III.7 BIOLOGICAL RESOURCES

The Desert Renewable Energy Conservation Plan (DRECP) Baseline Biology Report (included as Appendix Q to this document) describes the existing biological resources and conditions found in the DRECP Plan Area. The description of biological resources provided in this chapter summarizes information from the Baseline Biology Report and serves as the affected environment/existing setting for biological resources. Citations of data sources are generally provided as they occur in the Baseline Biology Report (Appendix Q).

This chapter is intended to provide an overview of the biological resources in the DRECP Plan Area and serves as a foundation for the analysis of the DRECP's effects on biological resources described in Volume IV, Environmental Consequences/Effects Analysis, of this document. This chapter therefore provides a summary of the detailed description of data sources, methods used to develop the existing biological/ecological setting, and a description of the baseline biological conditions in the DRECP Plan Area presented in the Baseline Biology Report.[1]

There are many existing renewable energy projects within the DRECP Plan Area (shown on Figures III.1-2A and III.1-2B). The DRECP would allow permitting of up to 20,000 megawatts (MW) of renewable energy projects, in addition to these existing projects.

III.7.1 Regulatory Setting

Federal Endangered Species Act. The Endangered Species Act (ESA) of 1973 (16 U.S.C. 1531–1544), as amended, protects federally listed threatened and endangered wildlife species from unlawful take. Under the ESA, the term "threatened species" is defined as "any species which is likely to become endangered within the foreseeable future throughout all or a significant portion of its range" (16 U.S.C. 1532, Definitions). The term "endangered species" is defined as "any species which is in danger of extinction throughout all or a significant portion of its range" (16 U.S.C. 1532, Definitions). As part of implementing the ESA, the U.S. Fish and Wildlife Service (USFWS) also maintains a list candidate species for listing as threatened or endangered that includes "those species for which the Service has on file sufficient information on biological vulnerability and

[1] Rounding of data was applied to raw values to avoid false precision when presenting calculated values. However, in presenting rounded values there were tradeoffs. Numerical data presented and analyzed in this volume comes from a variety of different sources with varying levels of precision in the data. For presentation purposes, the following general rounding rules were applied: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10. Each value, including the totals and sub-totals, was independently rounded directly from the underlying source data. However, because totals and sub-totals were independently rounded they may not be the sum of the other constituent lower level table values.

threat(s) to support issuance of a proposed rule to list but issuance of the proposed rule is precluded" (75 FR 69222–69294).

Section 9 of the ESA prohibits the take of threatened and endangered wildlife species. "Take" is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Harass is defined as "an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering." Harm is defined as "an act which actually kills or injures wildlife. Such acts may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering." Thus, take can occur as a consequence of the loss of habitat resulting from development, land use activities, and water use, as well as the discretionary programs that permit these activities.

An incidental take permit process under Section 10(a)(1)(B) of the ESA authorizes the taking of federally listed wildlife species if such taking is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Section 10(a)(2)(A) of the ESA requires an applicant for an incidental take permit to submit a Habitat Conservation Plan (HCP) that specifies, among other things, the impacts likely to result from the taking, as well as the measures the permit applicant will undertake, to minimize and mitigate such impacts.

Section 7 of the ESA requires federal agencies to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of listed wildlife or plant species or destroy or adversely modify their critical habitat. When a federal agency action, such as issuance of a permit or grant of right-of-way, may adversely affect a federally listed species, the federal agency initiates formal consultation with the USFWS. Consultation results in a biological opinion in which the USFWS determines whether the proposed action is likely to jeopardize the continued existence of a listed species or result in destruction or adverse modification of designated critical habitat for a species. If the determination is affirmative, the USFWS recommends reasonable and prudent alternatives to the proposed action, if any are identifiable, that would reduce the level of impact on no jeopardy/no adverse modification of critical habitat. As appropriate, a biological opinion includes an incidental take statement that exempts the anticipated level of incidental take resulting from the activities evaluated in the biological opinion from Section 9 take prohibition.

Migratory Bird Treaty Act. The Migratory Bird Treaty Act (MBTA) of 1918, as amended (16 U.S.C. 703-712), is the domestic law that affirms, or implements, the United States' commitment to four international conventions (with Canada, Japan, Mexico, and Russia) for the protection of a shared migratory bird resource. Each of the conventions protect selected species of birds common to both countries (that is, they occur in both countries at some point

during their annual life cycle). The MBTA protects migratory birds and their nests, eggs, young, and parts from possession, sale, purchase, barter, transport, import, export, and take. For purposes of the MBTA, take is defined as "to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect" (50 CFR 10.12). It is a strict liability statute wherein proof of intent is not an element of a taking violation. The MBTA applies to migratory birds identified in 50 Code Federal Regulations (CFR) 10.13. Generally speaking, the MBTA protects all birds occurring in the United States except for house (English) sparrow (*Passer domesticus*), European starlings (*Sturnus vulgaris*), rock doves (pigeons; *Columba livia*), any recently listed unprotected species in the *Federal Register*, and nonmigratory upland game birds. The USFWS implements and enforces the MBTA. For species listed under both the ESA and MBTA, USFWS has the authority to authorize incidental take with special terms and conditions under Section 10(a)(1)(B) of the ESA and have this permit also serve as a Special Purpose Permit under 50 CFR 2I.27 of the MBTA. Special Purpose Permits are required in the event that an action would take, possess, or involve the sale or transport of birds protected by the MBTA. The DRECP's General Conservation Plan (GCP) element would consider the Draft DRECP and EIR/EIS when deciding how to incorporate an MBTA Special Purpose Permit into any 10(a)(1)(B) permit for ESA-listed species also protected by the MBTA. If any Section 10(a)(1)(B) permit is issued, any such take would not be in violation of the MBTA.

Bald and Golden Eagle Protection Act of 1940, as Amended. The Bald and Golden Eagle Protection Act (Eagle Act) (16 U.S.C. 668–668d), enacted in 1940, and as amended, prohibits anyone, without a permit issued by the USFWS, from "taking" bald and golden eagles including their parts, nests, or eggs. The Eagle Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb." For purposes of these guidelines, "disturb" means "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

Clean Water Act. The U.S. Army Corps of Engineers regulates the discharge of dredged and/or fill material into waters of the United States under Section 404 of the federal Clean Water Act. The term "waters of the United States" is generally defined to include navigable waters as well as other waters (such as streams and seeps) and wetlands that meet applicable regulatory criteria.

Executive Order 11990 Protection of Wetlands. The basic requirement of Executive Order 11990 is that federal agencies avoid construction or management practices that would adversely affect wetlands unless that agency finds that (1) there is no practicable alternative, and (2) the proposed action includes all practicable measures to minimize

harm to the wetlands. Executive Order 11990 directs all federal agencies to minimize the destruction, loss, or degradation of wetlands, and preserve and enhance the natural beneficial values of wetlands in the conduct of the agency's responsibilities for (1) acquiring, managing, and disposing of federal lands and facilities; (2) providing federally undertaken, financed, or assisted construction and improvements; and (3) conducting federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities.

Fish and Wildlife Coordination Act. The Fish and Wildlife Coordination Act authorizes the secretaries of Agriculture and Commerce to provide assistance to and cooperate with federal and state agencies to protect, rear, stock, and increase the supply of game and fur-bearing animals, as well as to study the effects of domestic sewage, trade wastes, and other polluting substances on wildlife. The act also directs the Bureau of Fisheries to use impounded waters for fish-culture stations and migratory-bird resting and nesting areas and requires consultation with the Bureau of Fisheries prior to the construction of any new dams to provide for fish migration. In addition, this act authorizes the preparation of plans to protect wildlife resources, the completion of wildlife surveys on public lands, and the acceptance by the federal agencies of funds or lands for related purposes provided that land donations received the consent of the state in which they are located.

The amendments enacted in 1946 require consultation with the USFWS and the fish and wildlife agencies of states where the "waters of any stream or other body of water are proposed or authorized, permitted or licensed to be impounded, diverted . . . or otherwise controlled or modified" by any agency under a federal permit or license. Consultation is to be undertaken for the purpose of "preventing loss of and damage to wildlife resources." The amendments authorize the transfer of funds to the USFWS to conduct related investigations. Land made available to the Secretary of Interior for wildlife protection purposes is to be managed directly by or under cooperative agreements with the Secretary of Interior. General plans may also include the transfer of project lands to a state for management. The amendments authorized appropriations for related purposes. The amendments also titled the law as the Fish and Wildlife Coordination Act and expanded the instances in which diversions or modifications to water bodies require consultation with USFWS. These amendments permitted lands valuable to the Migratory Bird Management Program to be made available to the state agency exercising control over wildlife resources.

Bureau of Land Management Policy. Section I.2.1 describes the Federal Land Policy and Management Act and the associated California Desert Conservation Area Plan (CDCA). The Bureau of Land Management (BLM) also manages special-status species in accordance with *Manual 6840, Special-Status Species Management*. The manual establishes policy to manage species listed or proposed for listing pursuant to the ESA and BLM Special-Status Species which are found on BLM-administered lands. The BLM special-status species policy aims to

conserve and/or recover listed species and their habitats and to initiate proactive conservation measures that reduce or eliminate threats to BLM Special-Status Species to prevent them from requiring listing in the future (BLM 2008). A supplement to this manual, *BLM Manual Handbook 6840-1 Special Status Plant Management,* focuses on management of BLM Special-Status plants. It includes details on survey coverage methods, in relation to likelihood of species occurring and intensity of impact that should guide plant surveys on BLM lands. Most of it reflects standardized survey practices for adequate plant surveys. The supplement also provides an overview of qualitative monitoring (e.g., photoplots) and quantitative monitoring (e.g., transects), but refers to *BLM Technical Reference 1730-1, Measuring and Monitoring Plan Populations*, for more detail (BLM 2012).

III.7.2 Physical Conditions

The physical conditions in the DRECP Plan Area, which provide the context for the ecological processes discussion in Section III.7.3, include ecoregions, climate, geomorphology, hydrology, topography, and regional geology and associated processes.

III.7.2.1 Ecoregions

The U.S. Forest Service (USFS) defined ecological sections and subregions (i.e., ecoregions) within California as part of the USFS National Hierarchical Framework adopted by the USFS Ecological Classification and Mapping Task Team (USFS 1997). The DRECP Plan Area is divided into the following ecoregion sections: Colorado Desert, Mojave Desert, Sierra Nevada, Sonoran Desert, and Southern California Mountains and Valleys. These sections are further divided into 33 ecoregional subsections listed in Table 2-1 and shown on Figure 2-1 of the DRECP Baseline Biology Report (Appendix Q). The 33 ecoregional subsections were consolidated into ten ecoregion subareas used for the DRECP.

III.7.2.2 Climate

In the desert regions of the DRECP Plan Area, the climate is generally characterized by hot, dry summers and mild to cold winters. Rainfall events originate from winter frontal storms off the Pacific Ocean and occasional summer convective monsoons, but these sources are variable in different regions of the desert. Winter storms generally bring widespread, longer-duration, low-intensity rainfall, particularly in the western desert regions, whereas summer monsoons generate isolated, short, high-intensity rainfall in the eastern desert regions (Lichvar and McColley 2008). Climatic conditions vary between the Mojave and Colorado/Sonoran deserts, especially with respect to temperature and precipitation. Annual precipitation ranges from approximately 3 inches in the low deserts (such as the Colorado/Sonoran) to approximately 8 inches in the high deserts and desert ranges (such as the Mojave) while annual temperature ranges from approximately 60 to 75 degrees Fahrenheit (°F) in the low deserts to approximately 45°F to 77°F in the high deserts and

desert ranges (USFS 1997). Climate in the DRECP Plan Area is discussed in greater detail in Chapter III.3, Meteorology and Climate Change. See also the introduction to the ecological context of the DRECP Plan Area (Section III.7.4) for a discussion of the influence of climate on ecological conditions.

III.7.2.3 Geomorphology

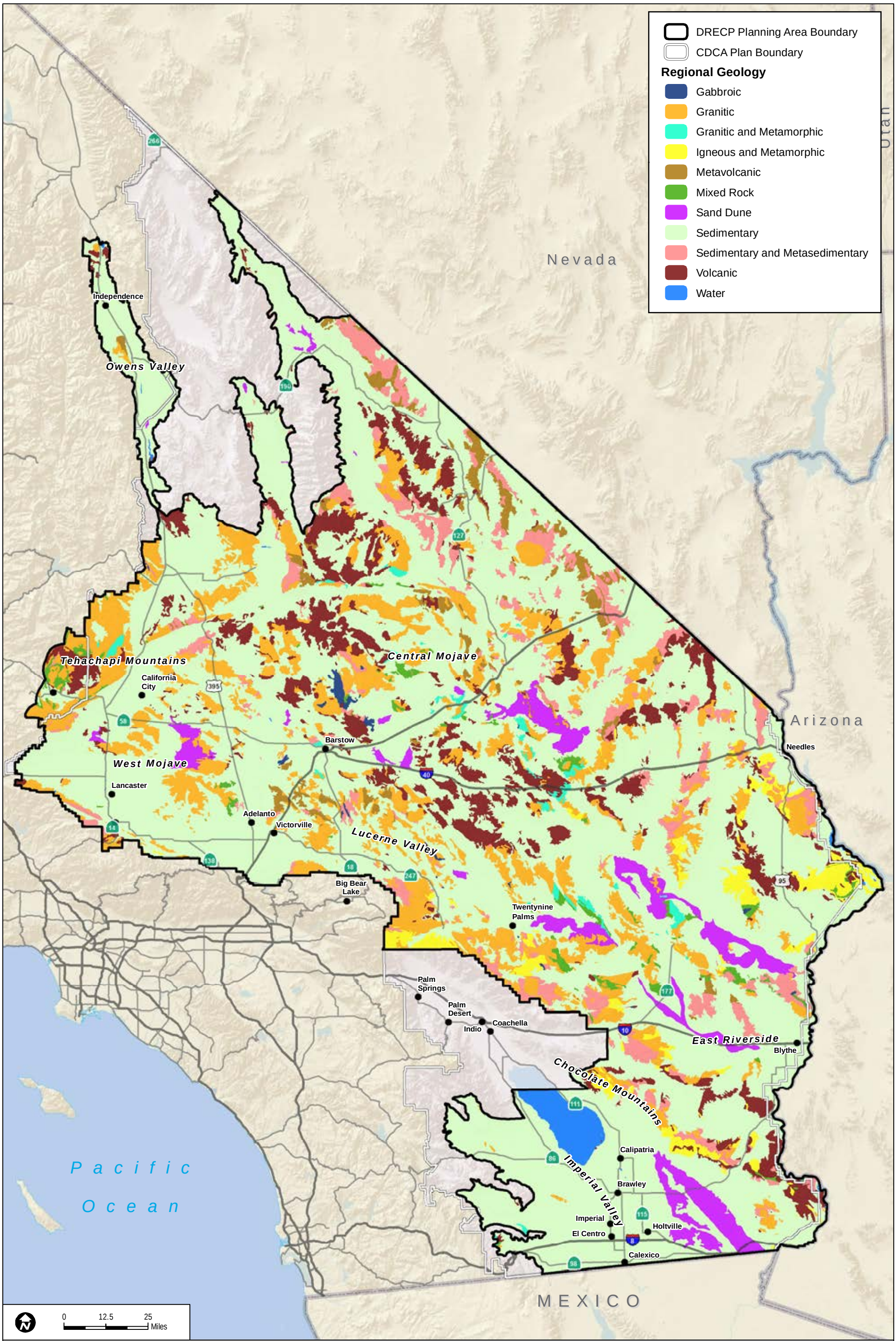
Geomorphology refers to the landforms and relief patterns of the Earth's surface. Although the DRECP Plan Area extends into the San Bernardino and Western Transverse Mountain ranges and the Sierra Nevada Mountain range in the north, the vast majority of the DRECP Plan Area is in the Mojave and Colorado/Sonoran desert regions of California. Therefore, this discussion focuses on the geomorphology of the desert regions of the DRECP Plan Area.

The Mojave Desert is bounded on the west by the Sierra Nevada, Tehachapi, San Bernardino, and San Gabriel mountain ranges, and the Colorado/Sonoran Desert portion of the DRECP Plan Area is bounded on the west by the Peninsular Ranges and on the east by the Colorado River. These large mountain ranges create a rain-shadow effect that developed the arid desert regions. The geomorphology of the Mojave and Colorado/Sonoran Desert regions is dominated by short, isolated mountain ranges within desert plains. Major landforms include canyons, mountain tops and ridges, open slopes, and plains as summarized in Table III.7-1. These major landforms are related to regional geology as summarized in Section III.7.2.6 and illustrated in Figure III.7-1.

Table III.7-1
Landforms within the DRECP Plan Area

Landform	Total in the DRECP Plan Area
Canyons, Deeply Incised Streams	1,153,000
Mountain Tops, High Ridges	1,301,000
Open Slopes	3,647,000
Plains	16,484,000
Total	**22,585,000**

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.



Sources: ESRI (2015); CEC (2013); BLM (2015); CDFW (2013); USFWS (2013); CA Geological Survey (2011)

FIGURE III.7-1

Regional Geology

INTENTIONALLY LEFT BLANK

At least 65 named mountain ranges exist in the DRECP Plan Area. Alluvial fans, which are fan-shaped landforms that form along the base of a mountain front by the buildup of stream sediments and debris flows, are associated with many of these mountain ranges (Harden 2004). Large, coalescing alluvial fans contain numerous washes called "bajadas." The intermountain areas are characterized by numerous playas and basins that form dry lakes. There are approximately 16 named dune systems (Pavlik 1985) and many other smaller dunes and sand formations in the DRECP Plan Area. Among the largest dunes in the DRECP Plan Area are the Algodones Dunes in the Colorado/Sonoran Desert and the Kelso Dunes in the Mojave Desert.

III.7.2.4 Hydrology

The DRECP Plan Area primarily includes two major hydrologic regions: the South Lahontan Hydrologic Region and the Colorado River Hydrologic Region (DWR 2003). The South Lahontan Hydrologic Region generally encompasses the Mojave Desert, East of Sierra Nevada, Sierra Nevada, and the northern flanks of the San Gabriel and San Bernardino mountain ranges. The Colorado River Hydrologic Region encompasses the Sonoran Desert and eastern flank of the Peninsular Range.

Slope debris (i.e., rockslides and rockfalls), alluvial fans, playas, and basins are primarily formed from the forces of running water (see discussion of regional geology and processes in Section III.7.2.6). Substantial surface waters and flows are extremely scarce and unpredictable in arid desert climates. Stream channels are typically ephemeral and formed by flash-flood events, especially during the monsoon season in the Sonoran Desert portion of the DRECP Plan Area. Typical channel forms in the desert regions include alluvial fans, compound (braided) channels, discontinuous ephemeral channels, and single-thread channels with floodplains (Lichvar and McColley 2008). Anthropogenic modifications to DRECP Plan Area hydrology from urbanization and water conveyance and storage are described in Chapter III.5, Flood Hazard, Hydrology, and Drainage Areas.

The DRECP Plan Area spans all or portions of 52 watersheds (see Table III.7-2 and Figure III.7-2).

Table III.7-2
Watersheds in the DRECP Plan Area

Watersheds		
Amargosa	East Salton	Mesquite
Amos-Ogilby	Emerson	Mojave
Antelope	Fremont	Owens
Anza-Borrego	Goldstone	Owlshead
Ballarat	Granite	Pahrump

Table III.7-2
Watersheds in the DRECP Plan Area

Watersheds		
Bessemer	Grapevine	Rice
Bicycle	Hayfield	Route Sixty Six
Broadwell	Homer	Salton Sea
Cadiz	Imperial	Santa Ana River
Chemehuevis	Indian Wells	Santa Clara – Calleguas
Chuckwalla	Ivanpah	Superior
Clark	Johnson	Trona
Colorado	Joshua Tree	Ward
Coso	Kern River	West Salton
Coyote	Lavic	Whitewater
Cuddeback	Leach	Yuma
Dale	Lucerne Lake	—
Deadman	Means	—

Source: DWR 2004.

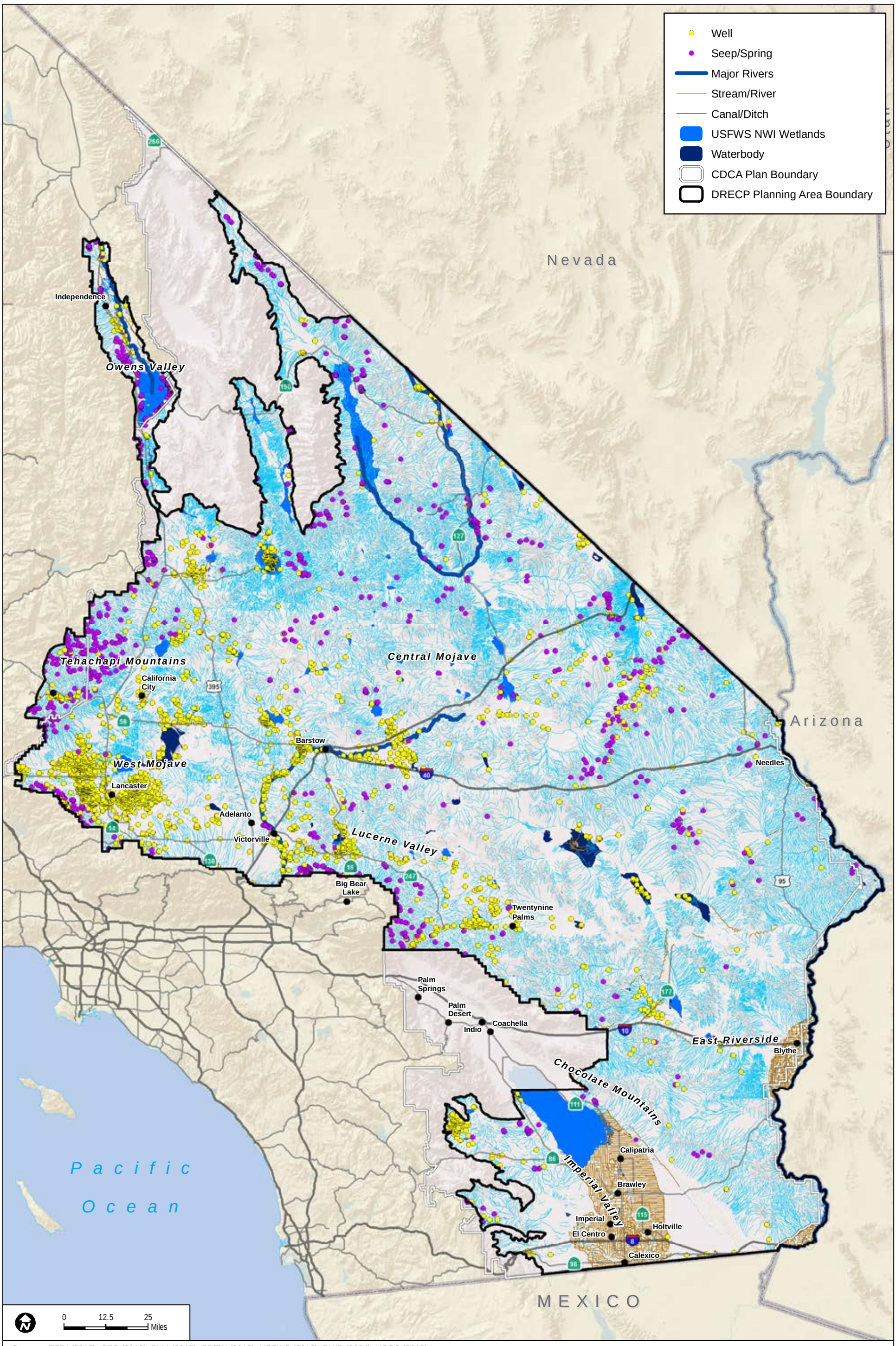
Major hydrologic features in the DRECP Plan Area include the Lower Colorado River, Salton Sea, Owens River, Owens Lake, Mojave River, and Amargosa River. Table III.7-3 provides the linear feet of the four major rivers in the DRECP Plan Area as identified by National Hydrology Dataset (NHD).

Table III.7-3
Major Rivers in the DRECP Plan Area

NHD Major Rivers	Length (feet)
Amargosa River	732,000
Colorado River	405,000
Mojave River	566,000
Owens River	390,000
Total	**2,094,000**

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

A large portion of hydrologically formed features in the DRECP Plan Area is comprised of ephemeral channels and their distributary networks. These and all other water features are described in the Flood Hazard, Hydrology, and Drainage chapter, in Section III.5.4.



Sources: ESRI (2015); CEC (2013); BLM (2015); CDFW (2013); USFWS (2013); DWR (2004); USGS (2013)

FIGURE III.7-2
Hydrology

INTENTIONALLY LEFT BLANK

As mentioned previously, the DRECP Plan Area is divided into the South Lahontan Hydrologic Region and the Colorado River Hydrologic Region. The South Coast and Tulare Lake hydrologic regions account for less than 1% of the DRECP Plan Area (DWR 2003).

There are several waterbodies identified by the NHD in the DRECP Plan Area, including lakes/ponds, playas, reservoirs, and swamps/marshes. Table III.7-4 provides a summary of the number of these waterbodies in the DRECP Plan Area.

Table III.7-4
National Hydrology Dataset Waterbodies in the DRECP Plan Area

NHD Waterbody	Acres
Lake/pond	100
Intermittent lake/pond	11,000
Perennial lake/pond	206,000
Playa	399,000
Reservoir	18,000
Swamp/marsh	5,000
Total	**639,000**

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

There are numerous springs/seeps in the DRECP Plan Area where groundwater surfaces through cracks and fissures. Higher concentrations of springs/seeps occur in the Sierra Nevada and Northern Transverse ranges, along the edges of the San Bernardino National Forest, and in a section of the Mojave National Preserve (Figure III.7-2) (USGS 2010). Table III.7-5 provides the number of seeps/springs in the DRECP Plan Area by ecoregion subarea.

Table III.7-5
Seeps/Springs in the DRECP Plan Area by Ecoregion Subarea

Ecoregion Subarea	Count of Seeps/Springs
Cadiz Valley and Chocolate Mountains	12
Imperial Borrego Valley	34
Kingston and Funeral Mountains	119
Mojave and Silurian Valley	60
Owens River Valley	130
Panamint Death Valley	172
Pinto Lucerne Valley and Eastern Slopes	144
Piute Valley and Sacramento Mountains	26

Table III.7-5
Seeps/Springs in the DRECP Plan Area by Ecoregion Subarea

Ecoregion Subarea	Count of Seeps/Springs
Providence and Bullion Mountains	80
West Mojave and Eastern Slopes	294
Total	**1,071**

There are approximately 606,071 acres of wetlands identified by the National Wetlands Inventory in the DRECP Plan Area (see Appendix Q, Table 2-3). Wetland types include freshwater emergent wetland, freshwater forested/shrub wetland, freshwater pond, lake, and riverine. Larger wetland areas occur at the Salton Sea and in the northern portion of the DRECP Plan Area (Figure III.7-2).

III.7.2.5 Topography

The DRECP Plan Area ranges in elevation from below sea level to approximately 8,700 feet above mean sea level (AMSL). The majority of the DRECP Plan Area is at the middle elevation range of approximately 1,500 to 3,500 feet AMSL. A large portion of the DRECP Plan Area is relatively flat as opposed to moderately sloped or steep. The flattest areas of the DRECP Plan Area include the Mojave Desert's High Desert Plains and Hills and the Colorado/Sonoran Desert. The DRECP Plan Area supports a relatively even distribution of aspects. See Section III.7.3.1 for additional information regarding the topography of the DRECP Plan Area.

III.7.2.6 Regional Geology and Processes

Regional geology is an important factor in soil hydrology and hence in the type and distribution of local desert vegetation types and associated ecological processes. Generally, soil structure strongly affects root distribution, which relates to aboveground plant size/biomass and productivity (Fenstermaker et al. 2009).

Table III.7-6 summarizes the regional geology of the DRECP Plan Area by parent material; Table III.7-7 summarizes the distribution of mapped dunes and sand resources in the DRECP Plan Area by ecoregion subarea. Additional finer-scale Aeolian mapping was conducted by the California Department of Conservation (2014) in the following four locations: Johnson Valley, East Riverside, San Felipe Dunes, and Imperial Dunes. Regional geology of the DRECP Plan Area is also shown on Figure III.7-1.

