43

44 Nelson's bighorn sheep (also called desert bighorn sheep) are a subspecies of bighorn
45 sheep known to occur in the southwestern United States. This species occurs in desert mountain
46 ranges in Arizona, California, Nevada, Oregon, and Utah. Nelson's bighorn sheep primarily use

1 montane shrubland, forest, and grassland habitats, and they may utilize desert valleys as
2 corridors for travel between range habitats. Nelson's bighorn sheep may occur in the affected
3 area of the following SEZs: Amargosa Valley, Delamar Valley, Dry Lake, Dry Lake Valley
4 North, East Mormon Mountain, Gold Point, Iron Mountain, Millers, Pisgah, and Riverside East.
5
6

7 **Pahranagat Valley Montane Vole (*Microtus montanus fucosus*)**
8

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

14 The Pahranagat Valley montane vole is endemic to Lincoln County, Nevada, where it is
15 restricted to springs in the Pahranagat Valley. Within that area, isolated populations utilize mesic
16 montane and desert riparian habitat. The Pahranagat Valley montane vole may occur in the
17 affected area of the following SEZs: Delamar Valley and Dry Lake Valley North.
18
19

20 **Pale Kangaroo Mouse (*Microdipodops pallidus*)**
21

22 ESA Listing Status: Not Listed
23 BLM Listing Status: Not Listed
24 State Listing Status: Protected in Nevada
25 Rarity: Nevada State Rank S2
26

27 The pale kangaroo mouse is a rodent that is endemic to southwestern Nevada and
28 southeastern California. This species inhabits fine sands in alkali sink and desert scrub habitats
29 dominated by shadscale (*Atriplex confertifolia*) or big sagebrush (*Artemisia tridentata*). The
30 species often burrows in areas of soft, windblown sand piled at the bases of shrubs. The pale
31 kangaroo mouse may occur in the affected area of the Gold Point SEZ.
32
33

34 **Pallid Bat (*Antrozous pallidus*)**
35

36 ESA Listing Status: Not Listed
37 BLM Listing Status: Listed as Sensitive
38 State Listing Status: Protected in Nevada
39 Rarity: California Species of Concern; USFWS Species of Concern
40

41 The pallid bat (*Antrozous pallidus*) occurs in a variety of woodland, grassland, riparian,
42 wetland, and agricultural habitats but is most abundant in xeric communities, such as deserts and
43 canyon lands. Within these habitat types, this species requires rocky outcrops, cliffs, crevices,
44 mines, or buildings for roosting. Tree cavities in oak, ponderosa pine, coastal redwood, or giant
45 Sequoia also serve as roost sites. Preferred characteristics of roost sites are relatively cool and
46 stable thermal conditions and unobstructed entrances that occur high above the ground surface.

1 In addition, water resources are a critical habitat component, since pallid bats often drink
2 immediately after emergence (Nature Serve 2010; Western Bat Working Group 2010).

3
4 Pallid bats are opportunistic generalists that glean a variety of invertebrate prey—
5 including beetles, moths, and crickets—from surfaces. Foraging occurs in and among the
6 vegetation of open shrub-steppe grasslands, oak savannah grasslands, open Ponderosa pine
7 forests, talus slopes, gravel roads, lava flows, fruit orchards, and vineyards (Nature Serve 2010;
8 Western Bat Working Group 2010).

9
10 The sizes of the home ranges of pallid bat populations are determined by the spatial
11 distribution of roosting, prey, and water resources. Seasonal migration between summer ranges
12 and hibernacula as well as daily movements from night roosts and foraging areas are local,
13 ranging from 1 to 3 mi (0.5 to 2.5 km) (Nature Serve 2010; Western Bat Working Group 2010).

14
15 The geographic distribution of the pallid bat extends throughout western North America,
16 from southern British Columbia, south to Latin America, and east to Texas, at elevations of
17 6,000 to 7,000 ft (1,830 to 2,100 m). In California, this species is locally common within the
18 Great Basin, Mojave, and Sonoran Deserts. Current population trends are unknown, however,
19 because the loss of critical roost sites has resulted in a general decline in the abundance of cave-
20 dwelling bat species throughout North America, and concern over the status of pallid bat
21 populations has increased.