Table III.7-6
Regional Geology in the DRECP Plan Area

Parent Material	Acres
Gabbroic	44,000
Granitic	2,853,000
Granitic and metamorphic	110,000
Igneous and metamorphic	438,000
Metavolcanic	367,000
Mixed rock	190,000
Sand dune	707,000
Sedimentary	14,893,000
Sedimentary and metasedimentary	1,147,000
Volcanic	1,621,000
Water	213,000
Total	**22,585,000**

Source: California Department of Conservation 2010.
Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

Table III.7-7
Dunes and Sand Resources by Ecoregion Subarea

Ecoregion Subarea	Total in the DRECP Plan Area
Cadiz Valley and Chocolate Mountains[1]	598,000
Imperial Borrego Valley[1]	255,000
Kingston and Funeral Mountains	69,000
Mojave and Silurian Valley	232,000
Owens River Valley	8,000
Panamint Death Valley	140,000
Pinto Lucerne Valley and Eastern Slopes[1]	87,000
Piute Valley and Sacramento Mountains	90
Providence and Bullion Mountains	269,000
West Mojave and Eastern Slopes	122,000
Total	**1,781,000**

Source: California Department of Conservation 2000; Dean 1978; and CDFG 2012a.
Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

[1] Additional finer-scale Aeolian mapping was conducted in the Cadiz Valley and Chocolate Mountains' Imperial Borrego Valley, as well as Pinto Lucerne Valley and Eastern Slopes subareas, and is described in detail in the *Eolian System Mapping Report* (California Department of Conservation 2014).

The majority of the DRECP Plan Area is composed of alluvium, which is unconsolidated sediment deposited by streams. Alluvium makes up 61% of the DRECP Plan Area, though it is more common in the desert regions. In more mountainous areas, alluvium makes up a relatively small portion of the DRECP Plan Area.

The other most common geological components in the Mojave Desert are granite substrates (coarse-grained intrusive rock consisting mainly of light silicate minerals), which make up 13% of the area, and volcanic/metavolcanic rocks, which make up 9% of the area. The DRECP Plan Area contains several relatively young (i.e., within the last million years) volcanic features in the Mojave and Sonoran deserts, including the Cima, Amboy-Pigash, and Turtle Mountain features in San Bernardino County, Pinto Basin-Salton Creek in Riverside County, and Obsidian Buttes in Imperial County, as well as several smaller miscellaneous volcanic features in San Bernardino, Inyo, and Imperial counties (Harden 2004). Sand dune and marine depositions make up relatively small portions of the DRECP Plan Area, but they still account for substantial acreages in the Mojave and Colorado/Sonoran deserts. Sand dune deposits make up about 2% of the Mojave Desert and about 7% of the Colorado/Sonoran Desert. Marine deposits are a relatively small portion of the DRECP Plan Area, making up just over 7% of the Mojave Desert and about 4% to 5% of the Colorado/Sonoran Desert (including the Salton Sea).

Miller et al. (2009) identify three fundamental geomorphic processes that shape the regional geology of desert systems and transportation and deposition of substrates: (1) Aeolian (wind-transported); (2) fluvial, alluvial, and lacustrine (water-transported); and (3) mass-wasting (gravity-transported). Miller et al. (2009) also outline the relationship between substrate deposit types and depositional process: alluvial fans are formed through fluvial and debris flow processes; Aeolian dunes and sheets are formed through Aeolian processes; playas and axial valley washes are formed through fluvial, lacustrine, and Aeolian processes; hillslope materials are formed through mass-wasting; and wetland deposits are formed through fluvial and Aeolian processes. Surficial deposits vary on several factors related to these depositional processes, including particle size, cohesiveness, bulk density, lateral and vertical heterogeneity, degree of sorting, time since the deposit was abandoned (or isolated), and the relative increase in soil development and erosion that occurs with time after abandonment (Miller et al. 2009; Short and Lancaster 2015). The surficial deposit's depositional setting is strongly correlated with the particle size and geomorphic signature (Short and Lancaster 2015). These geomorphic processes are common to both the Mojave Desert and Colorado/Sonoran Desert in the DRECP Plan Area.

III.7.2.6.1 Aeolian Processes

Wind systems are particularly important in arid and semiarid environments where sparse vegetation enables wind energy to more directly affect the soil surface (Breshears et al. 2003). The deposition of Aeolian sediments is one of the major processes that shape the desert landscape, including desert pavement and dune systems (BLM 2002; Miller et al. 2009).

Aeolian systems are determined by the interactions of three main factors: sediment supply, sediment availability (i.e., its ability to be transported by the wind), and the transport capacity of the wind (Kocurek and Lancaster 1999). Miller et al. (2009) describe Aeolian-driven soil formation, or pedogenesis, as a process that "proceeds by progressive infiltration of fine-grained aeolian materials (dust), chemical deposition, and weathering within sediment deposits" (p. 232). This process results in a soil layering or "horizonization" that strongly affects soil permeability and moisture-holding capacity and becomes more pronounced over time. Aeolian processes facilitate the formation of desert pavements, which are closely packed rock surface substrates created through wind and water erosion that generally have very low permeability and moisture available to plants (Miller et al. 2009). Increased runoff from these soils can also promote erosion and surface drainages and dissects the soil deposits (Miller et al. 2009).

Sand dune systems form where winds are consistently strong enough to lift and carry fine sand grains and where there is little or no vegetation that serves to stabilize the soil (Harden 2004). Sandy alluvium in dry washes and alluvial fans are the sources for these materials, and strong winds generally blowing east to west transport the sands to areas where the winds decrease at the mountain front and deposit the sand (Harden 2004). The Algodones Dunes in the Colorado/Sonoran Desert of the southeastern portion of the DRECP Plan Area, for example, formed from the sandy delta of the Colorado River and currently extend about 43 miles from the southwest portion of the Salton Sea to the Mexican border and reach heights of over 300 feet.

In relation to Aeolian processes, sand dune regional geology is described and mapped in Section III.7.2.6, and dune vegetation types are described and mapped in Section III.7.4.2.6.

III.7.2.6.2 Fluvial, Alluvial, and Lacustrine Processes

As described previously, the majority of the regional geology of the Mojave and Colorado/Sonoran deserts and East of Sierra Nevada is alluvium that has resulted from fluvial processes and over geological time scales that deposit materials (i.e., alluviation) from the mountains to the alluvial fans at the base of the mountains. Desert fluvial processes generally relate to the drainage system of slopes and channels. Although these processes are generally considered to occur over long periods of time, severe flooding events related to thunderstorms can cause alluvial fan flash flooding and large debris flows

that can alter the landscape over very short time periods. Generally, the size of an alluvial fan is proportional to the size of the drainage network for the fan (Harden 2004).

Lacustrine processes are most prominent in desert dry lakes or playas, which generally are low spots in drainage basins that capture sediments and surface water, and which may also be influenced by groundwater; technically such areas are base-level plains in desert drainage basins (Cooke and Warren 1973). Several prominent playas and basins that form dry lakes are present in the DRECP Plan Area, such as Harper Dry Lake, Lucerne Dry Lake, El Mirage Dry Lake, Ivanpah Dry Lake, Bristol Dry Lake, and Silurian Dry Lake. Playas are characterized by large flat areas dominated by fine-grained sediments. Due to the fine-grained sediments, playas are relatively impermeable. Surface water is removed by infiltration and evaporation, and groundwater is removed by evaporation and evapotranspiration (evaporation and transpiration by vegetation). During wet periods, surface water may accumulate, facilitating lacustrine sedimentation. Overall, the hydrologic characteristics of a playa are affected by climate, basin floor conditions, soil and vegetation, and water salinity (which affects evaporation rates).

III.7.2.6.3 Mass-Wasting Processes

Mass-wasting refers to the downslope movement of rock, regolith (rock and mineral fragments), and soil under the direct influence of gravity (Lutgens and Tarbuck 1992). Mass-wasting processes include creep, slides, and debris flows. Slides are sudden downslope movements of rocks and sediments. Debris flows are dense, fluid mixtures of rock, sediments, and water. Mass-wasting in the many major and smaller mountain ranges in the DRECP Plan Area occurs primarily as rock falls and rock slides on the steeper slopes. Intense monsoonal rains and earthquakes are likely primary causes of rockfalls and rockslides on steep, mountain slopes in the DRECP Plan Area. Creep, on the other hand, is a slow, continuous downslope movement primarily related to freeze/thaw or wet/dry cycles (Lutgens and Tarbuck 1992; California Department of Conservation 2007).

III.7.3 Ecological Processes

This section describes how the physical factors discussed in Section III.7.2 and associated ecological processes influence biological resources in the DRECP Plan Area. The ecological processes discussed in this section are associated with environmental gradients, substrates and Aeolian and fluvial/alluvial transport, soil biota, carbon and nutrient cycling, and fire.

III.7.3.1 Environmental Gradients

An environmental gradient is a spatial shift in physical and ecological parameters across a landscape, such as changes in topography, climate, land cover types, or vegetation types. Generally, the vegetation types and patterns in the desert regions are directly related to the

physical features and processes described in Section III.7.2, which create the range of environmental gradients in the DRECP Plan Area, including flat, relatively barren playas and basins, alluvial fans and bajadas, and the rocky slopes and ridgelines of the numerous mountain ranges. Environmental gradients are influenced by factors such as temperature, precipitation, wind, and solar exposure that vary with physical factors such as elevation, latitude, slope, and aspect. For example, the hotter, drier, and flatter desert lowlands in the DRECP Plan Area, such as the Colorado/Sonoran Desert, are associated with relatively low plant species richness and diversity and are dominated by low, shrubby species such as creosote (*Larrea tridentata*) and burro-weed (*Ambrosia dumosa*) (Baldwin et al. 2002, as cited in Appendix Q). As elevation and precipitation increases, in the Mojave, for example, vegetation types include more woody species, such as Joshua tree and conifers such as pinyon pines (*Pinus* spp.) and junipers (*Juniperus* spp.). The composition of desert vegetation also varies with seasonal precipitation patterns. Most herbaceous annuals germinate and bloom in association with winter rains, but some species respond to ephemeral summer rains (Baldwin et al. 2002, as cited in Appendix Q). A discussion of the vegetation types in the DRECP Plan Area is provided in Section III.7.4. Insolation is defined as incident solar radiation and corresponds to the amount of solar resource available per unit area. It is usually expressed as kilowatt-hours per square foot per day and can be summed over an area to give an estimate of the gross energy potential in that area. The DRECP Plan Area has very high insolation values ranging from between 7 and 7.5 kilowatt-hours per square meters per day (kwhrs/m^2-day) (CEC 2005).

As discussed in Section III.7.2, the DRECP Plan Area ranges in elevation from below sea level to approximately 8,700 feet AMSL. Table III.7-8 shows the distribution of elevation ranges in the DRECP Plan Area.

Table III.7-8
Distribution of Elevation Ranges in the DRECP Plan Area

Elevation Range (feet AMSL)	Acres
Less than 0	1,113,000
0–500	1,781,000
500–1,000	2,307,000
1,000–1,500	2,023,000
1,500–2,000	2,256,000
2,000–2,500	3,338,000
2,500–3,000	3,452,000
3,000–3,500	2,535,000
3,500–4,000	1,786,000
4,000–4,500	1,028,000
4,500–5,000	525,000

Table III.7-8
Distribution of Elevation Ranges in the DRECP Plan Area

Elevation Range (feet AMSL)	Acres
5,000–5,500	268,000
5,500–6,000	111,000
6,000–6,500	38,000
6,500–7,000	15,000
7,000–7,500	7,000
7,500–8,000	2,000
8,000–8,500	300
8,500–8,700	<10
Total	**22,585,000**

Source: USGS 2007.
Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

A large portion of the DRECP Plan Area is relatively gentle terrain as opposed to moderately sloped or steep (Table III.7-9).

Table III.7-9
Distribution of Slope Ranges in the DRECP Plan Area

Slope (degrees)	Acres	% of Total
0–5	13,615,000	60.3%
5–10	3,693,000	16.4%
10–15	1,484,000	6.6%
15–20	994,000	4.4%
20–25	755,000	3.3%
25–30	581,000	2.6%
30–35	442,000	2.0%
35–40	329,000	1.5%
40–45	238,000	1.1%
45–50	165,000	0.7%
50–100	287,000	1.3%
Above 100	1,000	0.01%
Total	**22,585,000**	**100.0%**

Source: USGS 2007.
Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10,

and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

The DRECP Plan Area supports a relatively even distribution of aspects (Table III.7-10).

Table III.7-10
Distribution of Aspect in the DRECP Plan Area

Aspect	Acres	% of Total
Flat	236,000	1.0%
North	2,773,000	12.3%
Northeast	3,386,000	15.0%
East	3,082,000	13.6%
Southeast	2,813,000	12.5%
South	2,730,000	12.1%
Southwest	2,966,000	13.1%
West	2,490,000	11.0%
Northwest	2,111,000	9.3%
Total	**22,585,000**	**100.0%**

Source: USGS 2007.
Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

III.7.3.2 Substrates

Substrate is an important factor in local desert vegetation types and soil hydrology, and it is critical for maintaining native vegetation types. Generally, soil structure strongly affects root distribution, which relates to aboveground plant size/biomass and productivity (Fenstermaker et al. 2009, as cited in Appendix Q). Because desert ecosystems are water-limited, the relationship between precipitation patterns, soil structure, and soil hydrology, therefore, is critical for maintaining a healthy desert ecosystem. The regional geology and processes associated with ecological processes in substrates are described in Section III.7.2.6. Key factors in how substrates influence ecological process include:

- Water infiltration into the upper soil horizon
- Water storage capacity of lower soil horizons
- Nutrient availability for plants
- Direct effects of Aeolian (wind-transported) sand deposition on plants and animals

Several different soil textures occur in the DRECP Plan Area. Unweathered bedrock, very gravelly sandy loam (soil composed of sand, silt, and clay), and loamy sand are the most common soil textures in the DRECP Plan Area. Lower elevation bedrock substrates, for example, support plant species such as brickellbush (*Brickellia arguta*), brittlebush (*Encelia farinosa*), hedgehog cactus (*Echinocereus engelmannii*), and arrow-leaf (*Pleurocoronis pluriseta*). Washes support more deep-rooted shrubs tolerant of flash floods, including catclaw, desert-willow (*Chilopsis linearis*), cheesebush (*Ambrosia salsola*), mesquite (*Prosopis glandulosa*), palo verde (*Cercidium* spp.), ironwood (*Olneya tesota*), and smoke tree (*Psorothamnus spinosus*). Playas, salt flats, and basins where water collects may support highly alkaline or saline conditions unsuitable for plant growth, but the margins of these features support tolerant plants such as saltbushes (*Atriplex* spp.) and greasewood (*Sarcobatus vermiculatus*).

A critical feature of soil hydrology is the infiltrability of the soil, which is the maximum rate water can infiltrate a given soil under atmospheric conditions (Miller et al. 2009, as cited in Appendix Q). Sand deposits increase water infiltration, dilute soil nutrient concentrations, reduce soil surface stability, and restrict water- and nutrient-holding capacity (Belnap et al. 2008, as cited in Appendix Q). Infiltration generally decreases with the increasing age of a soil deposit and degree of soil development. An important characteristic of desert substrates is the formation of desert pavement and accumulation of desert varnish on alluvial piedmonts (i.e., the areas lying at the base of mountains), which occur progressively over a long time period as the soil is stabilized.

Horizonization, which becomes more pronounced with age, strongly affects soil permeability and moisture-holding capacity. The collection of silt and sand in the Av horizon (a distinct, fine-grained soil horizon that forms the topmost mineral layer of soil and has many vesicles or large pores throughout) through Aeolian processes, for example, facilitates the formation of desert pavement, which generally has very low permeability (as little as 1%) and low moisture available to plants. The decreased infiltration in older deposits also contributes to higher runoff rates, which cause erosion and the formation of surface drainages. Generally, in the Eastern Mojave, perennial plant cover decreases with the age of the deposit and formation of desert pavement and varnish (Miller et al. 2009, as cited in Appendix Q).

While development of the Av horizon can decrease infiltration of water, development of the underlying B horizon (i.e., subsoil) can also strongly affect soil hydrology. The accumulation of loam, sandy clay loam, and clay loam in the B horizon enhances soil structure and the number of micropores, which increase the retention and water storage capacity of the soil (Belnap et al. 2008; Miller et al. 2009, as cited in Appendix Q). These finer, clay and loam soils have lower permeability and bind water more tightly to soil particles by capillary force (Miller et al. 2009, as cited in Appendix Q).

In addition to available moisture related to soil structure, plant species composition is also influenced by the nutrient-rich deposition of fine silt and clay particles that increase soil fertility (Belnap et al. 2008, as cited in Appendix Q). Aeolian dust contributes to the formation of soils and supplies sediments with essential nutrients, including the following elements: phosphorus, magnesium, sodium, potassium, molybdenum, and calcium (Reynolds et al. 2001, as cited in Appendix Q).

In addition to Aeolian-related soil and vegetation interactions that occur over long time periods of soil development, Aeolian processes can have more direct and immediate physical impacts on the ecosystem. Sand deposition that can occur during a single wind event can cause either complete or partial plant burial. Airborne dust that collects and accumulates on leaves and stems of desert plants can cause changes in physiological performance. Sharifi et al. (1997) measured physiological parameters of gas exchange in creosote bush, cheesebush, and four-winged saltbush (*Atriplex canescens*) at a Mojave Desert site where plants were both undisturbed and heavily dusted. They found that maximum rates of photosynthesis of dusted plants compared to undisturbed controls were reduced 21% in the resinous leaflets of creosote bush, 44% in resinous leaves and photosynthetic stems of cheesebush, and 58% in non-resinous (C_4) leaves of four-winged saltbush. They also found that dusted plants of all three species showed reduced maximum leaf conductance, transpiration, and instantaneous water-use efficiency, as well as other physiological effects and morphological effects (smaller leaf areas and greater leaf-specific masses) indicating that dust-related reduced photosynthesis and decreased water-use efficiency may cause lowered primary production in desert plants when photosynthesis is occurring. The deposition of Aeolian sand has also been documented to enhance coppice dune formation in the Johnson Valley (Short and Lancaster 2015).

Sand inputs can also affect, either negatively or positively, the ability of animals to burrow into the soil. Consequently, areas with active Aeolian systems, such as sand dunes, generally include plant and animal species able to adapt to rapid changes in substrate (Belnap et al. 2008, as cited in Appendix Q).

Dynamic alluvial and fluvial processes also play an important role in determining vegetation types in an area. Bedford et al. (2009) suggest a “soil-mosaic” approach to understanding how vegetation responds to soil and hydrologic characteristics that determine soil texture, structure, infiltration capacity, and rates of evapotranspiration. They applied the soil-mosaic approach to the size and density of creosote bush, with the hypothesis that soil type and topography are important drivers of these characteristics due to their influence on soil water. Generally Bedford et al. (2009) found that soil texture, elevation, and hydraulic properties related to regional geology influence creosote bush size and density with larger shrubs and denser areas associated with well-drained gravelly soils.

Although plant and animal community types and distributions are strongly determined by the physical processes discussed above, plant and animals also exert an influence on soil development, structure, and hydrologic and chemical properties such as infiltrability, organic material, and chemical nutrients through the mixing of sediment by burrowing, feeding, or other activities resulting from plant rooting and burrowing by insects, rodents, and reptiles. Titus et al. (2002, as cited in Appendix Q), for example, found that microsites with perennial shrubs in a creosote–burro-weed vegetation type in the Mojave Desert and small mammal burrows had higher levels of soil nutrients, and nonvegetated sites (washes, plant interspaces) without burrows had very low levels of nitrogen and phosphorus.

III.7.3.3 Soil Biota

Soil biota is another important factor in desert ecosystem processes. Soil surface biota or biological soil crusts are related to soil stabilization, nutrient cycling, and local hydrology. Biological soil crusts consist primarily of cyanobacteria in the Mojave Desert (Belnap et al. 2008) and Sonoran Desert (Organ Pipe Cactus National Monument in Arizona) (Nagy et al. 2005), which cover most soil surfaces. Cyanobacteria are typically the first colonizers of desert soil crusts (Belnap 2001; Garcia-Pichel et al. 2001), except soils with low pH (Garcia-Pichel et al. 2001). Soil surfaces at higher elevations also support lichens and mosses. Biological soil crusts serve important soil stabilization functions that influence biological resources, including (1) aggregating soil particles and reducing their susceptibility to wind and water erosion, (2) roughing the soil surface, which traps dust and increases capture of mineral nutrients, and (3) enhancing retention of wind- and waterborne organic material and seeds. Subsurface soil biota includes bacteria, fungi, protozoa, nematodes, and microarthropods. An important function of subsurface biota is the breakdown of plant litter and roots, which makes the nutrients of these materials available to other plant and animal organisms (Belnap et al. 2008, as cited in Appendix Q). Mycorrhizal fungi (fungi associated with vascular plant roots) colonize the roots of many desert plants and help collect water, nitrogen, phosphorous, and zinc that can be used by the plant due to their spreading into soil zones out of reach of the plants (Belnap et al. 2008). Winding of the fungi hyphae (long, branching filamentous structure) throughout the soil also contributes to soil stability (Belnap et al. 2008).

III.7.3.4 Carbon and Nutrient Cycling

Carbon and nutrient cycling are important factors in desert ecosystems. Carbon cycling in desert systems occurs from dead plant material, with aboveground decomposition likely occurring from abiotic process (e.g., release of gas when soils are wetted) and belowground decomposition occurring from the biotic process of respiration by plant roots and soil organisms (Belnap et al. 2008, as cited in Appendix Q). Biological crusts can be significant sources of carbon in arid and semiarid environments, especially in areas between vascular

plant species where biological soil crusts can reach 100% cover. In addition, soil organisms, which are sources of carbon for other organisms, are relatively more diverse and abundant in soils with a biological crust than soils without a biological crust.

Dryland ecosystems, which include the deserts of the southwestern United States, account for about 47% of all earth land covers (Lal 2004). However, drylands have relatively low soil organic carbon (SOC) concentrations, accounting for 15.5% of the world's total SOC (Lal 2004). Drylands also contain as much or more soil inorganic carbon (SIC) as SOC. Caliche (a hardpan soil layer common in deserts) is a carbonate accumulation from carbon-rich moisture, accounting for much of SIC. While drylands naturally support relatively low SOC concentrations, maintaining carbon sequestration function in drylands can contribute to controlling enrichment of atmospheric CO_2 (Lal 2004). SOC density in drylands is strongly related to soil characteristics, including being generally coarse-textured with low water, nutrient capacity, and fertility and continually sifted by wind (especially dunes which have significantly lower SOC levels) (Lal 2004). These factors also affect vegetation (which can be patchy and highly variable), run-off patterns, and infiltration rates, which can also affect the distribution and density of SOC. Drylands SOC is affected by human disturbances and climate variation that result in desertification. Disturbances include vegetation removal and soils disturbances related to development activities that can increase carbon emissions and reduce sequestration capacity. Lal (2004) notes that lost carbon can be resequestered through restoration of desertified soils and ecosystems, including afforestation with mesquite and acacia. Recovery of carbon fixation depends on increases in biomass and in the biological crust (Webb et al. 2009).

Nitrogen, which is an essential element for building amino acids and proteins, is made available to desert plants mainly by the cyanobacterium *Nostoc* through the process of nitrogen fixation, which is the reduction of gaseous nitrogen to ammonia or other inorganic or organic compound. Nitrogen fixation is important to plants because the plant itself cannot produce nitrogen. Nitrogen fixation is controlled by moisture and temperature in association with physiological activity by the cyanobacterium (Belnap et al. 2008, as cited in Appendix Q).

Phosphorus, which can be vegetation-limiting in deserts, is made available by the weathering of primary bedrock material such as apatite. Generally, phosphorus is unavailable for uptake by soil biota and plants because of its relative insolubility (due to its reaction with carbonates, iron oxide, and other compounds), but exudates (fluid that filters from the circulatory system) of cyanobacteria, bacteria, fungi, and plant roots can increase phosphorus availability and uptake by dissolving these compounds (Belnap et al. 2008, as cited in Appendix Q).

Other important nutrients affecting plant productivity include potassium, calcium, magnesium, sodium, and micronutrients such as copper, iron, zinc, and manganese.

Potassium, which is essential for plants, is fairly evenly distributed throughout the soil profile in desert regions. Too much calcium can limit plant growth by forming calcium carbonate to the depth of water infiltration (e.g., in playas) and creating a solid layer of calcrete (or caliche, a calcium-rich hardpan) that inhibits plant roots and water flow. Too much calcium can also inhibit the bio-availability of other important nutrients such as phosphorus, magnesium, and micronutrients by reducing their solubility in the soil. Magnesium, which can be depleted fairly rapidly from soils, interacts strongly with other ions such as potassium and sodium, and plant productivity can be affected by the ratio of magnesium to other ions. Sodium is beneficial to plant productivity in small amounts, but because it is the most easily leached cation (positively charged ion) and forms alkaline crusts on the surface, many desert plants have adaptive mechanisms for managing high sodium levels (Belnap et al. 2008, as cited in Appendix Q).

The micronutrients copper, iron, zinc, and manganese are also important to plant productivity but typically have low biologically available concentrations in the arid environments. These micronutrients also react with carbonate compounds, resulting in low solubility and bio-availability (Belnap et al. 2008, as cited in Appendix Q).

III.7.3.5 Fire

Fire has been historically infrequent in the southwestern deserts but has increased in frequency and extent in recent decades, generally as a result of increased fuel provided by the invasion of non-native annual grasses, such as red brome (*Bromus rubens*) and buffelgrass (*Pennisetum ciliare*) (Brooks and Matchett 2006; Abella 2010, as cited in Appendix Q). See Section III.7.7.1 for a discussion of invasive plant species. Most of the fires recorded from 1911 to 2009 within the DRECP Plan Area occurred along its western boundary (CAL FIRE 2009, as cited in Appendix Q). Between 1980 and 1990, about 38 square kilometers (9,390 acres) of the Mojave Desert burned every year (Pavlik 2008, as cited in Appendix Q). Brooks and Minnich (2007, as cited in Appendix Q) indicate that between 1980 and 2001 the Mojave Desert had an annual fire frequency of 2.1 fires per 1,000 square kilometers, the Sonoran had an annual fire frequency of 0.6 fires per 1,000 square kilometers, and the Colorado had an annual fire frequency of 2.2 fires per 1,000 square kilometers. Within the DRECP Plan Area, the largest acreages burned in the years 1999, 2005, 2006, and 2007 (CAL FIRE 2009, as cited in Appendix Q), indicating a trend of increased fire sizes and frequency.

Non-native plant invasions may alter the fire regime by changing the frequency, intensity, extent, type, or seasonality of fire (Brooks and Matchett 2006, as cited in Appendix Q). Repeated fires are typically followed by dominance of bromes (*Bromus* spp., red brome in particular) that can germinate and grow more rapidly on burned sites than many native plants, and that provide fuel loads capable of carrying fire again soon after burning. The

result is a fire regime where increased fire frequency and conversion of native vegetation types to non-native grasses creates a positive feedback loop, setting the stage for even more frequent, intense widespread fires followed by increased conversion of the native landscape (Brooks and Matchett 2006, as cited in Appendix Q).

Increased fire in the desert ecosystem has severe consequences because the vegetation types and desert species were not exposed to frequent and large-scale fires during their evolutionary history and thus are not fire adapted, as are some other vegetation types such as chaparral (Pavlik 2008, as cited in Appendix Q). Landscape changes resulting from altered fire regimes are most evident in the middle elevation shrublands dominated by creosote bush, Joshua tree, and blackbrush (*Coleogyne ramosissima*). Creosote bush, for example, does not stump-sprout after fire like some chaparral species (Pavlik 2008, as cited in Appendix Q). Fire has also decimated large numbers of Joshua trees in areas of Joshua Tree National Park. Fire readily kills Joshua trees and they rarely resprout. In addition, regeneration of Joshua trees often requires protection in the form of shading by existing vegetation or nurse plants for reproduction; thus regeneration of new individuals is slow and depends on the establishment of nurse plants following fire (Abella 2010, as cited in Appendix Q). Compared to other areas of the Mojave Desert, middle elevation shrublands are more susceptible to large fires following years of high rainfall, which causes an increase in the biomass of non-native annual grasses, especially red brome, that produce continuous fuel-beds. Furthermore, native desert annuals do not typically flourish following fire. At lower elevations, the cover of native perennial fuels is naturally very low, so relative to middle elevation shrublands, lower elevation vegetation types are not as sensitive to changes in fire regime related to increases in ephemeral fuels (Brooks and Matchett 2006, as cited in Appendix Q). At higher elevations, native woody fuels dictate fire regimes so fire size does not vary much with rainfall (Brooks and Matchett 2006, as cited in Appendix Q).

Fire functions differently than other forms of disturbance in the desert. Abella (2010, as cited in Appendix Q) found in the Mojave and Colorado/Sonoran deserts that perennial plant cover generally rebounded faster after fire than after land-clearing disturbances related to utility corridors and roads and that post-disturbance species composition differed. Although fire affects soil physical and chemical properties, soils may still remain more intact following fire compared to land-clearing disturbances in which soils are removed or heavily compacted. In addition, roots and seeds may not be entirely removed by fire, but they are often removed after land-clearing disturbances. Thus, residual propagules may contribute to plant reestablishment after fire but not after other types of disturbance (Abella 2010, as cited in Appendix Q). However, fires can sterilize soils by killing mycorrhizal fungi (Pavlik 2008, as cited in Appendix Q).

Some desert wildlife species, such as desert tortoise (*Gopherus agassizii*), are also especially vulnerable to fire because they do not have behavioral avoidance responses to severe events

(e.g., deep burrow systems and quick escape). On the other hand, the effects of fire may be beneficial in certain cases. Early successional vegetation types may provide habitat favorable for some wildlife species, such as Merriam's kangaroo rat (*Dipodomys merriami*), which forages in open areas. Studies have shown increased abundance of this species after a fire in Sonoran Desert upland habitat at Tonto National Forest, Maricopa County, Arizona (Abella 2010, as cited in Appendix Q).

III.7.4 Ecological Context of the DRECP Plan Area

The DRECP Plan Area spans a large geographic area and is primarily composed of the Mojave and Colorado/Sonoran deserts but also includes the surrounding foothill and mountain regions and a small portion of the Great Basin Desert. As described in Section III.7.2.1, these regions of the DRECP Plan Area have been further subdivided up into 10 ecoregion subareas for the purposes of describing the biological resources setting. Following the ecological setting subsections, this section describes the flora, vegetation types, and other land covers in the DRECP Plan Area. Section III.7.5 describes the wildlife resources in the DRECP Plan Area and Section III.7.6.1 provides species summaries for the DRECP proposed Focus Species.

Ecological Setting for the Mojave Desert and Colorado/Sonoran Desert

The Mojave Desert is a "cold" or winter desert, with about 50% to 70% of rainfall occurring during the winter (Redmond 2009). The northern Mojave Desert has the most extreme variations in temperature (including freezing temperatures as low as 0°F at the higher elevations and snowfall), precipitation, and potentially evapotranspiration levels, when compared to the other subregions (Randall et al 2010; Webb et al. 2009). The northern Mojave Desert includes Death Valley, which is the lowest elevation and hottest location in North America; the air temperature here can exceed 130°F in late July and early August at the lowest elevations (Randall et al. 2010). The Sonoran Desert, which includes the low elevation Colorado Desert of Southern California (also referred to as the Colorado/Sonoran Desert), is the hottest of the North American deserts, second only to Death Valley in how little rainfall it receives (ASDM 2012; Weiss and Overpeck 2005). Summer temperatures in the Colorado/Sonoran Desert may exceed 120°F, with surface temperatures of up to 180°F (ASDM 2012). The lower elevations of the Colorado/Sonoran Desert seldom experience sub-freezing temperatures and frost, but snow may fall occasionally at the higher elevations during very cold winter storms.

Rainfall in the northern Mojave Desert is highly variable, including monsoonal precipitation from early July to mid-October averaging 1.4 inches, but with a broad range of 0.02 to 4.9 inches per season (Randall et al. 2010). In contrast to the northern Mojave Desert, the western Mojave Desert has more predictable winter precipitation, accounting for an estimated 82% to 97% of the Mojave Desert's annual rainfall (Webb et al. 2009). The Colorado/Sonoran Desert receives lower annual rainfall than the Mojave despite receiving

summer and winter rains, with an average annual rainfall of 2 inches. In some years, the region may not receive any rainfall at all. Relative humidity levels are also low, often below 10%. Species and individuals in such a harsh environment often have a set of genetic and morphological adaptations that allow their survival.

Harsh or novel environments often occur at the periphery of species' ranges. Individuals surviving in habitat at the edge of a species' distributional range can play an important genetic and geographic role in the survival of the species in the face of environmental fluctuations, such as is likely to be caused by climate change, increasing drought, and habitat fragmentation by a number of human agents. Populations in the Colorado/Sonoran Desert of wide-ranging species such as desert tortoise or bighorn sheep (*Ovis canadensis*), for example, may demonstrate genetic and morphological characteristics distinct from other parts of a species' range. Lesica and Allendorf (1995) suggest two reasons for potential genetic and morphological differences between central and peripheral populations: First, such populations are often at the periphery of a species' range and consequently are often smaller, less dense, and more subject to the effects of genetic drift (change in the frequency of a gene variant (allele) in a population). Second, these populations persist in the harshest range-wide conditions and are consequently adapted to a different environment than present in the rest of the species' range.

Geographically peripheral populations can be subject to stronger selection pressures (pressures shaping evolution) than core populations. Such pressures can result in behavioral and physiological adaptations that facilitate survival in harsher climes (Lesica and Allendorf 1995). These adaptations can confer genetic benefits that contribute to greater survivability of individuals, and ultimately the species, in response to long-term, wide-scale environmental changes. In addition, peripheral populations typically have lower population densities and consequently are more resistant to density-dependent sources of mortality, such as disease. Disease can have population-level impacts, as evidenced by the recent large and range-wide reduction in desert tortoise numbers for certain core (i.e., not peripheral) populations. Other factors, such as human development, can also constrain species to the edges of their historical ranges. In fact, in a study of 245 imperiled species worldwide, Channell and Lomolino (2000) found that 68% of surveyed species retained a greater than expected portion of their distribution in habitat peripheral to the historic range. Given the above, areas supporting peripheral populations can function as refugia against environmental catastrophes and as a source for recolonization of depleted/extirpated core populations of a species (Nielsen et al. 2001; Flannery 2001). Thus, geographically peripheral populations in the Colorado/Sonoran Desert may prove to be just as important for species' long-term survival as larger core populations.

Under current models of climate change, the California deserts are expected to become warmer and may become drier (although some models predict increased precipitation in

the desert regions) as climate change progresses (see Chapter III.3 and Appendix P; also Cayan et al. 2008; Weiss and Overpeck 2005). Species will need to cope with decreasing and less consistent water availability and an increasing number of days above current minimum temperatures. These two abiotic factors are among the primary determinants of species' range (e.g., Bowers and Turner 2001; Leslie and Douglas 1979; Turnage and Hinckley 1938). According to climate change models, conditions currently present in parts of the Colorado/Sonoran Desert are expected to expand to other parts of the DRECP Plan Area (Allen 2012), with an associated shift in vegetation (Notaro et al. 2012). Consequently, the genetic diversity presumably present in populations from the hottest and driest parts of a species' ranges may become increasingly important for ensuring the species' persistence throughout the DRECP Plan Area. Maintaining sufficient connectivity corridors, or linkages, between peripheral and core populations and among core habitat areas will also be essential for conservation of desert wildlife. Maintaining corridors or linkages will also be important to allow the movement of populations of plants and animals to facilitate shifts in species ranges as climate changes occur. See Appendix P for the additional climate change context for the DRECP BLM LUPA.

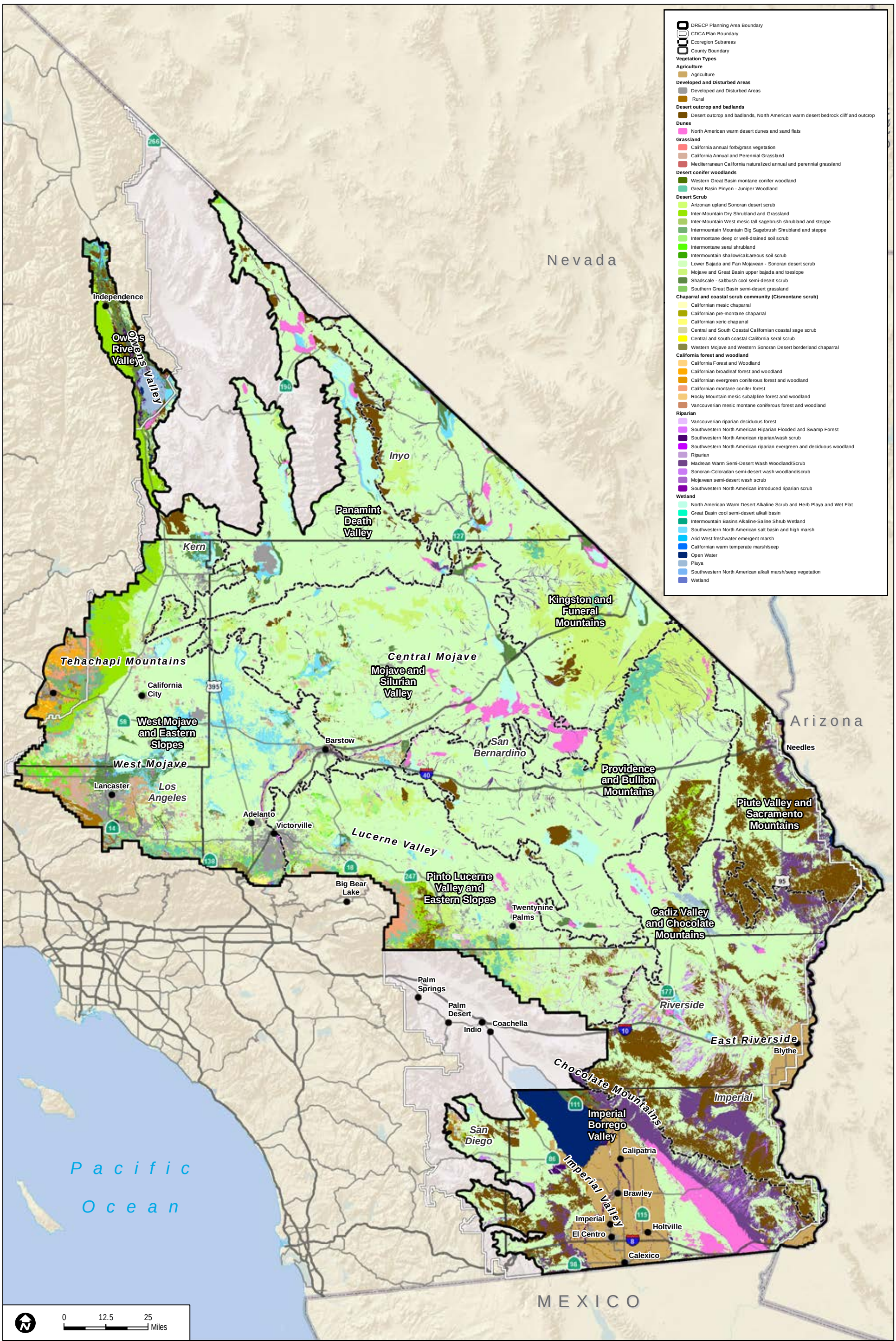
III.7.4.1 Flora, Vegetation Types, and Other Land Covers

III.7.4.1.1 Flora

The California desert flora includes approximately 2,267 plant taxa (species, subspecies, and varieties) native to California, composing about 37% of the total flora in California (Baldwin et al. 2002, as cited in Appendix Q). About 232 taxa (10%) in the California deserts are non-native, which is relatively less than the 15% of California total taxa that are non-native (Baldwin et al. 2002, as cited in Appendix Q). The Mojave Desert in California has about 1,409 native taxa, compared to 1,363 native taxa in the southern Great Basin Province and 709 native taxa in the Colorado/Sonoran Desert (Baldwin et al. 2002, as cited in Appendix Q). The higher level of plant diversity in the Mojave and Great Basin deserts compared to the Colorado/Sonoran Desert reflects the greater climatic and elevation diversity of the Mojave and Great Basin regions.

III.7.4.1.2 Vegetation Types and Other Land Covers

The land cover map for the DRECP Plan Area (Figures III.7-3 through III.7-13) represents a composite of the best available vegetation type and other land cover data for the entire DRECP Plan Area. The land cover map is mapped at fine-scale and medium-scale resolution, which can be used to inform many regional and landscape-scale conservation planning decisions. The land cover map incorporates the current National Vegetation Classification Standard (NVCS) compatible land cover mapping classification and hierarchy.

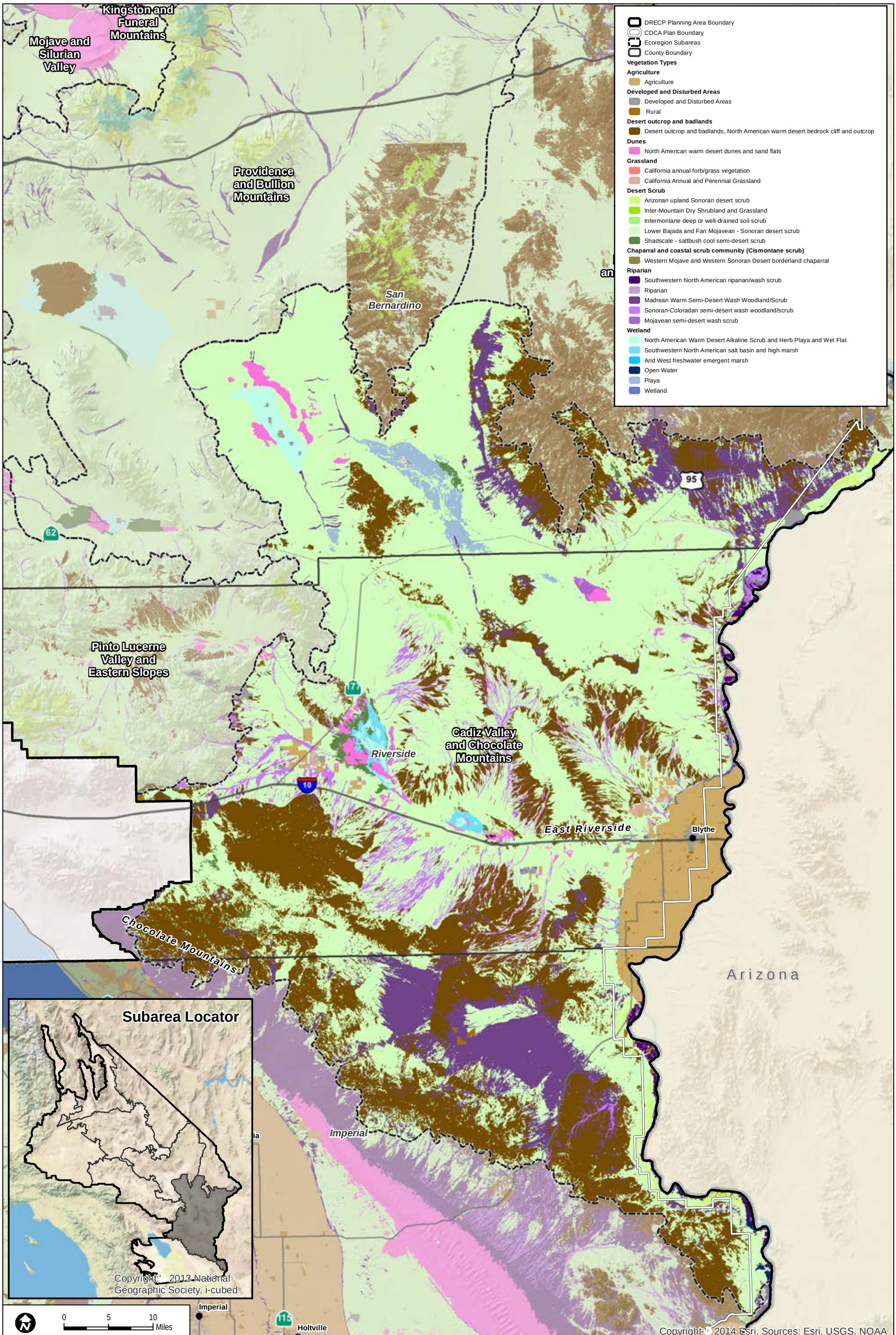


Sources: ESRI (2015); CEC (2013); BLM (2015); CDFW (2014); USFWS (2013)

FIGURE III.7-3

Vegetation Types and Other Land Covers - Ecoregion Subarea Index Map

INTENTIONALLY LEFT BLANK

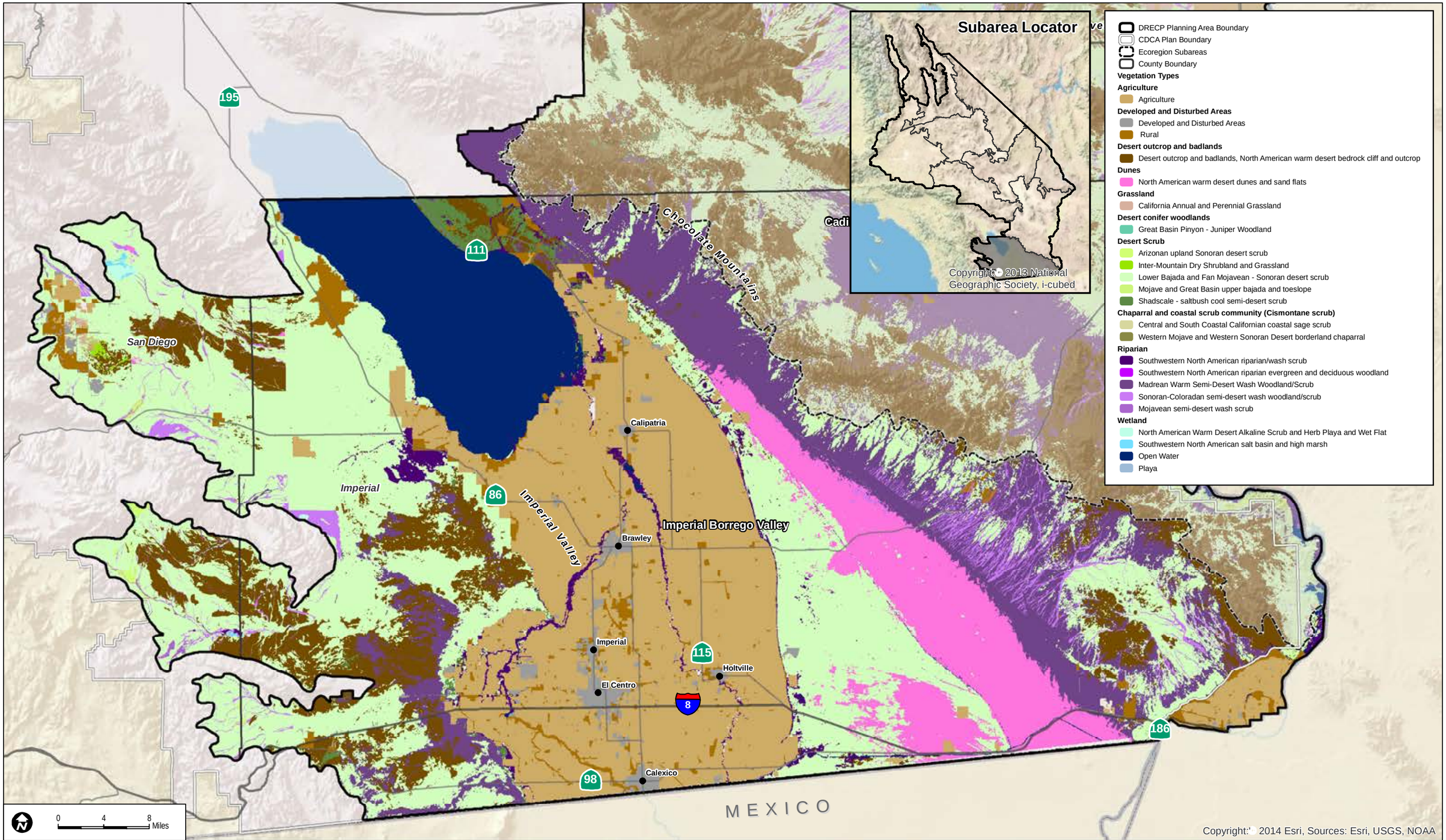


Sources: ESRI (2015); CEC (2013); BLM (2015); CDFW (2014); USFWS (2013

FIGURE III.7-4

Vegetation Types and Other Land Covers - Cadiz Valley and Chocolate Mountains Ecoregion Subarea

INTENTIONALLY LEFT BLANK

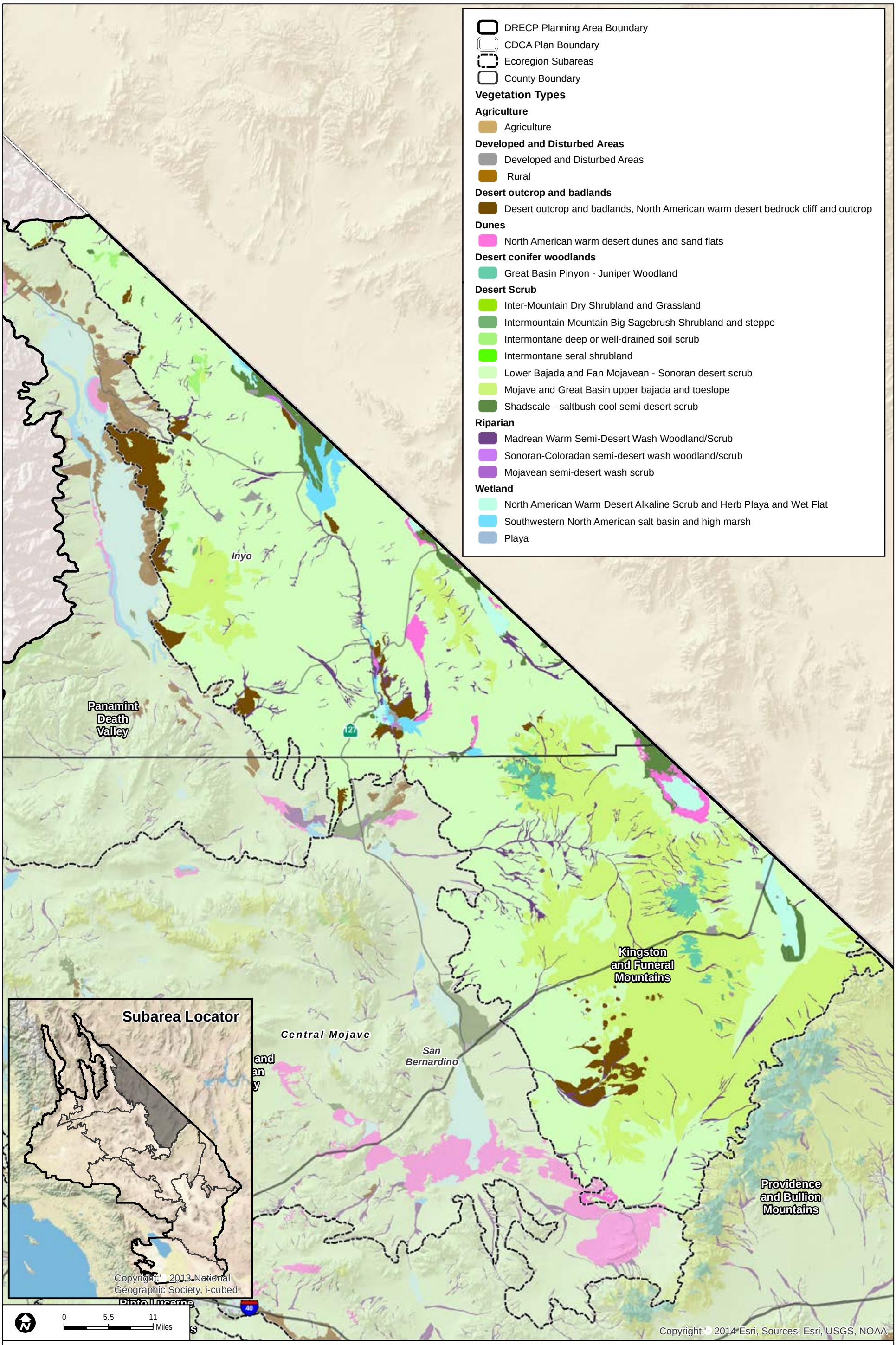


Sources: ESRI (2015); CEC (2013); BLM (2015); CDFW (2014); USFWS (2013

FIGURE III.7-5

Vegetation Types and Other Land Covers - Imperial Borrego Valley Ecoregion Subarea

INTENTIONALLY LEFT BLANK

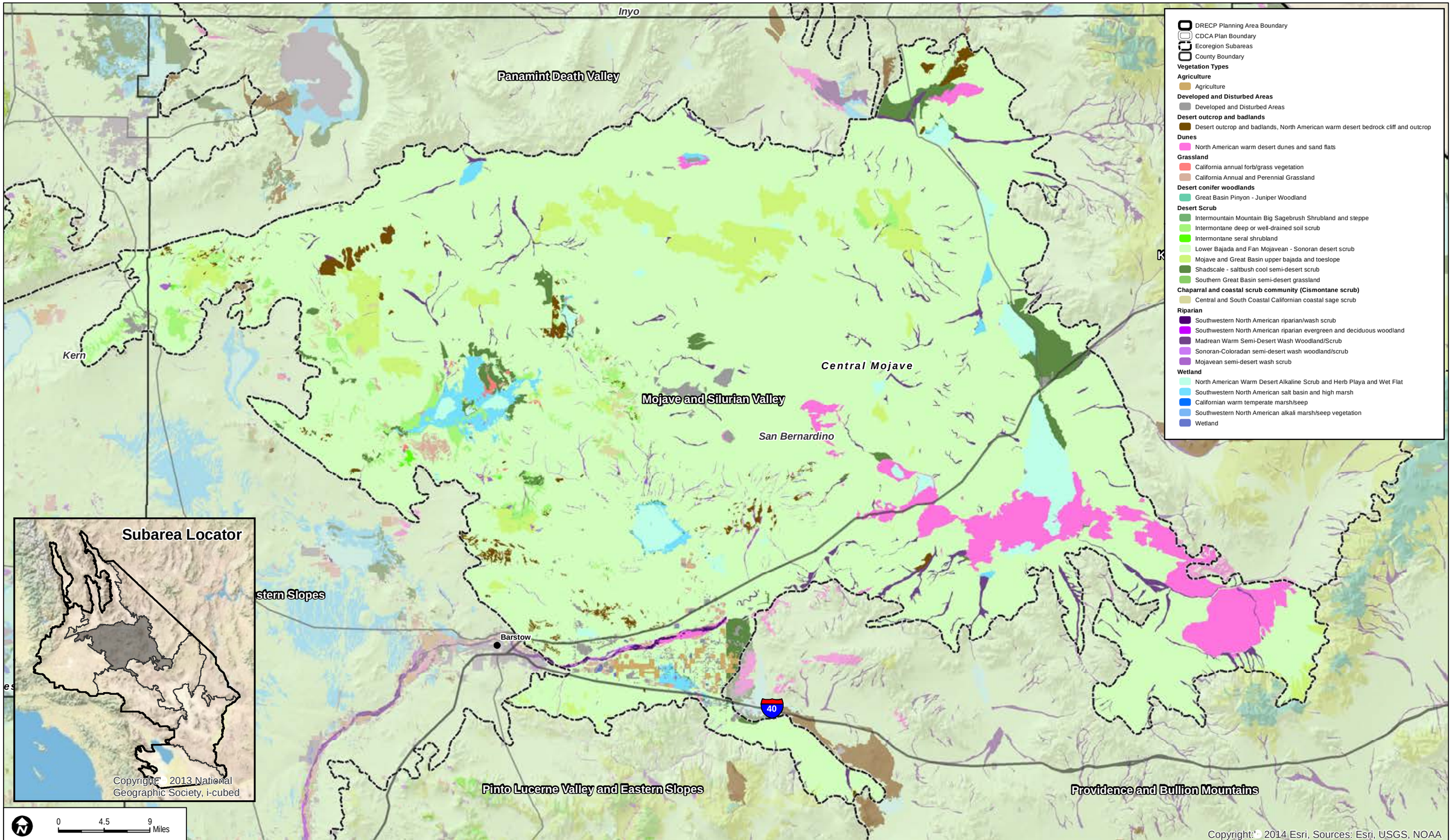


Sources: ESRI (2015); CEC (2013); BLM (2015); CDFW (2014); USFWS (2013

FIGURE III.7-6

Vegetation Types and Other Land Covers - Kingston and Funeral Mountains Ecoregion Subarea