22
23 The pallid bat could potentially occur in the affected area of the following SEZs:
24 Amargosa Valley, Dry Lake, Gold Point, Iron Mountain, Pisgah, and Riverside East.

25
26
27 **Palm Springs Pocket Mouse (*Perognathus longimembris bangsi*)**

28
29 ESA Listing Status: Not Listed
30 BLM Listing Status: Listed as Sensitive
31 State Listing Status: Not Listed
32 Rarity: California State Rank S2

33
34 The Palm Springs pocket mouse is a pocket mouse subspecies known to occur only in
35 Riverside County within the Coachella Valley in California. This species inhabits desert scrub
36 and grassland communities on sandy soils. The Palm Springs pocket mouse may occur in the
37 affected area of the Riverside East SEZ.

38
39
40 **Pygmy Rabbit (*Brachylagus idahoensis*)**

41
42 ESA Listing Status: Not Listed
43 BLM Listing Status: Listed as Sensitive (Utah)
44 State Listing Status: Protected in Nevada
45 Rarity: Utah State Rank S2; Utah Species of Concern

1 The pygmy rabbit (*Brachylagus idahoensis*) is a sagebrush (*Artemisia* sp.) obligate,
2 restricted to sagebrush-steppe areas of the Great Basin and adjacent intermountain regions.
3 Within these sagebrush-dominated communities, individuals establish relatively small home
4 ranges encompassing an areal extent of 1.1 to 4.9 ac (2.8 to 12.0 ha). These home ranges are
5 characterized as having relatively high sagebrush cover (21–36%) and being centered around
6 burrow systems constructed on loose, alluvial soils. Together, these habitat properties serve to
7 minimize the risk of predation risk and provide adequate forage as well, since big sagebrush
8 constitutes 51–99% of their diet (Lee 2008; Nature Serve 2010).

9
10 Beyond being considered a keystone species within big sagebrush habitat, pygmy rabbits
11 are also considered to be unique among leporids, which enhances their ecological importance.
12 Distinctive behaviors include these: scurrying locomotion, emission of distress vocalization, and
13 high fossoriality (Lee 2008; Nature Serve 2010; Oliver 2004).

14
15 Historically, the geographic range of pygmy rabbits has been limited in the north to the
16 Great Basin and adjacent intermountain areas of eastern Washington and southwestern Montana,
17 and in the south to California and eastern Utah. Current studies suggest that this species has
18 suffered rapid declines over this last century, likely because of its high susceptibility to
19 anthropogenic changes, which has resulted in a patchy distribution of disjunct population
20 segments (Lee 2008; Nature Serve 2010; Oliver 2004).

21
22 The Great Basin populations of the pygmy rabbit were petitioned for listing under the
23 ESA in 2003, but no federal protective status was received. However, Columbia populations in
24 the state of Washington are listed as endangered under the ESA (Oliver 2004).

25
26 The pygmy rabbit could potentially occur in the affected areas of the following SEZs:
27 Dry Lake Valley North, Escalante Valley, Milford Flats South, and Wah Wah Valley.

28 29 30 **Silver-Haired Bat (*Lasionycteris noctivagans*)**

31
32 ESA Listing Status: Not Listed
33 BLM Listing Status: Listed as Sensitive
34 State Listing Status: Not Listed
35 Rarity: USFWS Species of Concern

36
37 The silver-haired bat is known from forested areas at high elevations of 1,600 to 8,500 ft
38 (488 to 2,590 m), composed of aspen, cottonwood, white fir, pinyon-juniper, subalpine fir,
39 willow, and spruce communities. Roost and nursery sites occur in tree foliage or cavities or
40 under loose bark. This species rarely hibernates in caves. The silver-haired bat may occur in the
41 affected area of the following SEZs: Delamar Valley, Dry Lake, East Mormon Mountain, and
42 Gold Point.

1 **Spotted Bat (*Euderma maculatum*)**

2
3 ESA Listing Status: Not Listed

4 BLM Listing Status: Listed as Sensitive

5 State Listing Status: Protected in Nevada; Threatened in New Mexico

6 Rarity: California State Rank S2; Colorado State Rank S2; New Mexico State Rank S2;
7 Utah State Rank S2; Utah Species of Concern; UFWS Species of Concern

8
9 The spotted bat (*Euderma maculatum*) occurs in a wide variety of arid habitat types,
10 including desert shrub habitat, subalpine meadows, pinyon juniper woodlands, cliffs, riparian
11 areas, and coniferous forests. Black oak (*Quercus velutina*), ponderosa pine, incense cedar
12 (*Calocedrus decurrens*), giant sequoia (*Sequoiadendron giganteum*), red fir (*Abies magnifica*),
13 lodgepole pine (*Pinus contorta*), and white fir are common vegetative associations of utilized
14 sites. Within these communities, this species requires rocky cliff features for roosting during all
15 stages of its life cycle. It exhibits a high level of site fidelity. Roost sites typically occur in
16 crevices of high, steep, cliffs composed of granite, basalt, limestone, sandstone, or other
17 sedimentary rock; site selection appears to be determined by its thermal conditions and
18 protective ability. In addition, water resources in the form of rivers, lakes, marshes, or man-made
19 bodies of water are another critical habitat component, since spotted bats are highly susceptible
20 to water loss (Luce and Keinath 2007; Nature Serve 2010; Western Bat Working Group 2010).

21
22 Spotted bats are lepidopteran specialists, with more than 97% of their diet consisting of
23 moths (Luce and Keinath 2007). Foraging occurs in the open-air space along linear landscape
24 elements within woodlands, canopy gaps, stream corridors, and edges of riparian zones.

25
26 The sizes of the home ranges of spotted bat populations are determined by the spatial
27 distribution of roosting, prey, and water resources. The migratory behavior of this species is
28 restricted to daily movements of 6 to 24 mi (10 to 38.5 km) between roost sites and foraging
29 habitat, since both the hibernating range and summer range occur within the same area (Luce and
30 Keinath 2007).

31
32 The spotted bat is widely distributed across western North America, from the southern
33 Canadian province of British Columbia; south through eastern Oregon, Idaho, south central
34 Montana, central and western Wyoming, western Colorado and Nevada; to southern California,
35 southwestern Arizona, New Mexico and west Texas; to central Mexico at elevations of 187 ft
36 below sea level to 9,800 ft (-57 to 3,000 m). Within its range, this species occurs at low densities
37 as localized subpopulations; thus, both its distribution and its abundance are constrained by the
38 availability of suitable roost sites (Luce and Keinath 2007; Nature Serve 2010; Western Bat
39 Working Group 2010).

40
41 The spotted bat was formerly a candidate species under the ESA until the classification
42 system was modified and subsequently removed from the list. Currently, this species is
43 considered a species of concern (nonstatutory ranking) by the USFWS.

44
45 The spotted bat could potentially occur in the affected areas of the following SEZs:
46 Amargosa Valley, Antonito Southeast, De Tilla Gulch, Delamar Valley, Dry Lake, Dry Lake

1 Valley North, Escalante Valley, Gold Point, Los Mogotes East, Milford Flats South, Millers,
2 Pisgah, Red Sands, Riverside East, and Wah Wah Valley.