INTENTIONALLY LEFT BLANK

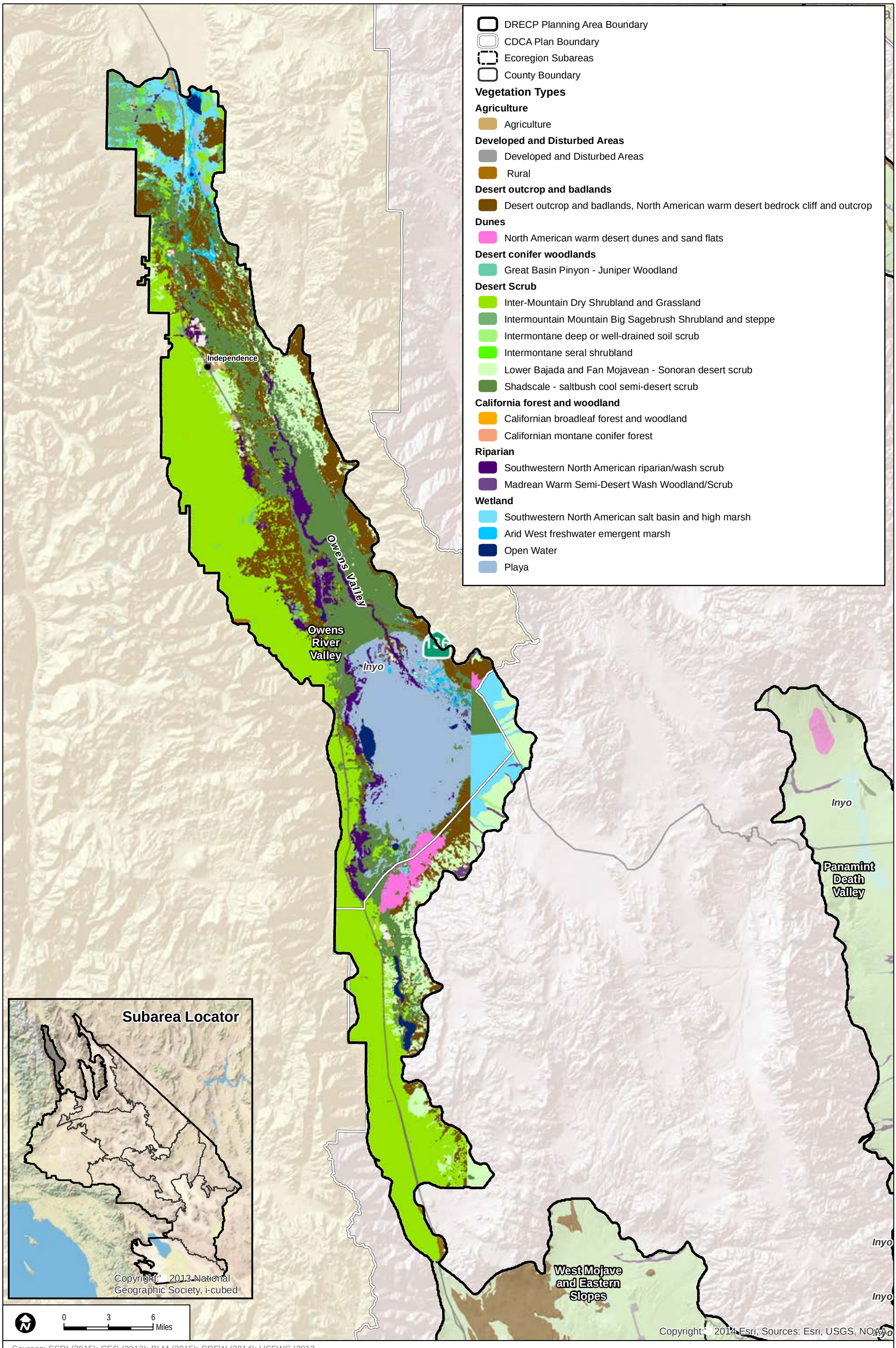


Sources: ESRI (2015); CEC (2013); BLM (2015); CDFW (2014); USFWS (2013

FIGURE III.7-7

Vegetation Types and Other Land Covers - Mojave and Silurian Valley Ecoregion Subarea

INTENTIONALLY LEFT BLANK

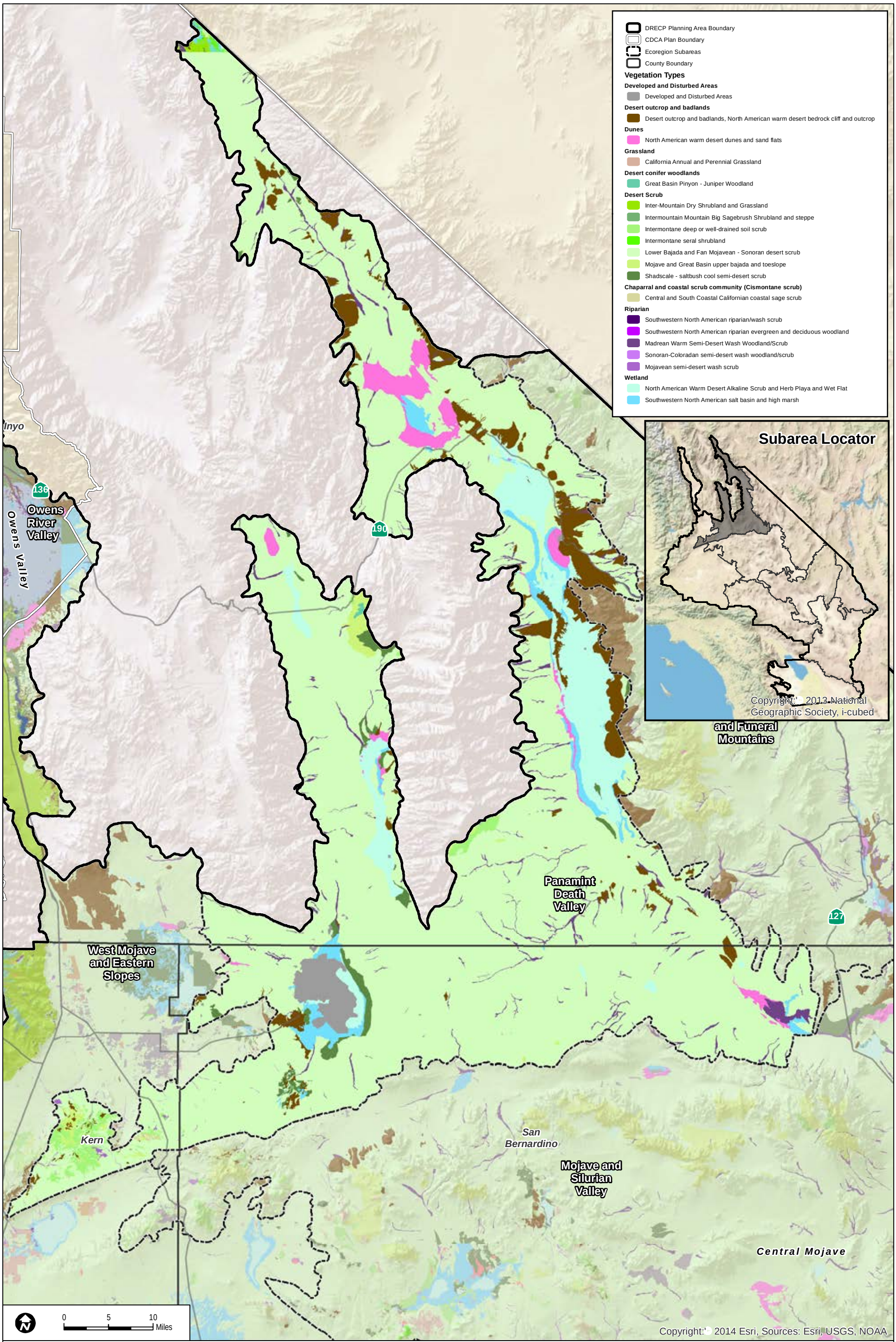


Sources: ESRI (2015); CEC (2013); BLM (2015); CDFW (2014); USFWS (2013

FIGURE III.7-8

Vegetation Types and Other Land Covers - Owens River Valley Ecoregion Subarea

INTENTIONALLY LEFT BLANK

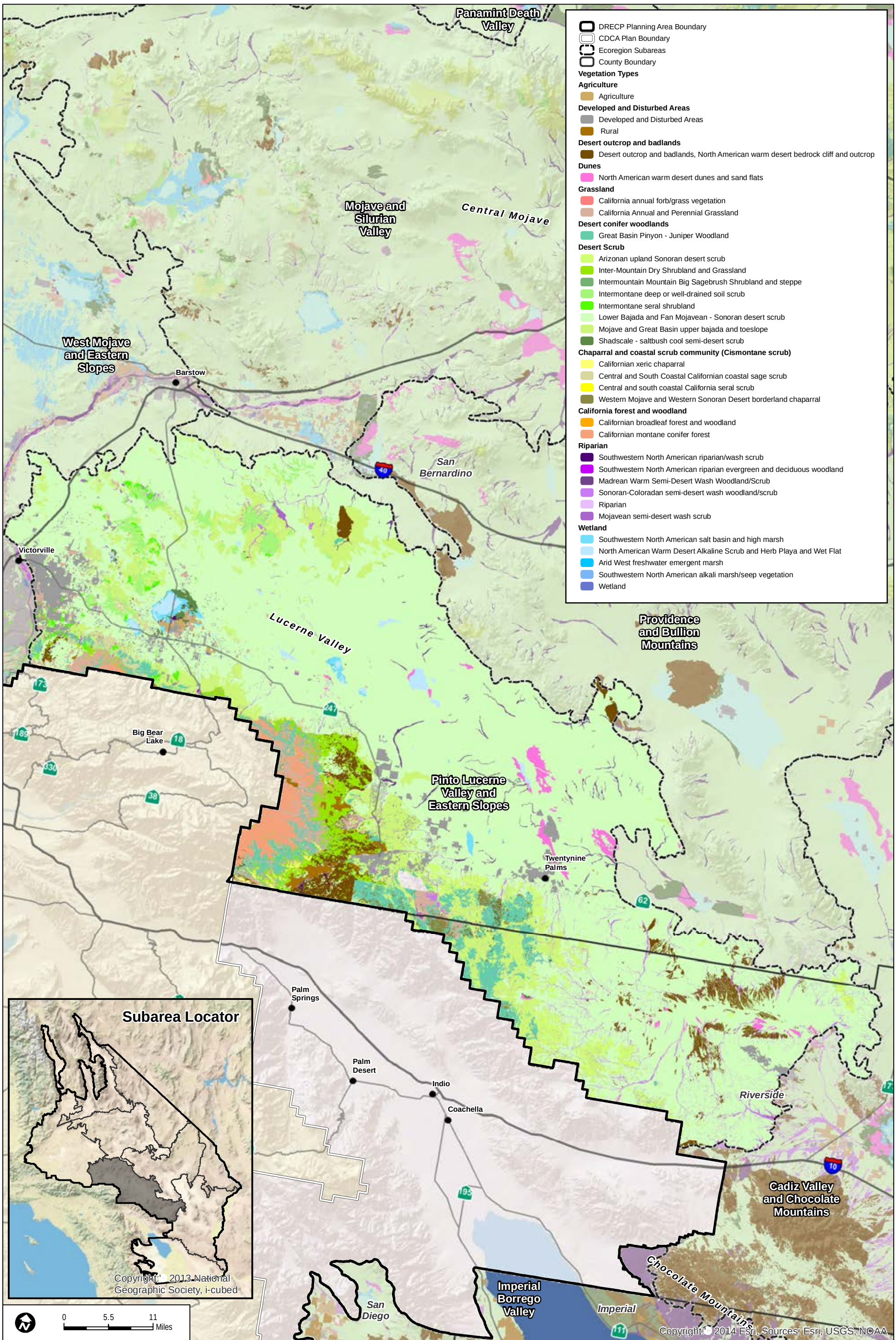


Sources: ESRI (2015); CEC (2013); BLM (2015); CDFW (2014); USFWS (2013

FIGURE III.7-9

Vegetation Types and Other Land Covers - Panamint Death Valley Ecoregion Subarea

INTENTIONALLY LEFT BLANK

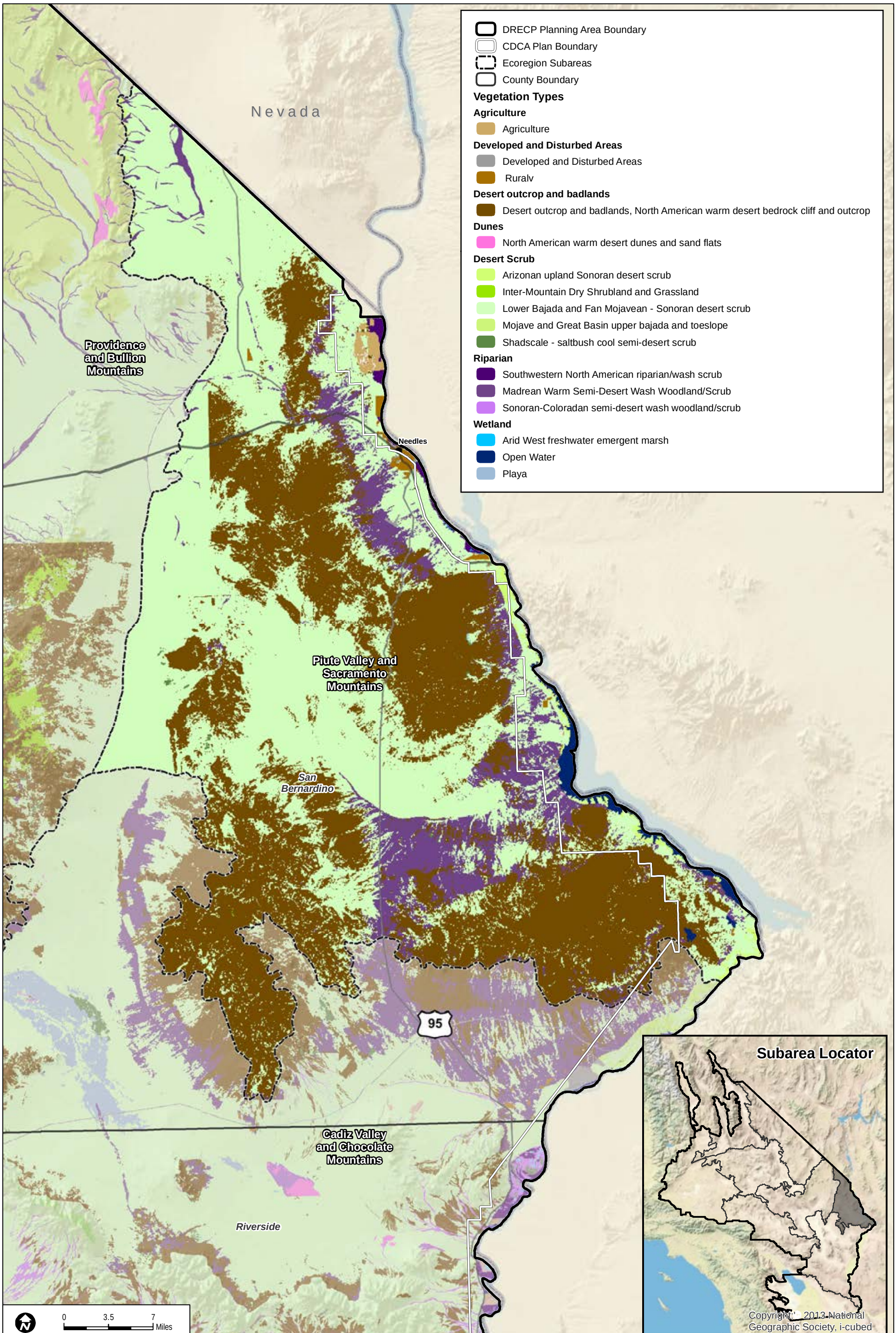


Sources: ESRI (2015); CEC (2013); BLM (2015); CDFW (2014); USFWS (2013

FIGURE III.7-10

Vegetation Types and Other Land Covers - Pinto Lucerne Valley and Eastern Slopes Ecoregion Subarea

INTENTIONALLY LEFT BLANK

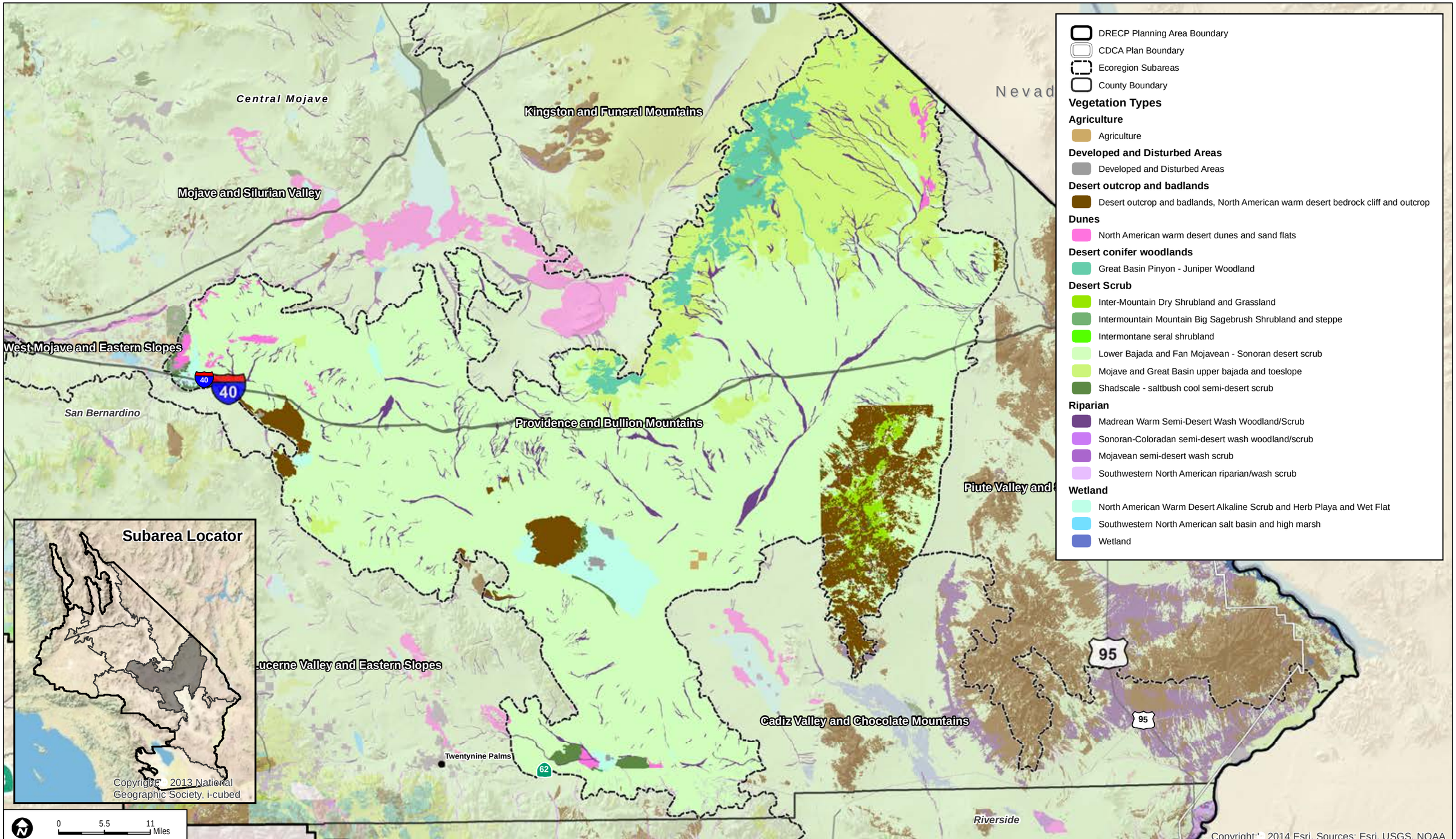


Sources: ESRI (2015); CEC (2013); BLM (2015); CDFW (2014); USFWS (2013

FIGURE III.7-11

Vegetation Types and Other Land Covers - Piute Valley and Sacramento Mountains Ecoregion Subarea

INTENTIONALLY LEFT BLANK

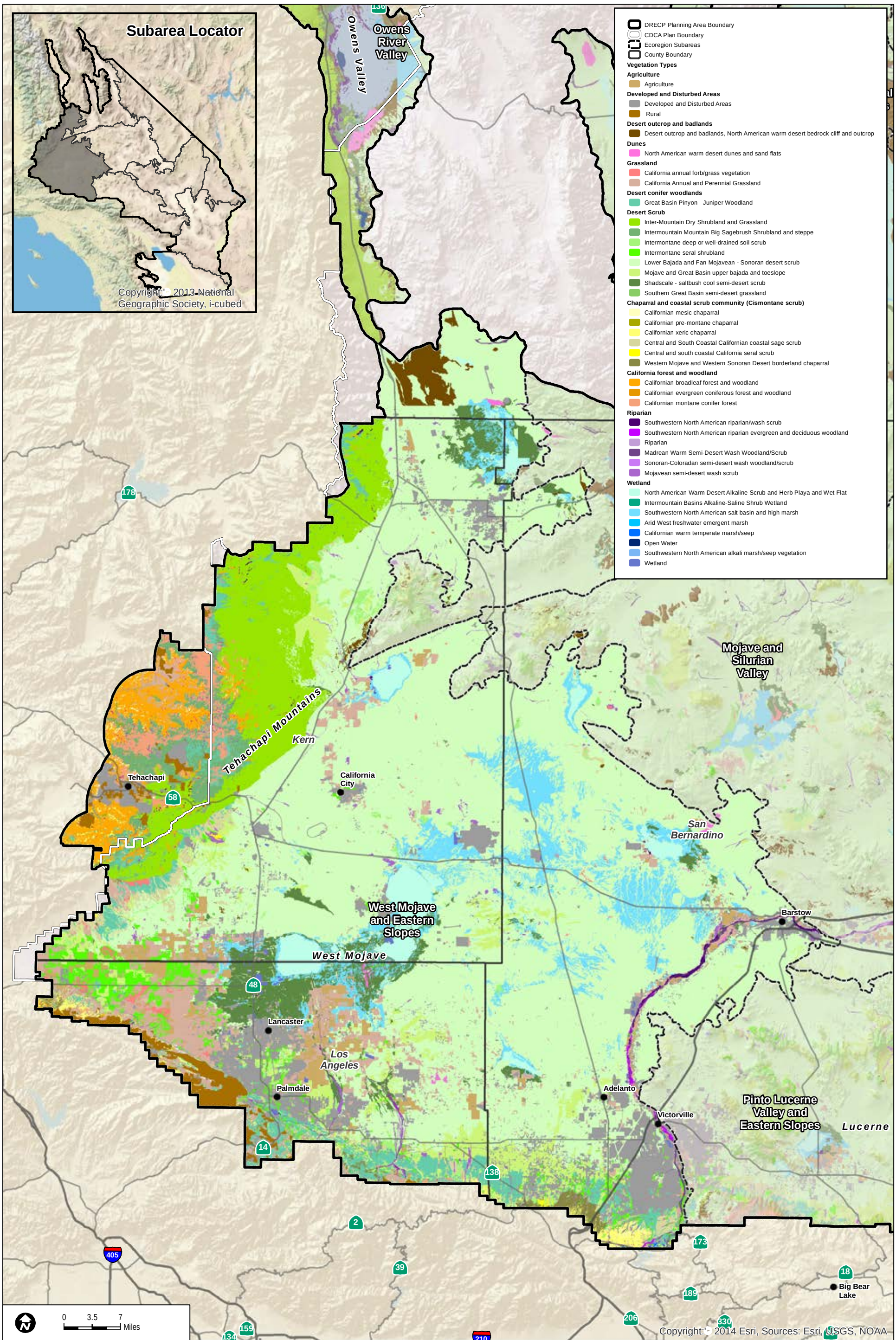


Sources: ESRI (2015); CEC (2013); BLM (2015); CDFW (2014); USFWS (2013

FIGURE III.7-12

Vegetation Types and Other Land Covers - Providence and Bullion Mountains Ecoregion Subarea

INTENTIONALLY LEFT BLANK



Sources: ESRI (2015); CEC (2013); BLM (2015); CDFW (2014); USFWS (2013

FIGURE III.7-13

Vegetation Types and Other Land Covers - West Mojave and Eastern Slopes Ecoregion Subareas

INTENTIONALLY LEFT BLANK

The land cover map was developed from multiple sources by combining fine-scale alliance-level mapping conducted in 2011, 2012, and 2014 for large portions of the Mojave and Colorado/Sonoran deserts within Inyo, Kern, Los Angeles, San Bernardino, Riverside, and Imperial counties with NVCS-based mapping from the Mojave Desert Ecosystem Project, Anza-Borrego Desert State Park, and Rice Valley region in the Cadiz Valley and Chocolate Mountains ecoregion subarea (CDFG 2012a; Aerial Information Systems Inc. 2013; CDFW 2014). In the portions of the DRECP Plan Area where these data sources were not available, the DRECP land cover map uses California Gap (2008 CA-GAP) Vegetation (USGS GAP Program, Lennartz et al. 2008) with updates for agricultural and urban areas. These data include the California Farmland Mapping and Monitoring Program (California Department of Conservation 2009) and a current detailed roads dataset (Dudek and ICF 2011) that capture newer land cover changes associated with rural development.

The Baseline Biology Report (Appendix Q) provides more detail regarding the development of the land cover map and describes various mapping data obtained throughout the DRECP Plan Area.

"Vegetation types" are defined as assemblages of vegetation and the plant and animal species that use that vegetation as habitat. A vegetation type is generally characterized by similarities in vegetation and the natural ecological processes that dominate the community and give it its unique characteristics. For example, a shrubland comprises a number of scrub and chaparral vegetation types and their associated plant and animal species. The distribution of the shrubland, and its various types and associated plants and animals, is influenced by the patterns of microclimate as determined by the interaction of precipitation, elevation, slope and aspect, and fire regime. Vegetation types are defined by a vegetation classification scheme based on the plant species growing together with characteristically uniform structures and habitats, consistent species compositions, and recurrence across the landscape (Jennings et al. 2009, as cited in Appendix Q). Vegetation types are also commonly referred to as vegetation alliances, series, or plant communities (Sawyer et al. 2009, as cited in Appendix Q). Vegetation types are typically characterized by reference to one or more dominant species (Lincoln et al. 1998, as cited in Appendix Q).

The NVCS system has been developed to enable the production of uniform information regarding vegetation resources across the nation, based on vegetation data gathered at varying geographical scales (FGDC 2008, as cited in Dudek and ICF 2011). The NVCS uses a hierarchical system of mapping that includes the following levels:

- Upper levels are predominantly physiognomic, based on physical landscape features and vegetation structure:
    1. Formation class
    2. Formation subclass

3. Formation

- Middle levels are physiognomic, biogeographic, and floristic (i.e., based on species identity):
  1. Division
  2. Macrogroup
  3. Group
- Lower levels are predominantly floristic:
  1. Alliance
  2. Association

Approximately six million acres of the Mojave Desert and Colorado/Sonoran Desert within Inyo, Kern, Los Angeles, San Bernardino, Riverside, and Imperial counties have been mapped recently at the fine-grained alliance level. The remainder of the DRECP Plan Area is described at the group level using a number of different data sources. An alliance is "a floristically defined vegetation type identified by its dominant and/or characteristic species" (Sawyer et al. 2009, as cited in Appendix Q). The group level is defined as "combinations of relatively narrow sets of diagnostic plant species (including dominants and co-dominates), broadly similar composition, and diagnostic growth forms that reflect regional mesoclimate, geology, substrates, hydrology, and disturbance regimes" (Sawyer et al. 2009, as cited in Appendix Q). Floristics play a predominant role in defining alliances in which "diagnostic species, including some from the primary layer, which have moderately similar composition that reflects regional to subregional climate, substrates, hydrology, moisture/nutrient factors, and disturbance regimes" (Sawyer et al. 2009, as cited in Appendix Q).

The particular structure developed for the DRECP was designed to make maximal use of the different levels of mapping methods that have been used throughout the DRECP Plan Area.

Broad Level: "General Vegetation Groups"

At the broadest level, the entire DRECP Plan Area has been divided into nine basic broad descriptive general vegetation groups (e.g., desert scrub, grassland, riparian). They have been selected to be intuitive and understandable and are used primarily as a broad organizational classification.

Mid-Level: "Vegetation Type"

For the purposes of the DRECP, 31 defined vegetation types occur within the DRECP Plan Area, which are directly translated from the mid-levels of the NVCS and align to the "Group" level. These vegetation types underscore the major differences within the wide-ranging

general vegetation groups such as riparian, wetlands, and desert scrub, and help define the floral and faunal biological diversity throughout the DRECP Plan Area that often reflects differences at the subregional scale. Table III.7-11 shows the relationships between the vegetation groups and the vegetation types Plan-wide.