3
4
5 **Townsend's Big-Eared Bat (*Corynorhinus townsendii*)**

6
7 ESA Listing Status: Not Listed

8 BLM Listing Status: Listed as Sensitive

9 State Listing Status: Protected in Nevada

10 Rarity: California State Rank S2; Colorado State Rank S2; Nevada State Rank S2;
11 California, Colorado, Utah, and USFWS Species of Concern

12
13 The Townsend's big-eared bat (*Corynorhinus townsendii*) is widespread throughout the
14 western United States and occurs in each of the six states in the solar PEIS region. The pale
15 Townsend's big-eared bat (*C. t. pallescens*), a subspecies of the Townsend's big-eared bat,
16 occurs primarily in Colorado and New Mexico. The Townsend's big-eared bat is generally
17 associated with dry upland habitats, particularly desert scrub, mixed conifer forest, and piñon-
18 juniper forest habitat, but it will also utilize mesic coniferous and deciduous forests. Within these
19 communities, this species requires spacious, cavern-like structures for roosting during all stages
20 of its life cycle, in which it exhibits a high level of site fidelity. Limestone caves, mines, lava
21 tubes, bridges, or buildings may serve as such roosting structures. Roosting site selection seems
22 to be determined by a combination of the site's internal complexity, dimensions, and opening
23 aperture, since these features regulate and maintain the temperature and humidity. Preferred
24 structural characteristics of maternal roosts include an internal thermal range of 64 to 86°F (18 to
25 30°C) and an entrance with a diameter of at least 6 by 12 in. (15 by 31 cm) occurring at a height
26 of 8 to 16 ft (2.4 to 4.9 m); whereas hibernacula have a thermal range of 30.2 to 52.0°F (-1.0 to
27 11.2 °C), moderate airflow, and low disturbance (CDFG 2010; Nature Serve 2010; Western Bat
28 Working Group 2010).

29
30 Townsend's big-eared bats are lepidopteran specialists, with more than 90% of their diet
31 consisting of moths. Foraging occurs along linear landscape elements within woodlands, canopy
32 gaps, stream corridors, and edges of riparian zones dominated by Douglas-fir, California bay,
33 and willow species, where the bats glean insects from vegetation. Such habitat areas also provide
34 a critical source of drinking water (CDFG 2010; Nature Serve 2010; Western Bat Working
35 Group 2010).

36
37 The sizes of the home ranges of Townsend's big-eared bat populations are determined by
38 the spatial distribution of roosting, prey, and water resources. Seasonally, movements between
39 summer roosting areas to hibernacula range from 2 to 40 mi (3.1 to 64 km), whereas in summer
40 areas, which encompass a roosting and foraging habitat, migratory movements may extend as far
41 as 6.5 mi (10.5 km) from roost sites.

42
43 The geographic distribution of the Townsend's big-eared bat extends from the Pacific
44 Coast east to Nevada and Idaho and north from central Mexico to southern British Columbia and
45 at elevations of 4,501 to 10,459 ft (1,372 to 3,188 m). Within its range, this species is apparently
46 not very abundant; such rarity likely results from the limited availability of suitable roosting

1 habitat. Disturbance to, as well as loss of, this critical habitat component has led to rapid declines
2 throughout the western United States (CDFG 2010; Nature Serve 2010; Western Bat Working
3 Group 2010).

4
5 The Townsend's big-eared bat was formerly a Candidate 2 (C2) species under the ESA,
6 and it is now considered a species of concern (nonstatutory ranking) by the USFWS.

7
8 The Townsend's big-eared bat could potentially occur in the affected areas of the
9 following SEZs: Afton, Amargosa Valley, Antonito Southeast, Brenda, Bullard Wash, De Tilla
10 Gulch, Delamar Valley, Dry Lake, East Mormon Mountain, Escalante Valley, Fourmile East,
11 Gold Point, Imperial East, Iron Mountain, Los Mogotes East, Mason Draw, Milford Flats South,
12 Millers, Pisgah, Red Sands, Riverside East, and Wah Wah Valley.