Fine-Grained Level: "Vegetation Alliances"

"Alliance" is the most detailed level of DRECP vegetation type classification, a vegetation unit of uniform floristic composition, habitat and physiognomy, typically defined at the floristic level by diagnostic and dominant plant species, and consistent with the NVCS and Sawyer et al. (2009). State rarity rankings are assigned at the alliance level. Table III.7-11 provides a summary of the vegetation groups under NVCS within the DRECP Plan Area at the vegetation type (i.e., the "Group" level per NVCS) and alliance levels. Where alliance-level data is not available, the vegetation type level (i.e., the "Group" level) is used to characterize the land cover. Descriptions of the vegetation types are provided in Sections III.7.4.2.1 through III.7.4.2.10, but additional detail is provided in the Baseline Biology Report (Appendix Q). Section III.7.4.3 provides tables that include vegetation types and alliances within each ecoregion subarea by general vegetation group.

Rare vegetation types include vegetation alliances with state rarity rankings S1, S2, or S3 (critically imperiled, imperiled, or vulnerable). Occurrences of other vegetation types may be considered locally rare on a regional or site-specific basis but are not considered rare in the context of the DRECP analysis. There are 51 rare vegetation alliances mapped in the DRECP Plan Area that are listed in boldface in Table III.7-11 and shown on Figures III.7-3 through III.7-13.

Table III.7-11
Summary of Vegetation Types and Other Land Cover in DRECP Plan Area

VEGETATION GROUP **Vegetation Type** **Vegetation Alliance[1]**	**Rarity Ranking[2]**	**Acres[3]**
California Forest and Woodland		*150,000*
Californian broadleaf forest and woodland	**—**	**72,000**
Californian broadleaf forest and woodland[3]	—	71,000
Aesculus californica	**S3**	**10**
Quercus chrysolepis tree	S5	50
Quercus lobata	**S3**	**100**
Quercus wislizeni tree	S4	500
Californian montane conifer forest	**—**	**78,000**
Californian montane conifer forest[3]	—	78,000
Pinus sabiniana	S4	200

Table III.7-11
Summary of Vegetation Types and Other Land Cover in DRECP Plan Area

VEGETATION GROUP Vegetation Type Vegetation Alliance[1]	Rarity Ranking[2]	Acres[3]
Chaparral and Coastal Scrub (Cismontane Scrub)		*114,000*
Californian mesic chaparral	**—**	**4,000**
Californian mesic chaparral[3]	—	2,000
Cercocarpus montanus	S4	1,000
Prunus ilicifolia	**S3**	**90**
Quercus berberidifolia	S4	200
Quercus berberidifolia–Adenostoma fasciculatum	S4	200
Californian pre-montane chaparral	**—**	**1,000**
Californian pre-montane chaparral[3]	—	1,000
Arctostaphylos glandulosa	S4	30
Californian xeric chaparral	**—**	**24,000**
Californian xeric chaparral[3]	—	14,000
Adenostoma fasciculatum	S5	9,000
Arctostaphylos glauca	S4	300
Ceanothus crassifolius	NA	<10
Fremontodendron californicum	S4	2,000
Central and south coastal California seral scrub	**—**	**1,000**
Ericameria linearifolia	**S3**	**500**
Eriodictyon (*crassifolium, trichocalyx*)	S4	800
Central and south coastal Californian coastal sage scrub	**—**	**59,000**
Central and south coastal Californian coastal sage scrub[3]	—	40
Eriogonum fasciculatum	S5	59,000
Eriogonum wrightii	**S3**	**10**
Western Mojave and Western Sonoran Desert borderland chaparral	**—**	**24,000**
Western Mojave and Western Sonoran Desert borderland chaparral[3]	—	500
Quercus cornelius-mulleri	S4	11,000
Quercus john-tuckeri	S4	13,000
Desert Conifer Woodland		*287,000*
Great Basin pinyon–juniper woodland	**—**	**287,000**
Great Basin pinyon–juniper woodland[3]	—	129,000
Cercocarpus ledifolius	S4	<10
Juniperus californica (non-locally rare occurrence [LRO])[2]	S4	81,000
Juniperus californica (LRO)	S4, LRO	9,000
Pinus monophylla	S4	67,000
Desert Outcrop and Badlands		*1,871,000*
North American warm desert bedrock cliff and outcrop	**—**	**1,871,000**
North American warm desert bedrock cliff and outcrop[3]	—	1,603,000

Table III.7-11
Summary of Vegetation Types and Other Land Cover in DRECP Plan Area

VEGETATION GROUP Vegetation Type Vegetation Alliance[1]	Rarity Ranking[2]	Acres[3]
Atriplex hymenelytra (non-LRO)	S4	85,000
Atriplex hymenelytra (LRO)	S4, LRO	200
Caesalpinia virgata	**S1?**	**50**
Chorizanthe rigida–Geraea canescens	S4	183,000
Peucephyllum schottii	**S3**	**200**
Desert Scrub		*15,926,000*
Arizonan upland Sonoran desert scrub	**—**	**62,000**
Arizonan upland Sonoran desert scrub[3]	—	19,000
Agave deserti	**S3**	**3,000**
Tetracoccus hallii	**S1**	**30**
Viguiera parishii	S4	39,000
Intermontane deep or well-drained soil scrub	**—**	**118,000**
Intermontane deep or well-drained soil scrub[3]	—	17,000
Ephedra nevadensis (non-LRO)	S4	3,000
Ephedra nevadensis (LRO)	S4, LRO	8,000
Ephedra viridis	S4	12,000
Ericameria teretifolia	S4	9,000
Grayia spinosa	S4	55,000
Krascheninnikovia lanata	**S3**	**8,000**
Lycium andersonii	**S3**	**<10**
Lycium cooperi	**S3?**	**1,000**
Purshia tridentata	**S3**	**4,000**
Intermontane seral shrubland	**—**	**76,000**
Intermontane seral shrubland[3]	—	2,000
Encelia (actoni, virginesis)	**S3**	**6,000**
Ericameria cooperi	S4?	3,000
Ericameria nauseosa	S5	64,000
Gutierrezia sarothrae	**S3**	**90**
Intermountain dry shrubland and grassland	**—**	**441,000**
Intermountain mountain big sagebrush shrubland and steppe	**—**	**76,000**
Intermountain mountain big sagebrush shrubland and steppe[3]	—	68,000
Artemisia tridentata	S5	600
Intermountain west mesic tall sagebrush shrubland and steppe		7,000
Lower bajada and fan Mojavean–Sonoran desert scrub	**—**	**13,354,000**
Lower bajada and fan Mojavean–Sonoran desert scrub[3]	—	8,852,000
Ambrosia dumosa	S5	173,000
Atriplex polycarpa	S4	281,000
Cylindropuntia bigelovii	**S3**	**3,000**

Table III.7-11
Summary of Vegetation Types and Other Land Cover in DRECP Plan Area

VEGETATION GROUP Vegetation Type Vegetation Alliance[1]	Rarity Ranking[2]	Acres[3]
Encelia farinosa	S4	72,000
Fouquieria splendens	**S3**	**3,000**
Larrea tridentata	S5	483,000
Larrea tridentata–Ambrosia dumosa	S5	3,103,000
Larrea tridentata–Encelia farinosa	S4	384,000
Mojave and Great Basin upper bajada and toeslope	**—**	**1,439,000**
Mojave and Great Basin upper bajada and toeslope[3]	—	1,085,000
Coleogyne ramosissima (non-LRO)	S4	35,000
Coleogyne ramosissima (LRO)	S4, LRO	15,000
Menodora spinescens	**S3**	**100**
Salazaria mexicana	S4	37,000
Yucca brevifolia	**S3**	**190,000**
Yucca schidigera	S4	76,000
Shadscale–saltbush cool semi-desert scrub	**—**	**361,000**
Shadscale–saltbush cool semi-desert scrub[3]	—	198,000
Atriplex canescens	S4	38,000
Atriplex confertifolia	S4	125,000
Southern Great Basin semi-desert grassland	**—**	**300**
Southern Great Basin semi-desert grassland[3]	—	40
Achnatherum speciosum	**S2**	**300**
Dune and Sand Based		*414,000*
North American warm desert dunes and sand flats	**—**	**414,000**
North American warm desert dunes and sand flats[3]	—	290,000
Achnatherum hymenoides	**S1**	**600**
Dicoria canescens–Abronia villosa	**S3**	**10,000**
Panicum urvilleanum	**S1**	**700**
Pleuraphis rigida	**S2**	**30,000**
***Prosopis glandulosa* coppice dunes**	**S3?**	**79,000**
Wislizenia refracta	**S2**	**3,000**
Grassland		*244,000*
California annual and perennial grassland		**234,000**
California annual and perennial grassland[3]	—	55,000
Brassica nigra and other mustards	—	1,000
Bromus rubens–Schismus (arabicus, barbatus)	—	5,000
California annual and perennial grassland (native component) Mapping Unit (non-LRO)	—	80,000
California annual and perennial grassland (native component) Mapping Unit (LRO)	LRO	5,000

Table III.7-11
Summary of Vegetation Types and Other Land Cover in DRECP Plan Area

VEGETATION GROUP Vegetation Type Vegetation Alliance[1]	Rarity Ranking[2]	Acres[3]
Mediterranean California naturalized annual and perennial grassland	—	87,000
California annual forb/grass vegetation	**—**	**9,000**
California annual forb/grass vegetation[3]	—	5,000
Amsinckia (menziesii, tessellata)	S4	400
Eschscholzia (californica) (LRO)	S4, LRO	4,000
Lasthenia californica–Plantago erecta–Vulpia microstachys (LRO)	S4, LRO	100
Riparian		*1,223,000*
Madrean warm semi-desert wash woodland/scrub	**—**	**910,000**
Mojavean semi-desert wash scrub	**—**	**37,000**
Mojavean semi-desert wash scrub[3]	—	1,000
Ambrosia salsola	S4	19,000
Artemisia tridentata* ssp. *parishii	**S3?**	**500**
Bebbia juncea	**S3?**	**<10**
Brickellia incana	**S2?**	**300**
Ephedra californica	**S3**	**6,000**
Ericameria paniculata	**S3**	**1,000**
Epidospartum squamatum	**S3**	**6,000**
Prunus fasciculata	**S3**	**2,000**
Riverine[4]	**—**	**800**
Sonoran–Coloradan semi-desert wash woodland/scrub	**—**	**198,000**
Sonoran–Coloradan semi-desert wash woodland/scrub[3]	—	2,000
Acacia greggii	S4	22,000
Chilopsis linearis (microphyll)	**S3**	**4,000**
Hyptis emoryi	**S3**	**9,000**
Parkinsonia florida–Olneya tesota (microphyll)	S4	136,000
Pluchea sericea	**S3**	**2,000**
Prosopis glandulosa (microphyll)	**S3**	**10,000**
Psorothamnus spinosus (microphyll)	**S3**	**13,000**
Southwestern North American riparian evergreen and deciduous woodland	**—**	**6,000**
Southwestern North American riparian evergreen and deciduous woodland[3]	—	2,000
Alnus rhombifolia	S4	<10
Platanus racemosa	**S3**	**100**
Populus fremontii	**S3**	**3,000**
Salix gooddingii	**S3**	**<10**
Salix laevigata	**S3**	**300**

Table III.7-11
Summary of Vegetation Types and Other Land Cover in DRECP Plan Area

VEGETATION GROUP Vegetation Type Vegetation Alliance[1]	Rarity Ranking[2]	Acres[3]
Washingtonia filifera	**S2**	**<10**
Southwestern North American riparian/wash scrub	**—**	**70,000**
Southwestern North American riparian/wash scrub[3]	—	500
Arundo donax	—	10
Baccharis emoryi	**S2?**	**50**
Baccharis salicifolia	S4	200
Baccharis sergiloides	**S3**	**<10**
Forestiera pubescens	**S2**	**100**
Salix exigua	S4	200
Salix lasiolepis	S4	60
Sambucus nigra	**S3**	**70**
Southwestern North American introduced riparian scrub	—	58,000
Tamarix spp.	—	11,000
Wetland		*1,022,000*
Arid West freshwater emergent marsh	**—**	**4,000**
Arid West freshwater emergent marsh[3]	—	38,000
Typha (angustifolia, domingensis, latifolia)	S5	100
Californian warm temperate marsh/seep	**—**	**400**
Juncus arcticus (var. *balticus, mexicanus*)	S4	400
North American warm desert alkaline scrub and herb playa and wet flat	**—**	**391,000**
North American warm desert alkaline scrub and herb playa and wet flat[3]	—	391,000
Sarcobatus vermiculatus	S4	30
Open water[4]	**—**	**214,000**
Playa[4]	**—**	**78,000**
Southwestern North American salt basin and high marsh	**—**	**325,000**
Southwestern North American salt basin and high marsh[3]	—	89,000
Allenrolfea occidentalis	**S3**	**7,000**
Atriplex lentiformis	S4	500
Atriplex parryi	**S2?**	**7,000**
Atriplex spinifera	S4	177,000
Distichlis spicata	S4	400
Frankenia salina	**S3**	**100**
Isocoma acradenia	**S2?**	**40**
Southwestern North American alkali marsh/seep vegetation	—	300
Sporobolus airoides	**S2**	**<10**
Suaeda moquinii	S4	44,000

Table III.7-11
Summary of Vegetation Types and Other Land Cover in DRECP Plan Area

VEGETATION GROUP Vegetation Type Vegetation Alliance[1]	Rarity Ranking[2]	Acres[3]
Lacustrine[4]	**—**	**9,000**
Other Land Covers		*1,335,000*
Agriculture	**—**	**733,000**
Developed and disturbed areas	**—**	**469,000**
Rural		**125,000**
Not mapped[5]	**—**	**9,000**
	Total	**22,586,000**

1 Only a portion of the DRECP Plan Area, approximately six million acres of the Mojave and Colorado/Sonoran deserts within Inyo, Kern, Los Angeles, San Bernardino, Riverside, and Imperial counties, has been mapped at the more specific alliance level. Where alliance-level data is not available, the higher vegetation type level is used to characterize the land cover.

2 State Rankings: S1 = critically imperiled; S2 = imperiled; S3 = vulnerable; S4 = apparently secure; S5 = secure; ? = inexact numeric rank (NatureServe 2012). LRO = Locally Rare Occurrence. Those in bold typeface are considered rare in the context of the DRECP.

3 Where the alliance name is the same as the vegetation type name, the vegetation type is undifferentiated and not described at the alliance level.

4 This is a land cover type and not specifically a "vegetation type."

5 Small portions of the DRECP Plan Area have been characterized as Not Mapped and are grouped as Other Land Covers. These areas include isolated segments of roadways, canals, and agricultural lands in the Imperial Valley that were not specifically categorized and a narrow strip of the DRECP Plan Area at the U.S.-Mexico border not specifically categorized.

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

III.7.4.2 Vegetation Types and Land Covers

The vegetation types and other land covers across the entire DRECP Plan Area are shown in Figure III.7-3. Figures III.7-4 through III.7-13 show the vegetation types and other land covers by ecoregion subarea.

III.7.4.2.1 California Forest and Woodland

The California forest and woodland vegetation types in the DRECP Plan Area make up approximately 0.7% (150,000 acres) of the land cover and are limited to the higher elevations in the DRECP Plan Area, where they occur primarily in the Tehachapi Mountains in Kern County and the mountains in southwest San Bernardino County. The California forest and woodland vegetation types are found within the Owens River Valley ecoregion subarea, Pinto Lucerne Valley and Eastern Slopes ecoregion subarea, and West Mojave and Eastern Slopes ecoregion subarea (Figures III.7-8, III.7-10, and III.7-13). Two vegetation types of this vegetation group occur in the DRECP Plan Area: Californian broadleaf forest and woodland and Californian montane conifer forest.

III.7.4.2.2 Chaparral and Coastal Scrub

The chaparral and coastal scrub vegetation types make up 0.5% of the DRECP Plan Area (114,000 acres) (Figure III.7-3). There are two scrub vegetation types and four chaparral vegetation types in the DRECP Plan Area (Table III.7-11).

Both the central and south coastal California coastal sage scrub and central and south coastal California seral scrub vegetation types fall within the California coastal scrub macrogroup, which is characterized by a dominance of drought-deciduous shrubs and sometimes deep-rooted sclerophyllous shrubs (woody plants with small leathery evergreen leaves). Central and south coastal California seral scrub is found east of the Tehachapi Mountains near Mojave and in the southern portion of the DRECP Plan Area from Mountain Top Junction east of Highway 138 east to Mojave River Forks Regional Park (Figures III.7-10 and III.7-13). Central and south coastal Californian coastal sage scrub occurs in the Fort Irwin area and in scattered locations west to the DRECP Plan Area boundary (Figures III.7-5, III.7-7, III.7-9, III.7-10, and III.7-13).

The California chaparral macrogroup includes three groups: Californian mesic chaparral, Californian xeric chaparral, and Californian pre-montane chaparral, with Californian xeric chaparral being the most common chaparral vegetation type in the DRECP Plan Area. Californian mesic chaparral occurs in the Tehachapi Mountains and at the base of the San Gabriel Mountains near Antelope Valley in the western portion of the DRECP Plan Area (Figure III.7-13). Californian pre-montane chaparral is primarily found in the Tehachapi Mountains in the DRECP Plan Area (Figure III.7-13). Californian xeric chaparral occurs along the mountainous areas on the western and southern boundaries of the DRECP Plan Area within the West Mojave and Eastern Slopes ecoregion subarea and at the foothills of the San Gabriel Mountains in the Pinto and Lucerne Valley and Eastern Slopes ecoregion subarea (Figures III.7-10 and III.7-13).

Western Mojave and western Sonoran Desert borderland chaparral occurs in scattered locations along the southern boundary of the DRECP Plan Area from the Tehachapi Mountains in the West Mojave and Eastern Slopes ecoregion subarea southeast to the little San Bernardino Mountains in the Pinto Lucerne Valley and Eastern Slopes ecoregion subarea (Figures III.7-4, III.7-5, III.7-10, and III.7-13).

III.7.4.2.3 Desert Conifer Woodland

The desert conifer woodlands in the DRECP Plan Area form approximately 1.3% (287,000 acres) of the land cover and occur primarily in the Tehachapi Mountains area, along the northwestern boundary of the DRECP Plan Area to the San Gabriel Mountains, in the Providence and Bullion Mountains, Kingston and Funeral Mountains, and the Clark Mountain Range (Figures III.7-5 through III.7-10, III.7-12, and III.7-13). One desert conifer

woodland vegetation type occurs in the DRECP Plan Area: Great Basin pinyon–juniper woodland (Table III.7-11).

III.7.4.2.4 Desert Outcrop and Badlands

Desert outcrop and badlands cover approximately 8.3% (1,871,000 acres) of the DRECP Plan Area. This vegetation type includes a single group: North American warm desert bedrock cliff and outcrop (Table III.7-11). North American warm desert bedrock cliff and outcrop is characterized by areas in which vegetation is largely absent. This natural vegetation type occurs throughout much of the DRECP Plan Area (Figures III.7-4 through III.7-13), but is most prevalent in the eastern and southern portions from the Piute Valley south (Figures III.7-4, III.7-5, and III.7-11).

III.7.4.2.5 Desert Scrub

The desert scrub vegetation types cover the majority of the DRECP Plan Area (approximately 70.5% or 15,926,000 acres) (Figure III.7-3). There are eight groups in the DRECP Plan Area and one vegetation type mapped at the broader macrogroup level—intermountain dry shrubland and grassland (Table III.7-11).

Intermountain dry shrubland and grassland vegetation occurs from the Owens River Valley south through the foothills of the Tehachapi Mountains along the northwestern boundary of the DRECP Plan Area. It also occurs at the foothills of the San Gabriel Mountains, in the Piute and Old Woman mountains, and in the Borrego Valley (Figures III.7-4 through III.7-6 and Figures III.7-8 through III.7-13).

The intermontane deep or well-drained soil scrub, Mojave and Great Basin upper bajada and toeslope, and Southern Great Basin semi-desert grassland groups are categorized within the intermountain dry shrubland and grassland vegetation macrogroup. Intermontane deep or well-drained soil scrub is mapped primarily along the southern edge of the West Mojave and Eastern Slopes in the DRECP Plan Area following northwest to the foothills of the Scodie Mountains (Figure III.7-13), the mountainous regions in the northern portion of the Pinto Lucerne Valley and Eastern Slopes ecoregion subarea (Figure III.7-10), and from the Calico Mountains in the Mojave and Silurian Valley ecoregion subarea (Figure III.7-7). Intermontane deep or well-drained soil scrub is also found in the Cadiz Valley and Chocolate Mountains (Figure III.7-4), Kingston and Funeral Mountains (Figure III.7-6), Owens River Valley (Figure III.7-8), and Panamint Death Valley (Figure III.7-9) ecoregion subareas. Mojave and Great Basin upper bajada and toeslope is fairly common throughout much of the DRECP Plan Area (Figures III.7-5 through III.7-7, and Figures III.7-9 through III.7-13) except the southern portion. It is most common in the Kingston and Funeral Mountains and Providence and Bullion Mountains in the eastern portion of the DRECP Plan Area (Figures III.7-6 and

III.7-12). Southern Great Basin semi-desert grassland occurs in some scattered locations in the Superior Valley in the Mojave and Silurian Valley ecoregion subarea and in the northern portion of the West Mojave and Eastern Slopes ecoregion subarea (Figures III.7-7 and III.7-13).

The majority of the scrub vegetation types in the DRECP Plan Area consist of two groups: lower bajada and fan Mojavean–Sonoran desert scrub and Arizonan upland Sonoran desert scrub. Lower bajada and fan Mojavean–Sonoran desert scrub is found throughout most of the DRECP Plan Area except for the mountainous regions along the border of the West Mojave and Eastern Slopes ecoregion subarea and substantial portions of the Owens River Valley, Kingston and Funeral Mountains, and Imperial Borrego Valley ecoregion subareas (Figure III.7-3; Figures III.7-4 through III.7-13). Arizonan upland Sonoran desert scrub primarily occurs along the Colorado River and in the southern portion of the Pinto Lucerne Valley and Eastern Slopes ecoregion subarea (Figure III.7-10), but also occurs in the Cadiz Valley and Chocolate Mountains (Figure III.7-4), Imperial Borrego Valley (Figure III.7-5), and Piute Valley and Sacramento Mountains (Figure III.7-11) ecoregion subareas.

Intermontane seral shrubland occurs primarily in the mountainous regions along the western boundary of the DRECP Plan Area in the West Mojave and Eastern Slopes and Pinto Lucerne Valley and Eastern Slopes ecoregion subareas (Figure III.7-3; Figures III.7-6 through III.7-10, and Figures III.11 through III.13). Intermountain mountain big sagebrush shrubland and steppe occurs primarily in the Tehachapi Mountains, but it also occurs in the northernmost portion of the DRECP Plan Area in the Owens River Valley, and in the Kingston Range, the Ivanpah Mountains, Providence Mountains, and San Bernardino Mountains (Figures III.7-6 through III.7-10, III.7-12, and III.7-13).

Shadscale–saltbush cool semi-desert scrub is scattered throughout much of the DRECP Plan Area but is most concentrated in the Owens River Valley, northeast of the Salton Sea, and the area around Lancaster (Figure III.7-3; Figures III.7-4 through III.7-13).

III.7.4.2.6 Dune and Sand-Based Vegetation

Dunes make up approximately 1.8% (414,000 acres) of the DRECP Plan Area and include one vegetation type—North American warm desert dunes and sand flats (Table III.7-11). This vegetation type occurs throughout the DRECP Plan Area (Figure III.7-3; Figures III.7-4 through III.7-13), with approximately 16 named dune systems, including approximately 12 systems in the Mojave Desert and lower Great Basin Desert and 4 systems in the Sonoran Desert, as well as numerous smaller dunes. The largest dune area, which includes the Algodones Dunes, is located in the East Mesa–Sand Hill portion of the Sonoran Desert (Figure III.7-5).

III.7.4.2.7 Grassland

Grassland vegetation types cover approximately 1.1% (244,000 acres) of the DRECP Plan Area and include the macrogoup California annual and perennial grassland and the more specific California annual forb/grass vegetation group (Table III.7-11). California annual and perennial grassland is most common in the western portion of the DRECP Plan Area, especially along the boundary north of the San Bernardino National Forest (Figures III.7-4, III.7-5, III.7, III.7-9, III.7-10, and III.7-13). California annual forb/grass vegetation occurs mainly in the western portion of the DRECP Plan Area in the West Mojave and Eastern Slopes and Mojave and Silurian Valley ecoregion subareas, although there is also a small amount in the Ord Mountains of the Pinto Lucerne Valley and Eastern Slopes ecoregion subarea (Figures III.7-4, III.7-7, III.7-10, and III.7-13).

III.7.4.2.8 Riparian

Riparian vegetation types constitute approximately 5.4% (1,223,000 acres) of the DRECP Plan Area and include a riverine category and five vegetation types: Madrean warm semi-desert wash woodland/scrub, Mojavean semi-desert wash scrub, Sonoran–Coloradan semi-desert wash woodland/scrub, Southwestern North American riparian evergreen and deciduous woodland, and Southwestern North American riparian/wash scrub (Figure III.7-3, Table III.7-11). About 75% of the riparian vegetation is mapped only at the macrogroup level as Madrean warm semi-desert wash woodland/scrub.

Madrean warm semi-desert wash woodland/scrub is mapped in defined desert washes distinctly different in plant composition and/or cover compared to adjacent upland vegetation types, in areas that did not receive alliance level mapping. This conglomerate group has been defined as a vegetation type for the purposes of the DRECP and is mapped in all of the DRECP Plan Area's ecoregion subareas (Figure III.7-3; Figures III.7-4 through III.7-13) but is most common in the Cadiz and Chocolate Mountains and Imperial Borrego Valley (Figures III.7-4 and III.7-5). Microphyll woodlands may occur within this vegetation type.

Mojavean semi-desert wash scrub is one of two groups or vegetation types within the Madrean warm semi-desert wash woodland/scrub macrogroup. This vegetation type occurs in many scattered locations throughout the DRECP Plan Area (Figures III.7-4 through III.7-7, III.7-9, III.7-10, III.7-12, and III.7-13), but is most common in the western portion of the DRECP Plan Area (Figure III.7-13), and is differentiated from the Sonoran–Coloradan semi-desert wash woodland/scrub vegetation type by specific alliances.

Sonoran–Coloradan semi-desert wash woodland/scrub is the second group or vegetation type within the Madrean warm semi-desert wash woodland/scrub macrogroup. This vegetation type occurs primarily in the southern portion of the DRECP Plan Area from the Twentynine Palms area southeast to the Palo Verde Valley and in the Imperial Borrego

Valley area (Figures III.7-4 through III.7-7 and Figures III.7-9 through III.7-13), and is restricted to the Colorado/Sonoran Desert biome. Microphyll woodlands, as defined in the DRECP, are comprised of four alliances within this vegetation type.

Southwestern North American riparian evergreen and deciduous woodlands are characterized by riparian winter deciduous, broad-leaved trees or tall shrubs, including Fremont cottonwood (*Populus fremontii*), California sycamore (*Platanus racemosa*), and/or willows (*Salix* spp.). This vegetation type occurs primarily in the Tehachapi Mountains and along the Mojave and Colorado rivers within the DRECP Plan Area (Figures III.7-5, III.7-7, III.7-9, III.7-10, and III.7-13).

Southwestern North American riparian/wash scrub is characterized by native or non-native riparian shrubs and lacks a significant cover or presence of riparian trees. This vegetation type primarily occurs in the Owens Valley and Imperial Valley, but occurs elsewhere throughout the DRECP Plan Area (Figures III.7-4, III.7-5, and III.7-7 through III.7-13).

III.7.4.2.9 Wetland

Wetland vegetation types cover approximately 4.5% (1,022,000 acres) of the DRECP Plan Area and include five vegetation types (Table III.7-11). Arid West freshwater emergent marsh occurs primarily in the Owens River Valley and the West Mojave and Eastern Slopes ecoregion subareas, but also occurs in other ecoregion subareas (Figures III.7-4, III.7-8, III.7-10, III.7-11, and III.7-13). Californian warm temperate marsh/seep is present in the southern portion of the West Mojave and Eastern Slopes ecoregion subarea and near the Paradise Range in the Mojave and Silurian Valley ecoregion subarea (Figures III.7-7 and III.7-13). North American warm desert alkaline scrub and herb playa and wet flat is widespread throughout much of the DRECP Plan Area and ranges from Edwards Air Force Base (EAFB) to Death Valley in the northeast, to Ivanpah Valley along the eastern boundary, and southeast to the Chuckwalla Valley. Its southwestern extent in the DRECP Plan Area is in the Anza-Borrego State Park (Figures III.7-4 through III.7-7, III.7-9, III.7-10, III.7-12, and III.7-13). Most of the DRECP Plan Area's Southwestern North American salt basin and high marsh occurs in the West Mojave and Eastern Slopes ecoregion subarea, but this vegetation type is relatively wide ranging, spanning from the Owens Valley to south of Blythe and west of the Salton Sea (Figures III.7-4 through III.7-10, III.7-12, and III.7-13).