13 14 15 **Utah Prairie Dog (*Cynomys parvidens*)**

16
17 ESA Listing Status: Threatened
18 BLM Listing Status: Not Listed
19 State Listing Status: Not Listed
20 Rarity: Utah State Rank S1

21
22 The Utah prairie dog is endemic to southwestern Utah, where it occurs in grasslands,
23 level mountain valleys, and areas with deep, well-drained soils and low-growing vegetation that
24 allows for good visibility. It is one of three prairie dog species in the state of Utah. Utah prairie
25 dogs are diurnal herbivores that live in colonies and spend much of their time underground. They
26 are inactive or torpid in severe winter weather. Adults emerge from mid-March to early April.
27 Breeding occurs in the spring, and young emerge from the burrows during May and early June.
28 Adults are often dormant from mid-July to mid-August and are not often seen above ground
29 during this period. Juveniles enter dormancy during October and November (Nature Serve 2010;
30 USFWS 2010e).

31
32 The Utah prairie dog feeds primarily on grasses and various seeds and flowers of shrubs
33 and insects when available. Common plant species consumed include alfalfa, leafy aster,
34 European glorybind, and wild buckwheat seeds. The size of the home range of the Utah prairie
35 dog varies, depending on the quality of the habitat, from 3 to 20 ac (1.2 to 8.2 ha). Available
36 habitat for the Utah prairie dog has declined from an estimated 448,000 ac (1,813 km²) to less
37 than 7,000 ac (28 km²) at the present time (Nature Serve 2010; USFWS 2010e).

38
39 The size of its population has varied considerably during historic times. In 1920, before
40 programs to control the Utah prairie dog, its total population was estimated at 95,000. Shooting
41 and poisoning of the species by ranchers (and likely periodic reductions from the plague) led to a
42 decrease in the size of the population; it was estimated to be about 3,700 by 1984. By the spring
43 of 1989, the adult population reached 9,200. The USFWS, in its report to Congress, reported that
44 at this size, the population was considered as being at risk of a crash from a plague outbreak
45 (Nature Serve 2010; USFWS 2010e).

1 The Utah prairie dog was first listed as federally endangered on June 4, 1973
2 (USFWS 1973). In 1984, it was reclassified as threatened by the USFWS (USFWS 1984b). A
3 recovery plan that was prepared in 1991 and revised in 2010 (USFWS 2010e) described the
4 current extent of the existing populations and laid out management goals for ensuring the
5 continued survival of the species. A major goal was to improve the chances of long-term survival
6 of the species in the following areas: West Desert in southern Beaver and Iron Counties;
7 Paunsaugunt in western Garfield County, eastern Iron County, and extreme northwestern Kane
8 County; and the Awapa Plateau, which extends from Sevier County southward through western
9 Wayne and Piute Counties into northern Garfield County. No updated information on the
10 population sizes or the success and locations of transplanted populations has been found. The
11 recovery plan also described plans to transplant Utah prairie dogs to unoccupied habitats, and it
12 defined procedures for monitoring the transplants.

13
14 The Utah prairie dog could potentially occur in the affected areas of the following SEZs:
15 Escalante Valley, Milford Flats South, and Wah Wah Valley.

16 17 18 **Western Mastiff Bat (*Eumops perotis californicus*)**

19
20 ESA Listing Status: Not Listed

21 BLM Listing Status: Listed as Sensitive (California and Nevada)

22 State Listing Status: Protected in Nevada

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

24
25 The western mastiff bat (*Eumops perotis californicus*) is the largest native bat in the
26 United States. This cliff-dwelling species occurs in a wide variety of open, semiarid to arid
27 habitats, including conifer and deciduous woodlands, coastal scrub, annual and perennial
28 grasslands, palm oases, chaparral, desert scrub, and urban locations of the Upper and Lower
29 Sonoran zone. Low-growing California buckwheat (*Eriogonum fasciculatum*), greasewood
30 (*Adenostoma fasciculatum*), black sage (*Salvia mellifera*), white sage (*Salvia apiana*), and
31 coastal sagebrush (*Artemisia californica*) are common vegetative components of utilized sites.
32 Within these communities, the western mastiff bat requires rocky cliffs or outcrops for roosting.
33 Roosting site selection is based on vegetative structure as well as entrance height, orientation,
34 and aperture. Preferred roost sites are characterized as having the following features: (1) little
35 vegetation; (2) a clear, vertical drop of at least 9.8 ft (3 m) from the entrance; (3) entrances with
36 a bottom access that are oriented horizontally and face downward; and (4) an aperture of 10 by
37 6 in. (25 by 15 cm); all of these accommodate specific flight requirements. These diurnal refugia
38 typically occur in deep crevices that are 12 to 24 in. (30 to 60 cm) in width within granitic rocks
39 and consolidated sandstone substrates. In addition, water resources in the form of large bodies of
40 water longer than 100 ft (30 m) are another critical habitat component, since western mastiff bats
41 are highly susceptible to water loss (CDFG 2010; Nature Serve 2010; Western Bat Working
42 Group 2010).