Open Water, Playa, and Lacustrine Areas

Open water accounts for approximately 21% (215,000 acres) of the wetland vegetation types in the DRECP Plan Area (Figures III.7-4, III.7-5, III.7-8, III.7-11, and III.7-13), the majority of which is the Salton Sea. Lacustrine makes up less than 1% of the wetland vegetation types in the DRECP Plan Area and occurs along the California Aqueduct in the

southern portion of the West Mojave and Eastern Slopes ecoregion subarea and areas near Ridgecrest in the northern portion of this ecoregion subarea, as well as locations in between. It is also scattered throughout the Mojave Valley area east of Barstow and occurs in the Pinto Lucerne Valley and Eastern Slopes and Cadiz Valley and Chocolate Mountains ecoregion subareas (Figures III.7-4, III.7-7, III.7-10, III.7-12, and III.7-13). Playa consists of 8% of the wetland vegetation types and is most prevalent in the Owens River Valley and Ward Valley, but occurs elsewhere as well (Figures III.7-4, III.7-5, III.7-6, III.7-8, and III.7-11). Riverine is mapped in areas of rivers or streams that lack substantial cover of riparian vegetation. This land cover type is primarily mapped along the Mojave and Colorado rivers (Figures III.7-4, III.7-10, and III.7-13).

III.7.4.2.10 Other Land Covers

Agriculture

Agricultural areas are mapped over approximately 3.2% (733,000 acres) of the DRECP Plan Area and are concentrated in three main regions: the Imperial Valley south of the Salton Sea, Palo Verde Valley in the Blythe region, and Antelope Valley in the western Mojave Desert (Figures III.7-4 through III.7-8, and III.7-10 through III.7-13).

Almost 500,000 acres in Imperial County are in agricultural production (Imperial County Farm Bureau 2011, as cited in Appendix Q). Field crops account for most of the land in production, including about 166,000 acres of alfalfa, 66,000 acres of Sudan grass for hay, 44,000 acres of wheat, and 34,000 acres of sugar beets (University of California–Davis 2011a, as cited in Appendix Q). Major vegetable crops include lettuce, cabbage, carrots, onions, broccoli, cauliflower, sweet corn, bell pepper, chili peppers, cantaloupes, mixed melons, and watermelons (University of California–Davis 2011a, as cited in Appendix Q). Imperial County also supports the largest number of feedlot and fed cattle in California (University of California–Davis 2011a, as cited in Appendix Q).

The Palo Verde Valley supports about 108,000 acres of agricultural lands, of which about 60% are alfalfa, 11% cotton, 6% wheat and barley, and 5% Sudan grass and Bermuda grass (*Cynodon dactylon*) (Barrows 2007, as cited in Appendix Q). Agriculture in the Antelope Valley is on a much smaller scale than the Imperial and Palo Verde valleys. The acreage of vegetable crops in the Antelope Valley increased from about 9,000 acres in 1999 to 11,670 acres in 2000, due primarily to the carrot industry (University of California–Davis 2011a, as cited in Appendix Q). Other crops include alfalfa, dry onions, carrots, potatoes, peaches, grapes, and nectarines.

Developed and Disturbed Areas

Developed and disturbed land is mapped over approximately 2.1% (469,000 acres) of the DRECP Plan Area and includes low- to high-intensity urban development and open space associated with developed areas, including uses such as golf courses (Figure III.7-3 and Figures III.7-4 through III.7-13). Developed areas are concentrated in the western Mojave in the Palmdale/Lancaster area; Victorville, Barstow, and Ridgecrest; and in the Colorado/Sonoran Desert in the El Centro area of the Imperial Valley and the Blythe area. Disturbed lands occur primarily in the western Mojave area west and north of EAFB and the Ridgecrest area.

Rural

Rural land is mapped over approximately 0.5% (124,835 acres) of the DRECP Plan Area. Rural land in the DRECP Plan Area includes areas of rural development in the west Mojave, Morongo Valley, western Imperial Valley, and Blythe areas.

A small portion of the DRECP Plan Area, located largely in the west Mojave, Imperial Valley, and along the eastern edge of the DRECP Plan Area, is classified as "unmapped" due to lack of data in the source data for the land cover layer (Figures III.7-4 through III.7-6, III.7-8, III.7-9, and III.7-11 through III.7-13). These areas are primarily characterized by rural development or agricultural land uses.

III.7.4.3 Vegetation Types and Other Land Covers by Ecoregion Subarea

III.7.4.3.1 Cadiz Valley and Chocolate Mountains Ecoregion Subarea

The vegetation types and other land covers within the Cadiz Valley and Chocolate Mountains ecoregion subarea are detailed in Table III.7-12 and shown in Figure III.7-4.

Table III.7-12
Vegetation Types and Other Land Covers
in the Cadiz Valley and Chocolate Mountains Ecoregion Subarea of the DRECP

General Vegetation Types	Vegetation Type	Alliance[1]	Ecoregion Subarea Acres
Chaparral and coastal scrub (Cismontane scrub)	Western Mojave and western Sonoran Desert borderland chaparral	—	90
Desert outcrop and badlands	North American warm desert bedrock cliff and outcrop	*Chorizanthe rigida–Geraea canescens*	154,000
		—	555,000

Table III.7-12
Vegetation Types and Other Land Covers in the Cadiz Valley and Chocolate Mountains Ecoregion Subarea of the DRECP

General Vegetation Types	Vegetation Type	Alliance[1]	Ecoregion Subarea Acres
Desert scrub	Arizonan upland Sonoran desert scrub	—	13,000
	Intermontane deep or well-drained soil scrub	*Ephedra nevadensis*	2,000
		Lycium andersonii	10
	Intermountain dry shrubland and grassland	—	40
	Lower bajada and fan Mojavean–Sonoran desert scrub	*Ambrosia dumosa*	3,000
		Atriplex polycarpa	1,000
		Encelia farinosa	48,000
		Larrea tridentata	186,000
		Larrea tridentata–Ambrosia dumosa	309,000
		Larrea tridentata–Encelia farinosa	219,000
		—	923,000
	Shadscale–saltbush cool semi-desert scrub	*Atriplex canescens*	9,000
		—	7,000
Dunes	North American warm desert dunes and sand flats	*Dicoria canescens–Abronia villosa*	7,000
		Pleuraphis rigida	2,000
		Prosopis glandulosa coppice dunes	3,000
		Wislizenia refracta	3,000
		—	11,000
Grassland	California annual and perennial grassland	*Brassica nigra* and other mustards	1,000
		Mediterranean California naturalized annual and perennial grassland	6,000
	California annual forb/grass vegetation	*Amsinckia (menziesii, tessellata)*	60
Riparian	Madrean warm semi-desert wash woodland/scrub	—	272,000
	Mojavean semi-desert wash scrub	*Ambrosia salsola*	300
		Bebbia juncea	10
		Ephedra californica	2,000
	Riverine[2]	—	600
	Sonoran–Coloradan semi-desert wash woodland/scrub	*Acacia greggii*	1,000
		Chilopsis linearis	20
		Hyptis emoryi	3,000
		Parkinsonia florida–Olneya tesota	98,000
		Pluchea sericea	2,000
		Prosopis glandulosa	2,000

Table III.7-12
Vegetation Types and Other Land Covers
in the Cadiz Valley and Chocolate Mountains Ecoregion Subarea of the DRECP

General Vegetation Types	Vegetation Type	Alliance[1]	Ecoregion Subarea Acres
		Psorothamnus spinosus	900
		—	600
	Southwestern North American riparian/wash scrub	*Arundo donax*	10
		Tamarix spp.	5,000
		—	7,000
Wetlands	Arid West freshwater emergent marsh	*Typha (angustifolia, domingensis, latifolia)*	20
		—	100
	North American warm desert alkaline scrub and herb playa and wet flat	—	22,000
	Open water[2]	—	5,000
	Playa[2]	—	27,000
	Southwestern North American salt basin and high marsh	*Allenrolfea occidentalis*	1,000
		Atriplex lentiformis	400
		Suaeda moquinii	10,000
	Lacustrine[2]	—	1,000
Other land covers	Agriculture	—	113,000
	Developed and disturbed areas	—	19,000
	Not mapped	—	400
		Total	**3,064,000**

[1] Only a portion of the DRECP Plan Area, approximately six million acres of the Mojave and Colorado/Sonoran deserts within Inyo, Kern, Los Angeles, San Bernardino, Riverside, and Imperial counties, has been mapped at the more specific alliance level.
[2] This is a land cover type and not specifically a "vegetation type."

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

III.7.4.3.2 Imperial Borrego Valley Ecoregion Subarea

The vegetation types and other land covers within the Imperial Borrego Valley ecoregion subarea are detailed in Table III.7-13 and shown in Figure III.7-5.

Table III.7-13
Vegetation Types and Other Land Covers
within the Imperial Borrego Valley Ecoregion Subarea of the DRECP

General Vegetation Types	Vegetation Type	Alliance[1]	Ecoregion Subarea Acres
Chaparral and coastal scrub (Cismontane scrub)	Central and south coastal Californian coastal sage scrub	—	20
	Western Mojave and Western Sonoran Desert borderland chaparral	—	30
Desert conifer woodlands	Great Basin pinyon–juniper woodland	*Juniperus californica*	200
		Pinus monophylla	<10
Desert outcrop and badlands	North American warm desert bedrock cliff and outcrop	*Caesalpinia virgata*	50
		—	222,000
Desert scrub	Arizonan upland Sonoran desert scrub	*Agave deserti*	3,000
		—	700
		Viguiera parishii	30
	Intermountain dry shrubland and grassland	—	1,000
	Lower bajada and fan Mojavean–Sonoran desert scrub	*Ambrosia dumosa*	46,000
		Atriplex polycarpa	4,000
		Cylindropuntia bigelovii	3,000
		Encelia farinosa	13,000
		Fouquieria splendens	3,000
		Larrea tridentata	28,000
		Larrea tridentata–Ambrosia dumosa	95,000
		Larrea tridentata–Encelia farinosa	11,000
		—	555,000
	Mojave and Great Basin upper bajada and toeslope	*Coleogyne ramosissima*	10
		Yucca schidigera	200
	Shadscale–saltbush cool semi-desert scrub	—	21,000
Dunes	North American warm desert dunes and sand flats	—	175,000
		Pleuraphis rigida	20
		Prosopis glandulosa coppice dunes	700
Grassland	California annual and perennial grassland	—	2,000
		Bromus rubens–Schismus (arabicus, barbatus)	30

Table III.7-13
Vegetation Types and Other Land Covers within the Imperial Borrego Valley Ecoregion Subarea of the DRECP

General Vegetation Types	Vegetation Type	Alliance[1]	Ecoregion Subarea Acres
Riparian	Madrean warm semi-desert wash woodland/scrub	—	285,000
	Mojavean semi-desert wash scrub	*Ambrosia salsola*	3,000
	Sonoran–Coloradan semi-desert wash woodland/scrub	*Acacia greggii*	1,000
		Chilopsis linearis	300
		Hyptis emoryi	2,000
		Parkinsonia florida–Olneya tesota	33,000
		Prosopis glandulosa	7,000
		Psorothamnus spinosus	5,000
		—	1,000
	Southwestern North American riparian evergreen and deciduous woodland	*Washingtonia filifera*	10
	Southwestern North American riparian/wash scrub	*Baccharis emoryi*	50
		Tamarix spp.	300
		Southwestern North American introduced riparian scrub	31,000
Wetland	North American warm desert alkaline scrub and herb playa and wet flat	—	2,000
	Open water[2]	—	196,000
	Playa[2]	—	100
	Southwestern North American salt basin and high marsh	*Allenrolfea occidentalis*	400
		—	<10
		Suaeda moquinii	600
Other land covers	Agriculture	—	543,000
	Developed and disturbed areas	—	40,000
	Rural	—	58,000
	Not mapped	—	6,000
		Total	**2,400,000**

[1] Only a portion of the DRECP Plan Area, approximately six million acres of the Mojave and Colorado/Sonoran deserts within Inyo, Kern, Los Angeles, San Bernardino, Riverside, and Imperial counties, has been mapped at the more specific alliance level.

[2] This is a land cover type and not specifically a "vegetation type."

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

III.7.4.3.3 Kingston and Funeral Mountains Ecoregion Subarea

The vegetation types and other land covers within the Kingston and Funeral Mountains ecoregion subarea are detailed in Table III.7-14 and shown in Figure III.7-6.

Table III.7-14
Vegetation Types and Other Land Covers
in the Kingston and Funeral Mountains Ecoregion Subarea of the DRECP

General Vegetation Types	Vegetation Type	Alliance[1]	Ecoregion Subarea Acres
Desert conifer woodlands	Great Basin pinyon–juniper woodland	—	12,000
		Pinus monophylla	12,000
Desert outcrop and badlands	North American warm desert bedrock cliff and outcrop	*Atriplex hymenelytra*	27,000
		—	50,000
Desert scrub	Intermontane deep or well-drained soil scrub	—	8,000
	Intermontane seral shrubland	—	<10
	Intermountain dry shrubland and grassland	—	20
	Intermountain mountain big sagebrush shrubland and steppe	—	4,000
	Lower bajada and fan Mojavean–Sonoran desert scrub	—	1,528,000
	Mojave and Great Basin upper bajada and toeslope	—	623,000
	Shadscale–saltbush cool semi-desert scrub	*Atriplex confertifolia*	19,000
		—	24,000
Dunes	North American warm desert dunes and sand flats	—	4,000
		Pleuraphis rigida	2,000
		Prosopis glandulosa coppice dunes	19,000
Riparian	Madrean warm semi-desert wash woodland/scrub	—	72,000
	Mojavean semi-desert wash scrub	—	800
	Sonoran–Coloradan semi-desert wash woodland/scrub	*Prosopis glandulosa*	2,000
Wetland	North American warm desert alkaline scrub and herb playa and wet flat	—	33,000
	Playa[2]	—	<10

Table III.7-14
Vegetation Types and Other Land Covers
in the Kingston and Funeral Mountains Ecoregion Subarea of the DRECP

General Vegetation Types	Vegetation Type	Alliance[1]	Ecoregion Subarea Acres
	Southwestern North American salt basin and high marsh	—	22,000
Other land covers	Agriculture		70
	Developed and disturbed areas		9,000
		Total	**2,470,000**

[1] Only a portion of the DRECP Plan Area, approximately six million acres of the Mojave and Colorado/Sonoran deserts within Inyo, Kern, Los Angeles, San Bernardino, Riverside, and Imperial counties, has been mapped at the more specific alliance level.
[2] This is a land cover type and not specifically a "vegetation type."

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

III.7.4.3.4 Mojave and Silurian Valley Ecoregion Subarea

The vegetation types and other land covers within the Mojave and Silurian Valley ecoregion subarea are detailed in Table III.7-15 and shown in Figure III.7-7.

Table III.7-15
Vegetation Types and Other Land Covers
in the Mojave and Silurian Valley Ecoregion Subarea of the DRECP

General Vegetation Types	Vegetation Type	Alliance[1]	Ecoregion Subarea Acres
Chaparral and coastal scrub (Cismontane scrub)	Central and south coastal Californian coastal sage scrub	*Eriogonum fasciculatum*	8,000
Desert conifer woodlands	Great Basin pinyon–juniper woodland	*Pinus monophylla*	100
Desert outcrop and badlands	North American warm desert bedrock cliff and outcrop	*Atriplex hymenelytra*	4,000
		Chorizanthe rigida–Geraea canescens	1,000
		—	17,000
		Peucephyllum schottii	200
Desert scrub	Intermontane deep or well-drained soil scrub	*Ephedra nevadensis*	200
		Ephedra viridis	600
		Ericameria teretifolia	5,000
		Grayia spinosa	22,000

Table III.7-15
Vegetation Types and Other Land Covers
in the Mojave and Silurian Valley Ecoregion Subarea of the DRECP

General Vegetation Types	Vegetation Type	Alliance[1]	Ecoregion Subarea Acres
		—	3,000
		Krascheninnikovia lanata	2,000
		Lycium cooperi	700
	Intermontane seral shrubland	*Ericameria cooperi*	800
		Ericameria nauseosa	100
	Lower bajada and fan Mojavean–Sonoran desert scrub	*Ambrosia dumosa*	23,000
		Atriplex polycarpa	57,000
		Encelia farinosa	2,000
		Larrea tridentata	40,000
		Larrea tridentata–Ambrosia dumosa	543,000
		Larrea tridentata–Encelia farinosa	3,000
		—	1,471,000
	Mojave and Great Basin upper bajada and toeslope	*Coleogyne ramosissima*	16,000
		—	76,000
		Salazaria mexicana	9,000
		Yucca brevifolia	8,000
		Yucca schidigera	2,000
	Shadscale–saltbush cool semi-desert scrub	*Atriplex canescens*	3,000
		Atriplex confertifolia	8,000
		—	35,000
	Southern Great Basin semi-desert grassland	*Achnatherum speciosum*	300
Dunes	North American warm desert dunes and sand flats	—	54,000
		Panicum urvilleanum	700
		Pleuraphis rigida	19,000
		Prosopis glandulosa coppice dunes	31,000
Grassland	California annual and perennial grassland	California annual and perennial grassland (native component) Mapping Unit	4,000
		—	5,000

Table III.7-15
Vegetation Types and Other Land Covers
in the Mojave and Silurian Valley Ecoregion Subarea of the DRECP

General Vegetation Types	Vegetation Type	Alliance[1]	Ecoregion Subarea Acres
	California annual forb/grass vegetation	*Amsinckia (menziesii, tessellata)*	200
		—	1,000
Riparian	Madrean warm semi-desert wash woodland/scrub	—	42,000
	Mojavean semi-desert wash scrub	*Ambrosia salsola*	4,000
		Brickellia incana	200
		Ephedra californica	3,000
		Ericameria paniculata	500
		Lepidospartum squamatum	600
	Sonoran–Coloradan semi-desert wash woodland/scrub	*Acacia greggii*	50
		Chilopsis linearis	600
		Prosopis glandulosa	10
		Psorothamnus spinosus	100
	Southwestern North American riparian evergreen and deciduous woodland	*Populus fremontii*	<10
	Southwestern North American riparian/wash scrub	*Baccharis sergiloides*	<10
		Tamarix spp.	1,000
Wetland	Californian warm temperate marsh/seep	*Juncus arcticus* (var. *balticus, mexicanus*)	10
	North American warm desert alkaline scrub and herb playa and wet flat	—	59,000
	Southwestern North American alkali marsh/seep vegetation	—	20
	Southwestern North American salt basin and high marsh	*Atriplex spinifera*	18,000
		Isocoma acradenia	20
		—	5,000
		Suaeda moquinii	6,000
	Lacustrine[2]	—	900

Table III.7-15
Vegetation Types and Other Land Covers
in the Mojave and Silurian Valley Ecoregion Subarea of the DRECP

General Vegetation Types	Vegetation Type	Alliance[1]	Ecoregion Subarea Acres
Other land covers	Agriculture	—	7,000
	Developed and Disturbed Areas	—	22,000
		Total	**2,647,000**

[1] Only a portion of the DRECP Plan Area, approximately six million acres of the Mojave and Colorado/Sonoran deserts within Inyo, Kern, Los Angeles, San Bernardino, Riverside, and Imperial counties, has been mapped at the more specific alliance level.
[2] This is a land cover type and not specifically a "vegetation type."

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

III.7.4.3.5 Owens River Valley Ecoregion Subarea

The vegetation types and other land covers within the Owens River Valley ecoregion subarea are detailed in Table III.7-16 and shown in Figure III.7-8.

Table III.7-16
Vegetation Types and Other Land Covers
in the Owens River Valley Ecoregion Subarea of the DRECP

General Vegetation Types	Vegetation Type	Alliance[1]	Ecoregion Subarea Acres
California forest and woodland	Californian broadleaf forest and woodland	—	30
	Californian montane conifer forest	—	40
Desert conifer woodlands	Great Basin pinyon–juniper woodland	—	500
Desert outcrop and badlands	North American warm desert bedrock cliff and outcrop	*Atriplex hymenelytra*	1,000
		—	57,000
Desert scrub	Intermontane deep or well-drained soil scrub	—	200
	Intermontane seral shrubland	—	1,000
	Intermountain dry shrubland and grassland	—	127,000

Table III.7-16
Vegetation Types and Other Land Covers in the Owens River Valley Ecoregion Subarea of the DRECP

General Vegetation Types	Vegetation Type	Alliance[1]	Ecoregion Subarea Acres
	Intermountain mountain big sagebrush shrubland and steppe	—	9,000
	Lower bajada and fan Mojavean–Sonoran desert scrub	—	38,000
	Shadscale–saltbush cool semi-desert scrub	*Atriplex confertifolia*	3,000
		—	72,000
Dunes	North American warm desert dunes and sand flats	—	6,000
		Pleuraphis rigida	400
Riparian	Madrean warm semi-desert wash woodland/scrub	—	2,000
	Southwestern North American riparian/wash scrub	—	500
		Southwestern North American introduced riparian scrub	15,000
Wetland	Arid West freshwater emergent marsh	—	4,000
	Open water[2]	—	4,000
	Playa[2]	—	50,000
	Southwestern North American salt basin and high marsh	—	21,000
Other Land Covers	Agriculture	—	1,000
	Developed and disturbed Areas	—	4,000
	Rural	—	2,000
	Not mapped	—	1,000
		Total	**418,000**

1 Only a portion of the DRECP Plan Area, approximately six million acres of the Mojave and Colorado/Sonoran deserts within Inyo, Kern, Los Angeles, San Bernardino, Riverside, and Imperial counties, has been mapped at the more specific alliance level.

2 This is a land cover type and not specifically a "vegetation type."

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

III.7.4.3.6 Panamint Death Valley Ecoregion Subarea

The vegetation types and other land covers within the Panamint Death Valley ecoregion subarea are detailed in Table III.7-17 and shown in Figure III.7-9.

Table III.7-17
Vegetation Types and Other Land Covers
in the Panamint Death Valley Ecoregion Subarea of the DRECP

General Vegetation Types	Vegetation Type	Alliance[1]	Ecoregion Subarea Acres
Chaparral and coastal scrub (Cismontane scrub)	Central and south coastal Californian coastal sage scrub	*Eriogonum fasciculatum*	900
Desert conifer woodlands	Great Basin pinyon–juniper woodland	—	800
		Pinus monophylla	300
Desert outcrop and badlands	North American warm desert bedrock cliff and outcrop	*Atriplex hymenelytra*	52,000
		—	41,000
Desert scrub	Intermontane deep or well-drained soil scrub	*Ephedra viridis*	50
		Ericameria teretifolia	100
		Grayia spinosa	10,000
		—	6,000
		Krascheninnikovia lanata	3,000
	Intermontane seral shrubland	*Gutierrezia sarothrae*	30
		—	800
	Intermountain dry shrubland and grassland	—	3,000
	Intermountain mountain big sagebrush shrubland and steppe	—	200
	Lower bajada and fan Mojavean–Sonoran desert scrub	*Ambrosia dumosa*	6,000
		Atriplex polycarpa	1,000
		Encelia farinosa	300
		Larrea tridentata	4,000
		Larrea tridentata–Ambrosia dumosa	117,000
		Larrea tridentata–Encelia farinosa	10
		—	1,388,000
	Mojave and Great Basin upper bajada and toeslope	—	10,000
		Salazaria mexicana	5,000

Table III.7-17
Vegetation Types and Other Land Covers
in the Panamint Death Valley Ecoregion Subarea of the DRECP

General Vegetation Types	Vegetation Type	Alliance[1]	Ecoregion Subarea Acres
	Shadscale–saltbush cool semi-desert scrub	*Atriplex confertifolia*	7,000
		—	15,000
Dunes	North American warm desert dunes and sand flats	—	18,000
		Prosopis glandulosa coppice dunes	21,000
Grassland	California annual and perennial grassland	Mediterranean California naturalized annual and perennial grassland	10
		California annual and perennial grassland (native component) Mapping Unit	60
Riparian	Madrean warm semi-desert wash woodland/scrub	—	38,000
	Mojavean semi-desert wash scrub	*Ambrosia salsola*	1,000
		Ericameria paniculata	100
		Lepidospartum squamatum	200
		—	<10
		Prunus fasciculata	30
	Sonoran–Coloradan semi-desert wash woodland/scrub	*Prosopis glandulosa*	60
	Southwestern North American riparian evergreen and deciduous woodland	*Populus fremontii*	<10
		Salix laevigata	<10
	Southwestern North American riparian/wash scrub	*Baccharis sergiloides*	<10
		Tamarix spp.	10
		Southwestern North American introduced riparian scrub	<10
Wetland	North American warm desert alkaline scrub and herb playa and wet flat	—	122,000
	Southwestern North American salt basin and high marsh	*Allenrolfea occidentalis*	10
		Atriplex spinifera	100
		—	39,000
		Suaeda moquinii	400

Table III.7-17
Vegetation Types and Other Land Covers in the Panamint Death Valley Ecoregion Subarea of the DRECP

General Vegetation Types	Vegetation Type	Alliance[1]	Ecoregion Subarea Acres
Other Land Covers	Developed and disturbed areas	—	27,000
	Not mapped	—	<10
		Total	**1,937,000**

[1] Only a portion of the DRECP Plan Area, approximately six million acres of the Mojave and Colorado/Sonoran deserts within Inyo, Kern, Los Angeles, San Bernardino, Riverside, and Imperial counties, has been mapped at the more specific alliance level.

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

III.7.4.3.7 Pinto Lucerne Valley and Eastern Slopes Ecoregion Subarea

The vegetation types and other land covers within the Pinto Lucerne Valley and Eastern Slopes ecoregion subarea are detailed in Table III.7-18 and shown in Figure III.7-10.

Table III.7-18
Vegetation Types and Other Land Covers in the Pinto Lucerne Valley and Eastern Slopes Ecoregion Subarea of the DRECP

General Vegetation Types	Vegetation Type	Alliance[1]	Ecoregion Subarea Acres
California forest and woodland	Californian broadleaf forest and woodland	—	20
	Californian montane conifer forest	—	38,000
Chaparral and coastal scrub (Cismontane scrub)	Californian xeric chaparral	—	4,000
	Central and south coastal California seral scrub	*Eriodictyon* (*crassifolium, trichocalyx*)	30
	Central and south coastal Californian coastal sage scrub	—	20
		Eriogonum fasciculatum	11,000
	Western Mojave and Western Sonoran Desert borderland chaparral	*Quercus cornelius-mulleri*	11,000
		—	30
Desert conifer woodlands	Great Basin pinyon–juniper woodland	*Cercocarpus ledifolius*	<10
		—	25,000
		Juniperus californica	35,000
		Pinus monophylla	21,000

Table III.7-18
Vegetation Types and Other Land Covers in the Pinto Lucerne Valley and Eastern Slopes Ecoregion Subarea of the DRECP

General Vegetation Types	Vegetation Type	Alliance[1]	Ecoregion Subarea Acres
Desert outcrop and badlands	North American warm desert bedrock cliff and outcrop	*Chorizanthe rigida–Geraea canescens*	27,000
		—	36,000
Desert Scrub	Arizonan upland Sonoran desert scrub	*Tetracoccus hallii*	20
		Viguiera parishii	39,000
	Intermontane deep or well-drained soil scrub	*Ephedra nevadensis*	1,000
		Ephedra viridis	12,000
		Ericameria teretifolia	3,000
		Grayia spinosa	15,000
		Purshia tridentate	1,000
	Intermontane seral shrubland	*Encelia (actoni, virginesis)*	6,000
		Ericameria nauseosa	2,000
		Gutierrezia sarothrae	50
	Intermountain dry shrubland and grassland	—	43,000
	Intermountain mountain big sagebrush shrubland and steppe	—	700
	Lower bajada and fan Mojavean–Sonoran desert scrub	*Ambrosia dumosa*	9,000
		Atriplex polycarpa	25,000
		Cylindropuntia bigelovii	80
		Encelia farinosa	8,000
		Larrea tridentata	86,000
		Larrea tridentata–Ambrosia dumosa	699,000
		Larrea tridentata–Encelia farinosa	141,000
		—	581,000
	Mojave and Great Basin upper bajada and toeslope	*Coleogyne ramosissima*	18,000
		Menodora spinescens	100
		—	22,000
		Salazaria mexicana	22,000
		Yucca brevifolia	76,000
		Yucca schidigera	73,000
	Shadscale–saltbush cool semi-desert scrub	*Atriplex canescens*	700
		Atriplex confertifolia	3,000
		—	400

Table III.7-18
Vegetation Types and Other Land Covers in the Pinto Lucerne Valley and Eastern Slopes Ecoregion Subarea of the DRECP

General Vegetation Types	Vegetation Type	Alliance[1]	Ecoregion Subarea Acres
Dunes	North American warm desert dunes and sand flats	*Dicoria canescens–Abronia villosa*	3,000
		—	12,000
		Pleuraphis rigida	500
		Prosopis glandulosa coppice dunes	900
Grassland	California annual and perennial grassland	*Bromus rubens–Schismus* (*arabicus, barbatus*)	5,000
		California annual and perennial grassland (native component) Mapping Unit	2,000
		Mediterranean California naturalized annual and perennial grassland	7,000
		—	30,000
	California annual forb/grass vegetation	*Amsinckia* (*menziesii, tessellata*)	10
Riparian	Madrean warm semi-desert wash woodland/scrub	—	11,000
	Mojavean semi-desert wash scrub	*Ambrosia salsola*	3,000
		Brickellia incana	40
		Ephedra californica	100
		Ericameria paniculata	500
		Lepidospartum squamatum	200
		Prunus fasciculata	800
	Riverine[2]	—	30
	Sonoran–Coloradan semi-desert wash woodland/scrub	*Acacia greggii*	18,000
		Chilopsis linearis	3,000
		Hyptis emoryi	4,000
		Parkinsonia florida–Olneya tesota	4,000
		Prosopis glandulosa	10
		Psorothamnus spinosus	6,000
	Southwestern North American riparian evergreen and deciduous woodland	*Populus fremontii*	200
		Salix gooddingii	<10
		Salix laevigata	10
		—	<10
		Washingtonia filifera	<10

Table III.7-18
Vegetation Types and Other Land Covers in the Pinto Lucerne Valley and Eastern Slopes Ecoregion Subarea of the DRECP

General Vegetation Types	Vegetation Type	Alliance[1]	Ecoregion Subarea Acres
	Southwestern North American riparian/wash scrub	*Forestiera pubescens*	<10
		Salix lasiolepis	10
		Tamarix spp.	300
		Southwestern North American introduced riparian scrub	700
Wetland	Arid West freshwater emergent marsh	*Typha (angustifolia, domingensis, latifolia)*	<10
	North American warm desert alkaline scrub and herb playa and wet flat	—	13,000
	Southwestern North American salt basin and high marsh	*Allenrolfea occidentalis*	400
		Atriplex lentiformis	70
		Suaeda moquinii	6,000
		—	1,000
	Wetland	Lacustrine[2]	100
Other land covers	Agriculture	—	3,000
	Developed and disturbed areas	—	74,000
	Rural	—	9,000
		Total	**2,316,000**

[1] Only a portion of the DRECP Plan Area, approximately six million acres of the Mojave and Colorado/Sonoran deserts within Inyo, Kern, Los Angeles, San Bernardino, Riverside, and Imperial counties, has been mapped at the more specific alliance level.
[2] This is a land cover type and not specifically a "vegetation type."

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

III.7.4.3.8 Piute Valley and Sacramento Mountains Ecoregion Subarea

The vegetation types and other land covers within the Piute Valley and Sacramento Mountains ecoregion subarea are detailed in Table III.7-19 and shown in Figure III.7-11.

Table III.7-19
Vegetation Types and Other Land Covers in the Piute Valley and Sacramento Mountains Ecoregion Subarea of the DRECP

General Vegetation Types	Vegetation Type	Alliance[1]	Ecoregion Subarea Acres
Desert outcrop and badlands	North American warm desert bedrock cliff and outcrop	—	445,000
Desert scrub	Arizonan upland Sonoran desert scrub	—	6,000
	Intermountain dry shrubland and grassland	—	40
	Lower bajada and fan Mojavean–Sonoran desert scrub	—	520,000
		Larrea tridentata–Ambrosia dumosa	<10
		Larrea tridentata–Encelia farinosa	40
	Mojave and Great Basin upper bajada and toeslope	—	1,000
	Shadscale–saltbush cool semi-desert scrub	—	1,000
Dunes	North American warm desert dunes and sand flats	—	90
Riparian	Madrean warm semi-desert wash woodland/scrub	—	94,000
	Sonoran–Coloradan semi-desert wash woodland/scrub	—	50
	Southwestern North American riparian/wash scrub	Southwestern North American introduced riparian scrub	3,000
Wetland	Arid West freshwater emergent marsh	—	100
	Open water[2]	—	9,000
	Playa[2]	—	400
Other land covers	Agriculture	—	3,000
	Developed and disturbed areas	—	5,000
	Rural	—	3,000
	Not mapped	—	300
		Total	**1,092,000**

[1] Only a portion of the DRECP Plan Area, approximately six million acres of the Mojave and Colorado/Sonoran deserts within Inyo, Kern, Los Angeles, San Bernardino, Riverside, and Imperial counties, has been mapped at the more specific alliance level. None of the Piute Valley and Sacramento Mountains ecoregion subarea was mapped at the alliance level.

[2] This is a land cover type and not specifically a "vegetation type."

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the

nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

III.7.4.3.9 Providence and Bullion Mountains Ecoregion Subarea

The vegetation types and other land covers within the Providence and Bullion Mountains ecoregion subarea are detailed in Table III.7-20 and shown in Figure III.7-12.

Table III.7-20
Vegetation Types and Other Land Covers
in the Providence and Bullion Mountains Ecoregion Subarea of the DRECP

General Vegetation Types	Vegetation Type	Alliance[1]	Ecoregion Subarea Acres
Desert conifer woodlands	Great Basin pinyon–juniper woodland	—	50,000
		Pinus monophylla	31,000
Desert outcrop and badlands	North American warm desert bedrock cliff and outcrop	*Atriplex hymenelytra*	10
		Chorizanthe rigida–Geraea canescens	100
		—	150,000
Desert scrub	Intermontane seral shrubland	—	10
	Intermountain dry shrubland and grassland	—	21,000
	Intermountain mountain big sagebrush shrubland and steppe	—	200
		Intermountain west mesic tall sagebrush shrubland and steppe	3,000
	Lower bajada and fan Mojavean–Sonoran desert scrub	*Atriplex polycarpa*	100
		Encelia farinosa	500
		Larrea tridentata	15,000
		Larrea tridentata–Ambrosia dumosa	26,000
		Larrea tridentata–Encelia farinosa	10,000
		—	1,767,000
	Mojave and Great Basin upper bajada and toeslope	—	353,000
	Shadscale–saltbush cool semi-desert scrub	*Atriplex canescens*	100
		—	14,000
Dunes	North American warm desert dunes and sand flats	*Dicoria canescens–Abronia villosa*	20
		—	9,000
		Pleuraphis rigida	5,000

Table III.7-20
Vegetation Types and Other Land Covers
in the Providence and Bullion Mountains Ecoregion Subarea of the DRECP

General Vegetation Types	Vegetation Type	Alliance[1]	Ecoregion Subarea Acres
		Prosopis glandulosa coppice dunes	3,000
Riparian	Madrean warm semi-desert wash woodland/scrub	—	88,000
	Mojavean semi-desert wash scrub	*Ephedra californica*	100
		—	600
	Sonoran–Coloradan semi-desert wash woodland/scrub	*Acacia greggii*	1,000
		Hyptis emoryi	70
		Psorothamnus spinosus	700
	Southwestern North American riparian/wash scrub	Southwestern North American introduced riparian scrub	200
Wetland	North American warm desert alkaline scrub and herb playa and wet flat	—	56,000
	Southwestern North American salt basin and high marsh	—	50
		Suaeda moquinii	70
	Lacustrine[2]	—	<10
Other land covers	Agriculture	—	1,000
	Developed and disturbed areas	—	7,000
	Not mapped	—	<10
		Total	**2,615,000**

1 Only a portion of the DRECP Plan Area, approximately six million acres of the Mojave and Colorado/Sonoran deserts within Inyo, Kern, Los Angeles, San Bernardino, Riverside, and Imperial counties, has been mapped at the more specific alliance level.
2 This is a land cover type and not specifically a "vegetation type."

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

III.7.4.3.10 West Mojave and Eastern Slopes Ecoregion Subarea

The vegetation types and other land covers within the West Mojave and Eastern Slopes ecoregion subarea are detailed in Table III.7-21 and shown in Figure III.7-13.

Table III.7-21
Vegetation Types and Other Land Covers
in the West Mojave and Eastern Slopes Ecoregion Subarea of the DRECP

General Vegetation Types	Vegetation Type	Alliance[1]	Ecoregion Subarea Acres
California forest and woodland	Californian broadleaf forest and woodland	*Aesculus californica*	10
		Quercus chrysolepis tree	50
		Quercus lobata	100
		Quercus wislizeni tree	500
		—	71,000
	Californian evergreen coniferous forest and woodland	*Pinus sabiniana*	200
	Californian montane conifer forest	—	39,000
Chaparral and coastal scrub (Cismontane scrub)	Californian mesic chaparral	—	2,000
		Cercocarpus montanus	1,000
		Prunus ilicifolia	90
		Quercus berberidifolia	200
		Quercus berberidifolia–Adenostoma fasciculatum	200
	Californian pre-montane chaparral	*Arctostaphylos glandulosa*	30
		—	1,000
	Californian xeric chaparral	*Adenostoma fasciculatum*	9,000
		Arctostaphylos glauca	300
		Ceanothus crassifolius	<10
		Fremontodendron californicum	2,000
		—	9,000
	Central and south coastal California seral scrub	*Ericameria linearifolia*	500
		Eriodictyon (*crassifolium, trichocalyx*)	800
	Central and south coastal Californian coastal sage scrub	—	<10
		Eriogonum fasciculatum	39,000
		Eriogonum wrightii	10
	Western Mojave and Western Sonoran Desert borderland chaparral	*Quercus john-tuckeri*	13,000
		—	400

Table III.7-21
Vegetation Types and Other Land Covers in the West Mojave and Eastern Slopes Ecoregion Subarea of the DRECP

General Vegetation Types	Vegetation Type	Alliance[1]	Ecoregion Subarea Acres
Desert conifer woodlands	Great Basin Pinyon–Juniper Woodland	*Juniperus californica*	55,000
		Pinus monophylla	1,000
		—	41,000
Desert outcrop and badlands	North American warm desert bedrock cliff and outcrop	*Atriplex hymenelytra*	900
		Chorizanthe rigida–Geraea canescens	300
		—	29,000
Desert scrub	Intermontane deep or well-drained soil scrub	*Ephedra nevadensis*	8,000
		Ephedra viridis	200
		Ericameria teretifolia	1,000
		Grayia spinosa	8,000
		Krascheninnikovia lanata	3,000
		Lycium cooperi	300
		Purshia tridentate	3,000
		—	100
	Intermontane seral shrubland	*Encelia* (*actoni, virginesis*)	90
		Ericameria cooperi	2,000
		Ericameria nauseosa	62,000
		—	500
	Intermountain dry shrubland and grassland	—	247,000
	Intermountain mountain big sagebrush shrubland and steppe	*Artemisia tridentata*	600
		—	58,000
	Lower bajada and fan Mojavean–Sonoran desert scrub	*Ambrosia dumosa*	86,000
		Atriplex polycarpa	193,000
		Larrea tridentata	124,000
		Larrea tridentata–Ambrosia dumosa	1,315,000
		—	82,000
	Mojave and Great Basin upper bajada and toeslope	*Coleogyne ramosissima*	15,000
		Salazaria mexicana	900
		Yucca brevifolia	107,000
		Yucca schidigera	1,000

Table III.7-21
Vegetation Types and Other Land Covers
in the West Mojave and Eastern Slopes Ecoregion Subarea of the DRECP

General Vegetation Types	Vegetation Type	Alliance[1]	Ecoregion Subarea Acres
	Shadscale–saltbush cool semi-desert scrub	*Atriplex canescens*	25,000
		Atriplex confertifolia	85,000
		—	8,000
	Southern Great Basin semi-desert grassland	*Achnatherum speciosum*	40
		—	40
Dunes	North American warm desert dunes and sand flats	*Achnatherum hymenoides*	600
		Pleuraphis rigida	1,000
		Prosopis glandulosa coppice dunes	1,000
		—	1,000
Grassland	California annual and perennial grassland	*Brassica nigra* and other mustards	100
		California annual and perennial grassland (native component) Mapping Unit	79,000
		Mediterranean California naturalized annual and perennial grassland	69,000
		—	23,000
	California annual forb/grass vegetation	*Amsinckia* (*menziesii, tessellata*)	90
		Eschscholzia (*californica*)	4,000
		Lasthenia californica–Plantago erecta–Vulpia microstachys	100
		—	3,000
Riparian	Madrean warm semi-desert wash woodland/scrub	—	7,000
	Mojavean semi-desert wash scrub	*Ambrosia salsola*	7,000
		Artemisia tridentata ssp. *parishii*	400
		Ephedra californica	700
		Ericameria paniculata	200

Table III.7-21
Vegetation Types and Other Land Covers
in the West Mojave and Eastern Slopes Ecoregion Subarea of the DRECP

General Vegetation Types	Vegetation Type	Alliance[1]	Ecoregion Subarea Acres
		Lepidospartum squamatum	5,000
		Prunus fasciculata	2,000
	Riverine[2]	—	200
	Sonoran–Coloradan semi-desert wash woodland/scrub	*Acacia greggii*	20
		Prosopis glandulosa	<10
	Southwestern North American riparian evergreen and deciduous woodland	*Alnus rhombifolia*	<10
		Platanus racemosa	100
		Populus fremontii	3,000
		Salix laevigata	300
		—	2,000
	Southwestern North American riparian/wash scrub	*Baccharis salicifolia*	200
		Forestiera pubescens	100
		Salix exigua	200
		Salix lasiolepis	60
		Sambucus nigra	70
		Tamarix spp.	4,000
		Southwestern North American introduced riparian scrub	1,000
Wetland	Arid West freshwater emergent marsh	—	20
		Typha (*angustifolia, domingensis, latifolia*)	100
	Californian warm temperate marsh/seep	*Juncus arcticus* (var. *balticus, mexicanus*)	400
	Intermountain basins alkaline-saline shrub wetland	*Sarcobatus vermiculatus*	30
	North American warm desert alkaline scrub and herb playa and wet flat	—	84,000
		Sarcobatus vermiculatus	30
	Open water[2]	—	30
	Southwestern North American salt basin and high marsh	*Allenrolfea occidentalis*	5,000
		Atriplex lentiformis	40
		Atriplex parryi	7,000
		Atriplex spinifera	159,000
		Distichlis spicata	400

Table III.7-21
Vegetation Types and Other Land Covers
in the West Mojave and Eastern Slopes Ecoregion Subarea of the DRECP

General Vegetation Types	Vegetation Type	Alliance[1]	Ecoregion Subarea Acres
		Frankenia salina	100
		Isocoma acradenia	10
		Sporobolus airoides	<10
		Suaeda moquinii	21,000
		Southwestern North American alkali marsh/seep vegetation	300
		—	900
	Wetland	Lacustrine[2]	7,000
Other land covers	Agriculture	—	60,000
	Developed and disturbed areas	—	264,000
	Rural		46,000
	Not mapped	—	500
		Total	**3,627,000**

[1] Only a portion of the DRECP Plan Area, approximately six million acres of the Mojave and Colorado/Sonoran deserts within Inyo, Kern, Los Angeles, San Bernardino, Riverside, and Imperial counties, has been mapped at the more specific alliance level.
[2] This is a land cover type and not specifically a "vegetation type."

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

III.7.5 Wildlife Resources Within the DRECP Plan Area

The diversity of vegetation types and floral richness within the DRECP Plan Area supports a high diversity of animal species. Desert scrub vegetation, which covers approximately 55% of the DRECP Plan Area, supports a diverse wildlife community that includes many species of birds, mammals, and reptiles that are distinctly representative of desert scrub. Generally these species either do not occur outside of the desert scrub vegetation type or if they do occur elsewhere, the desert is an important stronghold of their range or part of the life cycle (e.g., wintering habitat). Desert grasslands provide important habitat for a wide variety of birds, including raptors, insectivores, and granivores. Oak woodlands and forests provide important breeding and foraging habitat for a variety of species, particularly birds. Similarly, conifer forests provide important breeding and foraging habitat for many species that do not occur in lower elevation habitats; the relatively high proportion of dead and dying trees

typically found in high-elevation conifer forest provide habitat for birds that roost or nest in cavities and snags.

Riparian forests and desert washes provide nesting habitat for birds, including cavity nesters. The riparian and wetland habitats provide critical water, cover, shade, and abundant food resources (e.g., insects and other invertebrates) for migrating and resident bird species. Many bird, reptile, and mammal species that are not desert riparian or desert wash dependent often use these habitats for water and food resources.

Rocky, barren, and unvegetated habitat may include areas with sparse shrub cover that provide wildlife habitat. Several birds are associated with unvegetated and sparsely vegetated areas, and several bat species use rock outcrops and crevices for day roosting sites. Several reptile species and desert bighorn sheep are strongly associated with rocky habitats that provide refuge cover and escape terrain.

Agricultural fields, especially those in the Imperial Valley adjacent to the Salton Sea, attract a large number of birds that visit during migration and over winter, as well as birds that are resident year-round. Many of these species forage and rest in agricultural fields and associated canals and ditches, and trees associated with agricultural fields provide for cavity nesting. Although birds are by far the largest vertebrate group to use agricultural lands in the DRECP Plan Area, other vertebrate wildlife found in agricultural lands include mammals and some amphibians and reptiles. Urban or suburban environments also provide forage, roosting, and nesting opportunities for some of the Focus Species, primarily birds.

Higher biodiversity is associated with ecotones between various vegetation types and variation in geographic and geological factors, such as that between mountain, grassland, and desert habitat in the Mojave Desert (Vangergast et al. 2013). Vangergast et al. (2013) identified evolutionary hotspots, regions where multiple species sharing a similar distribution show spatial overlap in high genetic diversity and divergence, within the Mojave Desert by mapping spatial population genetic structure for 17 animal species. The 10 identified hotspots include (1) Dunmovin-Coso Junction, (2) Sierra-Tehachapi Transition, (3) Antelope Valley-Mojave Desert Transition, (4) Ord Mountains-Lucerne Valley, (5) Indio Hills-Little San Bernardino Mountains, (6) Pluvial Lakes (Bristol/Cadiz/Danby), (7) Colorado River Mountains (Mojave/Black mountains), (8) Sacramento-Detrital Valley, (9) Ivanpah Valley, and (10) Virgin Mountains (Vangergast et al. 2013).

Wildlife resources discussed in this section are organized by taxonomic group. Within each taxonomic group, many of the species occur only in the habitat types that meet some or all aspects of their life history requirements for reproduction, food, cover, migration or winter habitat, etc. The following discussion therefore organizes wildlife species within each taxonomic group by their typical or primary habitats. Some habitat generalists or

widespread species, however, may occur in more than one habitat type and therefore may be listed more than once in the discussion.

III.7.5.1 Invertebrates

The total number and diversity of arthropods and gastropods (snails and slugs), including crustaceans (e.g., fairy shrimp), insects, centipedes, millipedes, and arachnids, in the DRECP Plan Area is unknown and impossible to estimate because many groups of arthropods and gastropods have not been studied. However, studies have shown high species richness and endemism levels resulting from microhabitat specialization associated with unique substrates, host plants, and water sources (CDFG 2010a, as cited in Appendix Q). For example, more than 2,500 invertebrate taxa have been identified at the Deep Canyon Desert Research Center, which is primarily Colorado/Sonoran Desert on alluvial fan and rocky slopes, but also supports montane forest, chaparral, high desert plateau, pinyon–juniper woodland, ephemeral streams, and permanent waterholes (University of California–Riverside 2005, as cited in Appendix Q). With respect to endemism, 22 of 29 invertebrate taxa known from the Mojave Desert on the Special Animals List are endemic to the Mojave Desert (i.e., occur nowhere else) (CDFG 2010a, as cited in Appendix Q). Similarly, 8 of 15 invertebrate taxa known from the Colorado/Sonoran Desert on the Special Animals List are endemic to the Colorado/Sonoran Desert (CDFG 2010a, as cited in Appendix Q).

Dune systems also support several endemic invertebrate species. As stated in the Independent Science Advisors report (2010, as cited in Appendix Q), "The Kelso Dunes alone have 10 described endemic arthropods (eight beetles, a sand-treader cricket, and a Jerusalem cricket); the Algodones Dunes have eight (seven beetles, one sand-treader cricket); and every Southern California dune system that has received any level of taxonomic surveys has one or more endemic arthropods (at least 30 or 40 overall)."

Several invertebrate species documented in the different dune systems, including Kelso Dune glaresis scarab beetle (*Glaresis arenata*), Kelso Jerusalem cricket (*Ammopelmatus kelsoensis*), Kelso giant sand treader cricket (*Macrobaenetes kelsoensis*), Saline Valley snow-front June beetle (*Polyphylla anteronivea*), and brown-tassel trigonoscuta weevil (*Trigonoscuta brunnotesselata*) in the Mojave Desert. Invertebrates in the Sonoran Desert dune systems include Carlson's dune beetle (*Anomala carlsoni*), Hardy's dune beetle (*Anomala hardyorum*), and Andrew's dune scarab beetle (*Pseudocotalpa andrewsi*) (CDFG 2010b, as cited in Appendix Q).

Springs are small-scale aquatic systems that occur where groundwater reaches the surface (Meinzer 1923) with arid land springs considered distinct from springs in more temperate or humid regions as they are typically isolated from other waters (Abele 2011). Desert springs can act as "keystone" ecosystems playing an important role in evolutionary process

and regional biodiversity. Desert spring systems support a very diverse faunal assemblage including aquatic insects and also support the highest number of endemic taxa in North America (Stevens and Meretsky 2008, as cited in Henkanaththegedara 2012). Desert spring systems and its invertebrate fauna are under threat from a number of sources including water mining, habitat alterations, and the introduction of non-native species. In the DRECP Plan Area, the Nevares Spring naucorid bug (*Ambrysus funebris*), a candidate species proposed for federal listing, is found in the Travertine-Nevares Springs complex within Death Valley National Park (77 FR 69994-70060). There are several other endemic spring snail and naucorid bug species in the DRECP Plan Area.

III.7.5.2 Reptiles and Amphibians

Approximately 70 reptile and amphibian species have geographic ranges within the DRECP Plan Area. The largest group of reptiles is the snakes, which comprise about 27 species from the Boidae (boas), Colubridae (egg-laying snakes), Leptotyphlodipae (blind snakes), and Viperidae (vipers) families. The lizards comprise approximately 23 species from several families, including Anguidae (alligator lizards), Phrynosomatidae (horned, fringe-toed, spiny, sagebrush, and fence lizards), Iguanidae (chuckwalla (*Sauromalis ater*) and desert iguana (*Dipsosaurus dorsalis*), Crotophytidae (collared and leopard lizards), and Xantusidae (night lizards). There are four tortoise and turtle taxa with range in the DRECP Plan Area, including desert tortoise, western pond turtle (*Actinemys marmorata*), Sonora mud turtle (*Kinosternon sonoriense*), and spiny softshell (*Apalone* [=*Trionyx*] *spinera*). There are three gecko species (*Coleonyx* spp. and *Phyllodactylus xanti*) and two skink species (*Eumeces* spp.) with ranges in the DRECP Plan Area. Although the DRECP Plan Area is arid, about 14 amphibian species occur, including several salamanders (Salamandridae [newts] and Plethodontidae [lungless salamanders]), spadefoot toads (Pelobatidae), true toads (Bufonidae), tree frogs (Hylidae), and true frogs (Ranidae).

Reptiles occurring in dunes, like dune plant species, often are uniquely adapted to the dune environment. Fringe-toed lizards (*Uma* spp.) have morphological adaptations to living on fine sands, including velvety skin, fringed toes with projecting point scales, a countersunk lower jaw, earflaps, and camouflage (Stebbins 1985, as cited in Appendix Q). The three species in the Mojave and Colorado/Sonoran deserts are endemic to different dune systems: (1) the Colorado Desert fringe-toed lizard (*Uma notata*) occurs throughout the Colorado/Sonoran Desert; (2) the Mojave fringe-toed lizard (*Uma scoparia*) occurs in the Mojave Desert north to the southern end of Death Valley and south to about Parker, Arizona; (3) and the Coachella Valley fringe-toed lizard (*Uma inornata*) occurs in the Coachella Valley of the Colorado/Sonoran Desert (outside of the DRECP Plan Area) (Stebbins 1985, as cited in Appendix Q).

Desert grasslands, including grassland/shrubland mosaics and shrub steppe vegetation types, provide habitat for several reptile species, but these species also occur in other vegetation as well that provides cover, prey, and refuge (e.g., rocks, burrows, and debris). Snakes commonly occurring in desert grasslands include night snake (*Hypsiglena torquata*), California kingsnake (*Lampropeltis getula californiae*), coachwhip (*Masticophis flagellum*), gophersnake (*Pituophis cantifer*), long-nosed snake (*Rhinocheilus lecontei*), western patch-nosed snake (*Salvadora hexalepis*), groundsnake (*Sonora semiannulata),* western diamond-backed rattlesnake (*Crotalus atrox*), and Mohave rattlesnake (*Crotalus scutulatus*). These snakes primarily prey on lizards, small mammals, smaller snakes, nesting birds, and amphibians. Fewer lizards occupy grasslands, but include side-blotched lizard (*Uta stansburiana*), long-nosed leopard lizard (*Gambelia wislizenii*), western fence lizard (*Sceloporus cowlesi*), and desert spiny lizard (*Sceloporus magister*).

A variety of reptile species occupy the desert scrub and woodlands in the DRECP Plan Area. Desert tortoise occurs throughout most of the undisturbed and less disturbed lands of the DRECP Plan Area. Other reptile species commonly occurring in both the Mojave and Colorado/Sonoran deserts include common chuckwalla, desert horned lizard (*Phrynosoma platyrhinos*), desert iguana, desert spiny lizard, long-nosed leopard lizard, zebra-tailed lizard (*Callisaurus draconoides*), western groundsnake (*Sonora semiannulata*), western shovelnose snake (*Chionactis occipitalis*), and sidewinder (*Crotalus cerastes*). The Great Basin collared lizard (*Crotaphytus bincinctores*) occurs in the Mojave Desert and northeastern portion of the Sonoran Desert. Species generally restricted to the Mojave Desert include desert night lizard (*Xantusia vigilis*) and Mojave rattlesnake. Species mostly limited to the Colorado/Sonoran Desert include flat-tailed horned lizard (*Phrynosoma mcallii*) and western diamond-backed rattlesnake. The Gila monster (*Heloderma suspectum*) is restricted to a small area in northeastern San Bernardino County. Although some of these species are geographically widespread and common, they occur patchily within their range in specific microhabitats. For example, sidewinders often occur in sandy washes and windblown sand areas where they can burrow under the sand and wait for prey. The chuckwalla, on the other hand, is mostly restricted to the cover of rocky and boulder-strewn habitats. Generally, reptiles can be characterized as species associated either with flatter, open terrain with sandy soils (e.g., desert horned lizard, desert spiny lizard, long-nosed leopard lizard, zebra-tailed lizard, and Mojave rattlesnake) or with rocky and/or brushy and woody areas (e.g., chuckwalla, Great Basin collared lizard, desert night lizard, and western diamond-backed rattlesnake). Reptiles closely associated with rocky areas include chuckwalla, Great Basin collared lizard, rosy boa (*Lichanura trivirgata)*, and speckled rattlesnake (*Crotalus mitchellii*).

Common reptiles found in coastal scrub and chaparral habitats include common kingsnake (*Lampropeltis getula*), western rattlesnake (*Crotalus viridis helleri*), coachwhip, gophersnake, western fence lizard, western whiptail (*Aspidoscelis tigris*), and side-blotched lizard.

Common reptiles occurring in coniferous habitats within the DRECP Plan Area include California kingsnake, California mountain kingsnake (*Lampropeltis zonata*), western rattlesnake, gophersnake, common gartersnake (*Thamnophis sirtalis*), western fence lizard, and side-blotched lizard, several of which are also common at lower elevations. Uncommon reptiles and amphibians occurring at higher elevations and associated with coniferous forests include southern rubber boa (*Charina umbratica*) and Sierra Madre yellow-legged frog.