43
44 Western mastiff bats are insectivorous, feeding on small to large insects of soft to
45 intermediate hardness characterized as having a low and weak flight pattern. Foraging occurs
46 near ground level within the open-air space along linear landscape elements within woodlands,

1 canopy gaps, stream corridors, and edges of riparian zones (CDFG 2010; Nature Serve 2010;
2 Western Bat Working Group 2010).

3
4 The western mastiff bat exhibits nocturnal activity year-round. Unlike most molossids,
5 this species is nonmigratory; the migratory behavior of this species is restricted to daily
6 movements of 6 to 15 mi (10 to 25 km) between roost sites and foraging habitat as well as
7 alternate day roosts.

8
9 The geographic distribution of the western mastiff bat extends from central Mexico
10 across the southwestern United States, including southern California, southern Nevada, Arizona,
11 southern New Mexico, and western Texas, at elevations of 197 ft below sea level to 1,230 ft (–60
12 to 375 m). Within its range, it has experienced severe declines as a result of the loss and
13 disturbance of roost sites, pest control operations, and grazing and pesticide applications in
14 foraging areas (Nature Serve 2010; Western Bat Working Group 2010).

15
16 The western mastiff bat could potentially occur in the affected area of the following
17 SEZs: Dry Lake, Imperial East, Iron Mountain, Pisgah, and Riverside East.

18
19
20 **Western Red Bat (*Lasiurus blossevillii*)**

21
22 ESA Listing Status: Not Listed
23 BLM Listing Status: Listed as Sensitive
24 State Listing Status: Arizona Wildlife Species of Concern; Protected in Nevada
25 Rarity: Nevada State Rank S1; Utah State Rank S1; New Mexico State Rank S2;
26 USFWS Species of Concern

27
28 The western red bat is an uncommon year-round resident in the southwestern United
29 States. It forages in riparian and other wooded areas. It roosts primarily in cottonwood trees
30 along riparian areas and in fruit orchards. The western red bat may occur in the affected area of
31 the following SEZs: Afton, Bullard Wash, Gillespie, and Mason Draw.

32
33
34 **Western Small-Footed Myotis (*Myotis ciliolabrum*)**

35
36 ESA Listing Status: Not Listed
37 BLM Listing Status: Listed as Sensitive
38 State Listing Status: Not Listed
39 Rarity: California State Rank S2; USFWS Species of Concern

40
41 The western small-footed myotis (*Corynorhinus townsendii*) is generally associated with
42 semiarid to arid upland habitats, particularly desert scrub, grasslands, sagebrush steppe, pinyon-
43 juniper forests, and pine-fir forests, but it prefers more mesic areas with increasing elevation.
44 Within these communities, this species requires the availability of suitable roost sites. Crevices
45 and cracks of canyon walls serve as day roosts, whereas limestone caves and mines are
46 commonly utilized for hibernation. A combination of internal depth, dimensions, and opening

1 aperture appears to determine the roost sites selected by western small-footed myotis, because
2 these features regulate and maintain temperature and humidity. Preferred structural
3 characteristics of roosts include an internal thermal range of 79 to 84°F (26 to 29°C), high
4 humidity, an average entrance diameter of 1.4 in. (3.5 cm), and a shallow depth ranging from
5 1 to 8 in. (2.5 to 20.5 cm). In addition, water resources are a critical habitat component, because
6 individuals often drink immediately after emergence (CDFG 2010; Nature Serve 2010).

7
8 The western small-footed myotis is an aerial feeder that preys on a variety of flying
9 insects, particularly Lepidoptera. Foraging occurs along woodland margins or over water bodies
10 at a range of 3 ft (1 m) above ground level to treetop height. Such habitat areas also provide a
11 critical source of drinking water.

12
13 The sizes of the home ranges of western small-footed myotis populations are determined
14 by the spatial distribution of roosting, prey, and water resources. Seasonal migration between
15 summer ranges and hibernacula, as well as daily movements from day roosts and foraging areas,
16 are local, since summer and winter ranges apparently coincide (CDFG 2010).

17
18 The western small-footed myotis inhabits most of western North America, where its
19 geographic distribution extends from the southwestern Canada to central Mexico. In California,
20 it occurs along the southern coast as well as along the Sierra Nevada at elevations from sea level
21 to 8,900 ft (0 to 2,700 m).

22
23 The western small-footed myotis could potentially occur in the affected area of the
24 following SEZs: Afton, Amargosa Valley, Delamar Valley, Dry Lake, Dry Lake Valley North,
25 East Mormon Mountain, Gold Point, Mason Draw, Millers, Red Sands, and Riverside East.

26 27 28 **Western Yellow Bat (*Lasiurus xanthinus*)**

29
30 ESA Listing Status: Not Listed

31 BLM Listing Status: Listed as Sensitive

32 State Listing Status: Arizona Wildlife Species of Concern

33 Rarity: Arizona State Rank S2; California Species of Concern

34
35 The Western yellow bat (*Lasiurus xanthinus*) occurs in a variety of habitat types
36 throughout its range, from dry tropical forests to semi-tropical wet forests. This species is
37 especially associated with Washington fan palm trees (*Washingtonia filifera*), because they
38 provide critical roosting sites for this foliage rooster. However, sites composed of other broad-
39 leaved, deciduous species (e.g., sycamores, hackberries, and cottonwoods) are also utilized.
40 Roost sites are almost exclusively in the skirts of palm trees, where the dense frond cover
41 modifies the microclimate and protects individuals from severe weather and predators
42 (AZGFD 2010; Nature Serve 2010; Western Bat Working Group 2010).

43
44 Western yellow bats are insectivorous, feeding on a variety of medium-sized, night-flying
45 Hymenoptera, Dipterans, Lepidoptera, and Coleoptera. Foraging occurs above water features

1 within open grassland, scrub, and canyon and riparian locations (Nature Serve 2010; Western
2 Bat Working Group 2010).

3
4 The distribution of the western yellow bat is primarily in Mexico and Central America,
5 with its range restricted to the southern portions of California, Arizona, New Mexico, and
6 possibly southwestern Texas at elevations of 550 to 6,000 ft (168 to 1,830 m).

7
8 The western yellow bat could potentially occur in the affected areas of the following
9 SEZs: Brenda, Bullard Wash, Gillespie, and Riverside East.

10
11
12 **Yuma Myotis (*Myotis yumanensis*)**

13
14 ESA Listing Status: Not Listed

15 BLM Listing Status: Listed as Sensitive

16 State Listing Status: Not Listed

17 Rarity: USFWS Species of Concern

18
19 The Yuma myotis is a widespread, year-round resident throughout much of the
20 southwestern United States. It is uncommon in the Mojave and Sonoran Desert regions, except
21 for mountain ranges bordering the Colorado River and the San Bernardino Mountains. It prefers
22 montane forest habitats at elevations between 2,000 and 8,000 ft (600 and 2,400 m). It roosts in
23 buildings, mines, caves, and crevices. The Yuma myotis may occur in the affected area of the
24 following SEZs: Antonito Southeast, Bullard Wash, and Los Mogotes East.

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