Common amphibians found in desert riparian and desert wash habitats include Woodhouse's toad (*Anaxyrus woodhousii*), red-spotted toad (*Anaxyrus punctatus*), great plains toad (*Bufo cognatus*), Baja California treefrog (*Pseudacris hypochondriaca*), and Rio Grande leopard frog (*Lithobathes berlandieri*; introduced in Lower Colorado River and Imperial County area). Less common amphibians associated with desert riparian and wash habitats include Sonoran desert toad (*Ollotis alvaria*; previously called Colorado River toad [*Bufo alvarius*]), Arizona toad (*Anaxyrus microscaphus*), and Couch's spadefoot (*Scaphiopus couchii*). The California range of the Sonoran desert toad is limited to the extreme southeast portion of the state, but the species' range extends east into southern Arizona, and south and southeast into Baja California and Sinaloa, Mexico. This species has not been collected since 1955 and may be extirpated from California (Jennings and Hayes 1994, as cited in Appendix Q). Couch's spadefoot is known from scattered locations east of the Algodones Dunes and north into San Bernardino County (CaliforniaHerps 2011, as cited in Appendix Q).

Amphibians expected to use marsh habitats in the DRECP Plan Area include Baja California treefrog, American bullfrog (*Lithobates catesbeianus*), Woodhouse's toad, and possibly Sonoran desert toad. The Baja California treefrog and bullfrog are widespread in most aquatic habitats in much of California, including desert areas. Woodhouse's toad occurs along the lower Colorado River, in orchards between Indio and the Salton Sea, and in irrigated lands in the Imperial Valley (Zeiner et al. 1988, as cited in Appendix Q). The Colorado River toad is uncommon in the lower Colorado River area and irrigated areas of Imperial County (Zeiner et al. 1988, as cited in Appendix Q).

Agricultural operations provide aquatic breeding and foraging habitat for amphibians, and several common and at least two invasive species occur in the DRECP Plan Area. Ponds and irrigation ditches provide suitable aquatic breeding habitat and the adjacent fields provide abundant invertebrate prey taken by amphibians, including grasshoppers, crickets, moths, caterpillars, beetles, ants, sow bugs, scorpions, centipedes, and spiders. The native amphibian species that occur in ponds and irrigation ditches in agricultural areas are primarily limited to the Imperial Valley and lower Colorado River, and include Woodhouse's toad, great plains toad, and Couch's spadefoot (lower Colorado River). The non-native Rio Grande leopard frog, which is native to Texas, New Mexico, and Mexico, may

have been accidentally introduced in the Yuma area between 1965 and 1971 as a result of fish stocking and has expanded its range into the agricultural areas of the Imperial Valley (California Herps 2011, as cited in Appendix Q). The American bullfrog, which is not native to California, occurs throughout the DRECP Plan Area in suitable habitat.

Agricultural areas also support a limited number of reptile species that may be attracted to agricultural areas for small rodent prey and larger invertebrates, especially if the agricultural area is adjacent to natural habitat that provides adequate refuge and shade (e.g., rocks, shrubs). Snakes in particular are highly vulnerable to mortality from farm equipment, vehicle collisions, and pest control and eradication practices. Snakes that may sometimes occur in agricultural areas, especially areas with grasses, include California kingsnake, coachwhip, gophersnake, groundsnake, checkered gartersnake (*Thamnophis marcianus*), and western diamond-backed rattlesnake. The side-blotched lizard is the only lizard expected to commonly use agricultural areas for foraging and refuge (e.g., in rodent burrows), but some other common lizard species that occur in desert scrub and wash habitats may occasionally forage along the ecotone between natural habitat and agriculture.

III.7.5.3 Birds

Birds constitute a very large component of the faunal richness and diversity of the DRECP Plan Area, in large part because of the Salton Sea, Colorado River, and adjacent irrigated agricultural fields that attract large numbers of birds during migration and for wintering. Even excluding the Salton Sea and adjacent agricultural lands, the BLM California Desert Checklist of Birds (Foreman and Nicolai 2011, as cited in Appendix Q) includes almost 300 species representing about 39 separate taxonomic groups, such as hawks, kites, eagles, owls, hummingbirds, woodpeckers, rails, swallows, finches, sparrows, vireos, flycatchers, and other passerines. Of these approximately 300 species, a much smaller number are commonly found in the most arid habitats that make up the vast majority of the DRECP Plan Area where food and water or vegetation is not available. The numbers and variety of these species typically found within the DRECP Plan Area vary greatly depending on habitat type as discussed in the following subsection.

III.7.5.3.1 Birds of Prey

Birds of prey include raptors (hawks, falcons, eagles, kites, osprey, and owls), vultures, and condors. Raptors forage on a variety of prey, including small mammals, reptiles, other birds, fish, invertebrates, and, for some species, carrion (Venable 1996; BLM and DOE 2010, as cited in Appendix Q). They typically perch on trees, utility support structures, fences, and other high structures that provide a broad view of the surrounding topography, and they may soar for extended periods at relatively high altitudes. Raptors forage from either a perch or on the wing (depending on the species) and forage during the day. Owls also perch on elevated structures and forage on a variety of prey, including

mammals, birds, and insects (Venable 1996; BLM and DOE 2010, as cited in Appendix Q). Forest-dwelling species typically forage by diving on prey from a perch, while open-country species hunt on the wing while flying low over the ground. While generally nocturnal, some owl species are also active during the day. Raptors that forage in the desert grasslands include golden eagle (*Aquila chrysaetos*), ferruginous hawk (*Buteo regalis*), northern harrier (*Circus cyaneus*), Swainson's hawk (*Buteo swainsoni*), red-tailed hawk (*Buteo jamaicensis*), prairie falcon (*Falco mexicanus*), American kestrel (*Falco sparverius*), merlin (*F. columbarius*), burrowing owl (*Athene cunicularia*), short-eared owl (*Asio flammeus*), and great horned owl (*Bubo virginianus*). The larger species such as golden eagle, red-tailed hawk, and great horned owl primarily prey on rodents, lagomorphs, and reptiles, and the smaller species such as American kestrel, burrowing owl, and short-eared owl include smaller rodents, reptiles, amphibians, small birds, and larger insects in their diet. Marsh habitats with dense stands of cattail (*Typha* spp.) provide nesting habitat for ground-nesting raptors such as northern harrier.

Secluded rock outcrops and ledges provide nesting habitat for many birds of prey, including golden eagle and prairie falcon. In addition, large trees, including oak, pine, juniper, cottonwood, and Joshua trees, provide nesting and roosting habitat for several raptors, including golden eagle, red-tailed hawk, red-shouldered hawk (*Buteo lineatus*), and American kestrel. Playas are fairly devoid of vegetation due to highly alkaline soils, but they do provide unique and important seasonal wetland resources for a variety of migratory and wintering birds. Northern harrier, peregrine falcon, and short-eared owl, for example, occur where migratory and wintering waterfowl and shorebirds are attracted to these wetland resources (National Audubon Society 2011; BLM 2007, as cited in Appendix Q).

The canals and drainage ditches in the Imperial Valley also provide extremely important habitat for the burrowing owl, which supports the largest breeding population of that species in California. There were an estimated 5,600 pairs (range 3,405 to 7,795) in Imperial Valley during 1992 and 1993 (Gervais et al. 2008, as cited in Appendix Q). This estimate dropped to 4,879 pairs in 2007 and 3,557 pairs in 2008 and increased to between 4,589 and 5,058 pairs in 2011 (Manning 2009; AECOM 2012, as cited in Appendix Q). Burrowing owls in this region nest along the soft earthen embankments of canals and ditches and roads in areas surrounded by crops, and about 80% of foraging occurs within about 1,950 feet of the nest burrow (Gervais et al. 2008, as cited in Appendix Q).

In addition to burrowing owl and American kestrel, other raptors that commonly forage in agricultural fields include barn owl (*Tyto alba*), great horned owl, and northern harrier, as well as less commonly occurring raptors such as merlin and ferruginous hawk (Patten et al. 2003). While Swainson's hawk nest and forage within the agricultural fields of the Antelope Valley, Patten et al. (2003) note an increase in the number of migrant Swainson's hawk observed foraging in the Imperial Valley. Rodents, including ground squirrels and pocket

gophers (*Thomomys bottae*), and large invertebrates may be abundant on agricultural lands and attract foraging raptors.

III.7.5.3.2 Waterfowl, Wading Birds, and Shorebirds

Waterfowl (ducks, geese, and swans), wading birds (herons and cranes), and shorebirds (plovers, sandpipers, and similar birds) are found in the DRECP Plan Area. Many of these species exhibit extensive migrations from breeding areas in Alaska and Canada to wintering grounds in Mexico and southward (Lincoln et al. 1998).

Playas are fairly devoid of vegetation due to highly alkaline soils but do provide unique and important seasonal wetland resources for a variety of migratory and wintering birds. For example, Searles Dry Lake east of Trona and Koehn Dry Lake northeast of California City have spring-fed wetlands that expand with winter rains to produce highly productive alkali meadows and mudflats (National Audubon Society 2011). Owens Lake near Lone Pine and Harper Dry Lake near Barstow also provides wetland habitat for birds (BLM 2007, as cited in Appendix Q; National Audubon Society 2011). Thousands of migratory and wintering waterfowl and shorebirds are attracted to these wetland resources, including phalaropes (*Phalaropus* spp.), teal and pintail (*Anas* spp.), eared grebe (*Podiceps nigricollis*), American white pelican (*Pelecanus erythrorhynchos*), herons and egrets (Ardeidae), killdeer (*Charadrius vociferus*), stilts and avocets (Recurvirostridae), and white-faced ibis (*Plegadis chihi*) (National Audubon Society 2011; BLM 2007, as cited in Appendix Q). Snowy plover (*Charadrius alexandrinus*) has been documented to nest at Harper Dry Lake and Searles Dry Lake (Garrett and Dunn 1981; National Audubon Society 2011).

The Salton Sea supports some of the highest levels of avian biodiversity in the southwestern United States and is important in providing habitat for migrating and resident waterbirds, particularly Pacific Flyway waterbirds. More than 400 resident, migratory, and special-status bird species have been recorded in the Salton Sea area since its formation, with about 270 of those species using the Salton Sea on a fairly regular basis. Common aquatic birds found within the Salton Sea include American avocet (*Recurvirostra americana*), American coot (*Fulica americana*), American wigeon (*Anas americana*), American white pelican (*Pelecanus erythrorhynchos*), black-necked stilt (*Himantopus mexicanus*), California brown pelican (*Pelecanus occidentalis*), eared grebe (*Podiceps nigricollis*), and ruddy duck (*Oxyura jamaicensis*). The Caspian tern (*Hydroprogne caspia*) is a common breeding bird that occurs within the Salton Sea region from mid-April through October. It is most abundant at the Sea from late summer through fall. Most Caspian terns depart from the region by the end of October, but some remain through the winter (Patten et al. 2003). The double-crested cormorant (*Phalacrocorax auritus*) is a year-round resident of the Salton Sea with the highest counts occurring in November, December, and February; however, populations remain steadily in the thousands throughout the year.

They nest regularly at the Salton Sea. The Salton Sea is the only area where the laughing gull occurs regularly in the western United States. The long-billed curlew (*Numenius americanus*) is present throughout the year at the Salton Sea, but thousands occur in the Imperial Valley in the winter. The Salton Sea is an important migratory stopover for the black tern (*Chlidonias niger*), but it does not breed there (Patten et al. 2003). The California brown pelican (*Pelecanus occidentalis californicus*) occurs at the Salton Sea as newly fledged young and post-breeding adults as they disperse from nesting areas in Baja California. The American white pelican (*Pelecanus erythrorhynchos*) formerly bred at the Salton Sea up to the 1950s but occurs now as a migrant and winter resident.

Marsh habitats with dense stands of cattail provide nesting habitat for several bird species in the DRECP Plan Area, including least bittern (*Ixobrychus exilis*), Yuma Ridgway's rail (*Rallus obsoletus yumanensis*), black rail (*Laterallus jamaicensis*), redhead (*Aythya americana*), ruddy duck, common moorhen (*Gallinula chloropus*), and American coot (*Fulica americana*) (Patten et al. 2003). Marsh habitats also provide foraging and/or resting and loafing habitat for many more avian taxa such as grebes (Podicipedidae); herons, bitterns, and allies; ibises and spoonbills (Threskiornithidae), including white-faced ibis; ducks and geese (Anatidae), including uncommon species such as wood duck (*Aix sponsa*); rails (Gruiformes) such as Virginia rail (*Rallus limicola*) and sora (*Porzana carolina*); stilts and avocets; sandpipers (Scolopacidae) such as solitary sandpiper (*Tringa solitaria*), western sandpiper (*Calidris mauri*), short-billed dowitcher (*Limnodromus griseus*), long-billed dowitcher (*Limnodromus scolopaceus*), and Wilson's snipe (*Gallinago delicata*) (Garrett and Dunn 1981, as cited in Appendix Q).

The irrigated agricultural fields and associated canals and ditches in the Imperial Valley attract a large number of birds that visit the Salton Sea during migration and for wintering. Food sources in these agricultural fields can be abundant, especially when disking or grazing unearths or flushes various terrestrial insects, such as crickets, grubs, and grasshoppers. Fourteen of the 20 most abundant taxa in agricultural fields were shorebirds (Shuford et al. 2000, as cited in Appendix Q). Agricultural fields with a grass component were the most frequently used, accounting for 39% of all birds, followed by alfalfa fields with 31% and bare fields with 24% of birds. Most of the activity in the fields was feeding (65%), followed by resting (23%), and flying (10%) (Shuford et al. 2000, as cited in Appendix Q). Periodic burning of fields, such as asparagus, provides particularly valuable habitat for wintering mountain plovers (*Charadrius montanus*). Flooded agricultural fields support numerous species of shorebirds including cattle egrets, white-faced ibis, and ring-billed gulls (Shuford et al. 2003 and Warnock et al. 2003, cited in Patten et al. 2003).

Two dominant species observed in the northern Imperial Valley in 1999 were ring-billed gull (*Larus delawarensis*) (12,092 individuals) and cattle egret (*Bubulcus ibis*) (10,862 individuals) (Shuford et al. 2000, as cited in Appendix Q). Other relatively common species

detected (i.e., more than 100 individuals counted), in descending order of abundance, were white-faced ibis, snow/Ross's goose (*Chen* spp.), long-billed curlew (*Numenius americanus*), black-necked stilt (*Himantopus mexicanus*), black tern (*Chlidonias niger*), killdeer, laughing gull (*Leucophaeus atricilla*), least sandpiper (*Calidris minutilla*), black-bellied plover (*Pluvialis squatarola*), whimbrel (*Numenius phaeopus*), Wilson's phalarope (*Phalaropus tricolor*), and greater yellowlegs (*Tringa melanoleuca*).

The Palo Verde Valley in the Blythe area supports about 108,000 acres of agricultural lands (Barrows 2007, as cited in Appendix Q). Although fewer numbers of birds are likely to use these agricultural areas compared to the Imperial Valley, the close proximity of the Palo Verde Valley to the Colorado River makes this area an important migration route and the agricultural fields in the area provide important habitat for migrant shorebirds when flooded, including large numbers of mountain plover, whimbrel (numbering up to 10,000 in the spring), and long-billed curlew (National Audubon Society 2011b, as cited in Appendix Q).

III.7.5.3.3 Other Birds

Many other bird species representing a large diversity of taxa occur in the DRECP Plan Area. Therefore, as with reptiles and amphibians, this section is organized by their primary habitat associations.

Many bird species nest in desert riparian habitats in the DRECP Plan Area, including southwestern willow flycatcher (*Empidonax traillii extimus*), Bell's vireo (*Vireo bellii pusillus*), Lucy's warbler (*Oreothlypis luciae*), yellow warbler (*Setophoaga petechia*), yellow-breasted chat (*Icteria virens*), common yellowthroat (*Geothlypis trichas*), summer tanager (*Piranga rubra*), blue grosbeak (*Passerina caerulea*), and song sparrow (*Melospiza melodia*). Other species are migrants or winter visitors in desert riparian habitats, including vesper sparrow (*Pooecetes gramineus*) and lark sparrow (*Chondestes grammacus*).

Bird species occurring in both desert riparian and desert wash include Gila woodpecker (*Melanerpes uropygialis*), ash-throated flycatcher (*Myiarchus cinerascens*), crissal thrasher (*Toxostoma crissale)*, orange-crowned warbler (*Oreothlypis celata*), Gambel's quail (*Callipepla gambelii*), common nighthawk (*Chordeiles minor*), verdin (*Auriparus flaviceps*), green-tailed towhee (*Pipilo chlorurus*), Abert's towhee (*Melozone aberti*), and gilded flicker (*Colaptes chrysoides*).

Several birds are associated with unvegetated and sparsely vegetated areas. The rock wren (*Salpinctes obsoletus*) uses rock outcrops, talus slopes, cliffs, and banks where it gleans spiders, insects, and other small invertebrates from rocks and crevices and also nests under large rocks or in cavities and crevices among the rocks. The canyon wren (*Catherpes mexicanus*) also occurs in rocky canyons and gleans spiders, insects, and other small invertebrates and nests on rock ledges, shelves, and crevices, usually near water. Cliff

swallows (*Petrochelidon pyrrhonota*) build mud nests on rock overhangs and cliffs, but a source of mud must be nearby; this species is not widespread in the DRECP Plan Area.

Bird species typically considered to be "desert species" and which commonly occur in desert scrub include Gambel's quail, white-winged dove (*Zenaida asiatica*), greater roadrunner (*Geococcyx californianus*), common poorwill (*Phalaenoptilus nuttallii*), Costa's hummingbird (*Calypte costae*), verdin, cactus wren (*Campylorhynchus brunneicapillus*), black-tailed gnatcatcher (*Polioptila melanura*), LeConte's thrasher (*Toxostoma lecontei*), green-tailed towhee (winter range), Abert's towhee, Brewer's sparrow (*Spizella breweri*; winter range), and black-throated sparrow (*Amphispiza bilineata*). Bendire's thrasher (*Toxostoma bendirei*) occurs locally in Joshua tree woodland, as well as desert succulent scrub. Though cosmopolitan in distribution, mourning doves (*Zenaida macroura*) are common in desert habitats. The Eurasian collared-dove (*Streptopelia decaocto*), most often simply called the collared dove, is a species native to Asia and Europe, and recently introduced to North America. This species is expanding its range in California including the DRECP Plan Area.

The more mesic coastal scrub and chaparral vegetation types have a limited distribution in the DRECP Plan Area and tend to occur at the mid-elevations of the mountain ranges that bound the desert portions of the DRECP Plan Area. Year-round resident species that typically are only found in the scrub and chaparral vegetation types include California quail (*Callipepla californica*), California thrasher (*Toxostoma redivivum*), wren-tit (*Chamaea fasciata*), California towhee (*Melozone crissalis*), spotted towhee (*Pipilo maculatus*), rufous-crowned sparrow (*Aimophila ruficeps*), and black-chinned sparrow (*Spizella atrogularis*).

Bird species typical of pinyon–juniper woodland, but also commonly found in other vegetation types within the DRECP Plan Area, include Brewer's sparrow, black-chinned hummingbird (*Archilochus alexandri*), western scrub-jay (*Aphelocoma californica*), oak titmouse (*Baeolophus inornatus*), bushtit (*Psaltriparus minimus*), Bewick's wren (*Thryomanes bewickii*), crissal thrasher, gray-headed junco (*Junco hyemalis caniceps*), ladder-backed woodpecker (*Picoides scalaris*), ash-throated flycatcher, Cassin's kingbird (*Tyrannus vociferans*), mountain chickadee (*Poecile gambeli*; at higher elevations), blue-gray gnatcatcher (*Polioptila caerulea*), black-throated gray warbler (*Setophaga nigrescens*), and Scott's oriole (*Icterus parisorum*). Species somewhat limited to pinyon–juniper woodland include pinyon jay (*Gymnorhinus cyanocephalus*), which breeds in pinyon but may forage in shrublands and grassland; juniper titmouse (*Baeolophus ridgwayi*), which occurs in the north and northeastern portions of the Mojave Desert; hepatic tanager (*Piranga flava*), which is a rare summer resident in pinyon woodland on Clark Mountain, in the Kingston Mountains, the New York Mountains, and the northeastern San Bernardino Mountains; and gray vireo (*Vireo vicinior*), which also requires dense stands of chaparral near pinyon–juniper woodlands (Garrett and Dunn 1981; Small 1974, as cited in Appendix Q).

Birds characteristic of oak woodlands and forests include acorn woodpecker (*Melanerpes formicivorus*), Nuttall's woodpecker (*Picoides nuttallii*), northern flicker (*Colaptes auratus*), white-breasted nuthatch (*Sitta carolinensis*), western scrub-jay, oak titmouse, band-tailed pigeon (*Patagioenas fasciata*), and Hutton's vireo (*Vireo huttoni*) (Small 1974, as cited in Appendix Q). Acorns are an important food source for several common bird species, including acorn woodpecker, western scrub-jay, and oak titmouse. Caching of acorns by scrub jays also promotes oak regeneration and recruitment.

Due to the relatively small amount of conifer forest in the DRECP Plan Area, the wildlife populations dependent on coniferous habitats probably are relatively small, but several bird species common in coniferous habitats include Steller's jay (*Cyanocitta stelleri*), Clark's nutcracker (*Nucifraga columbiana*), pinyon jay, and mountain chickadee. Conifers also provide a large insect prey base for many bird species, including a variety of warblers.

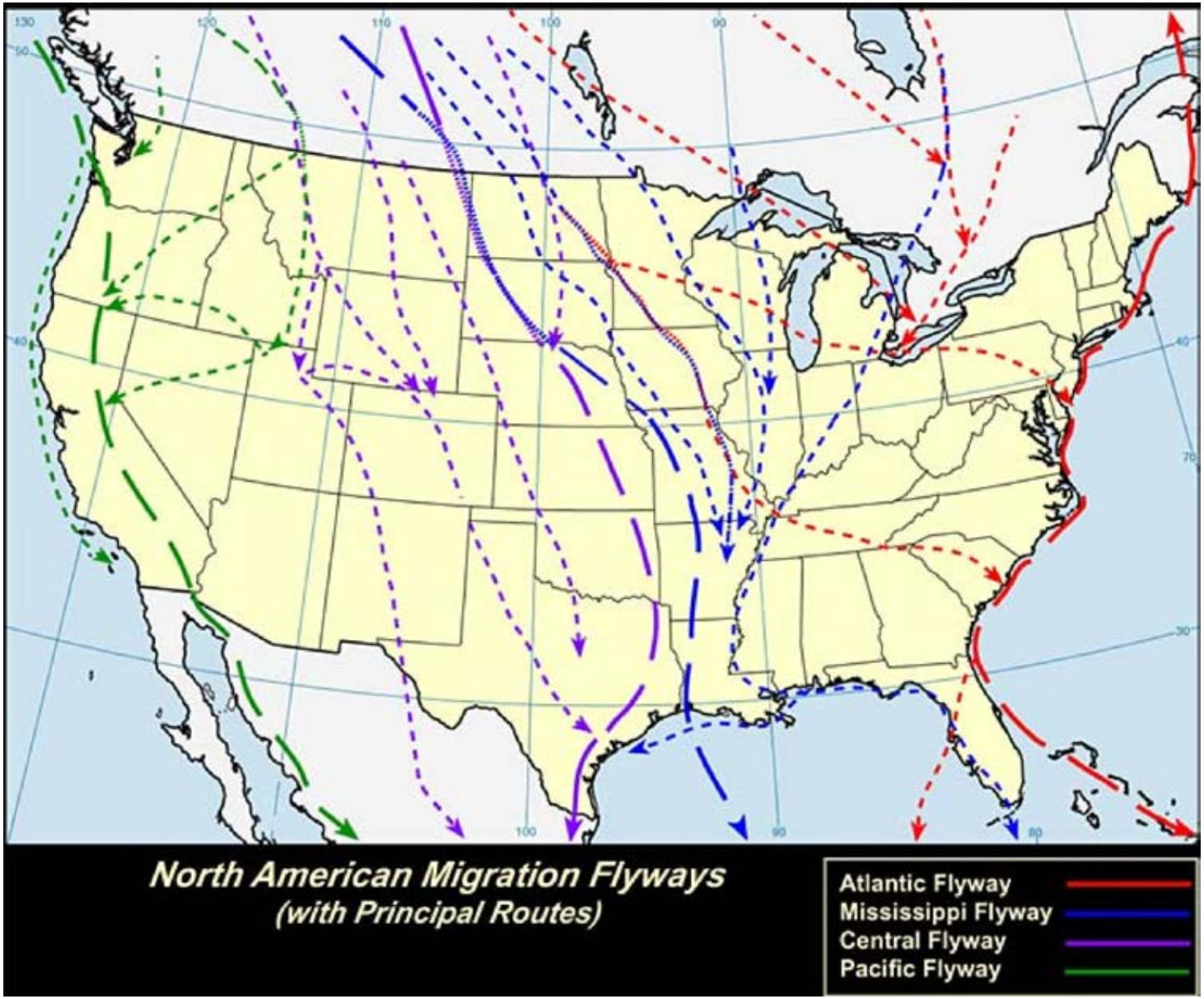
III.7.5.3.4 Upland Game Birds

Upland game birds regulated by CDFW include ring-necked pheasant (*Phasianus colchicus*), quail (*Callipepla* spp.), chukar (*Alectoris chukar*), sage grouse (*Centrocercus* spp.) sooty and ruffed grouse (*Dendragapus* spp.), white-tailed ptarmigan (*Lagopus leucura*), wild turkey (*Meleagris gallopavo*), band-tailed pigeon, doves (*Zenaida* and *Streptopelia* spp.), and Wilson's snipe (CDFG 2012b). Although American crow (*Corvus brachyrhynchos*) is defined as a nongame bird under California state laws and regulations, take is allowed under both hunting and depredation and nuisance provisions. Greater sage-grouse (*Centrocercus urophasianus*), Gambel's quail, California quail, mourning dove, and white-winged dove are all native to California, while ring-necked pheasant, chukar, and wild turkey have been introduced (BLM and DOE 2010).

Upland game species that occur year-round within the DRECP Plan Area include Gambel's quail and numerous dove species common within the Colorado/Sonoran and Mojave desert areas of California (BLM and DOE 2010), ring-necked pheasant in the Imperial Valley within the agricultural complex south of the Salton Sea, chukar within the Mojave Desert as far south as San Bernardino County, Wilson's snipe in the Imperial Valley within the agricultural complex south of the Salton Sea and along the Colorado River, and the American crow at two locations along the Colorado River (Zeiner et al. 1989).

III.7.5.3.5 Migratory Birds and Routes

Many of the bird species occurring in the DRECP Plan Area are seasonal residents or migrants. The DRECP Plan Area falls within the Pacific Flyway, one of the four major North American migration flyways (Lincoln et al. 1998; Figure III.7-14). This pathway is used in spring by birds migrating north from wintering areas to breeding grounds and in fall by birds migrating south to wintering areas. The Pacific Flyway includes the Pacific Coast Route, which occurs between the Rocky Mountains and the Pacific coast of the United States.



Sources: http://www.birdnature.com/

FIGURE III.7-14

North American Migration Flyways

INTENTIONALLY LEFT BLANK

The southward route of the long-distance migratory landbirds of the Pacific area extends chiefly through the interior of California to the mouth of the Colorado River and on to winter quarters in western Mexico (Lincoln et al. 1998). The Salton Sea is a crucial stopover site on the Pacific Flyway (Page et al. 1992; Shuford et al. 1999, 2002, and 2003, as cited in Patten et al. 2003).

The species within the DRECP Plan Area that migrate, whether through short-range migration or species that undergo migrations of hundreds of miles or more, are protected by various regulations such as the MBTA; these protections are discussed in Section III.7.1. Some of these species remain relatively solitary throughout the year, while others occur in small to large flocks at various times of year.

III.7.5.3.6 Important Bird Areas in DRECP Plan Area

The National Audubon Society has identified Important Bird Areas globally and throughout California that provide essential habitat for breeding, wintering, or migrating birds (National Audubon Society 2008). While these sites can vary in size, they are discrete areas noticeable within the surrounding landscapes. California Important Bird Areas are defined as biogeographically distinct subregions that meet at least one of the following criteria:

- Support over 1% of the global or 10% of the California population of one or more sensitive species (breeding or wintering).
- Support at least 10 sensitive species (federally or state-listed threatened or endangered species as well as California Species of Special Concern).
- Support 10,000 or more shorebirds that can be observed in one day.
- Support 5,000 or more waterfowl that can be observed in one day.

Global Important Bird Areas are sites that meet at least one of the following criteria:

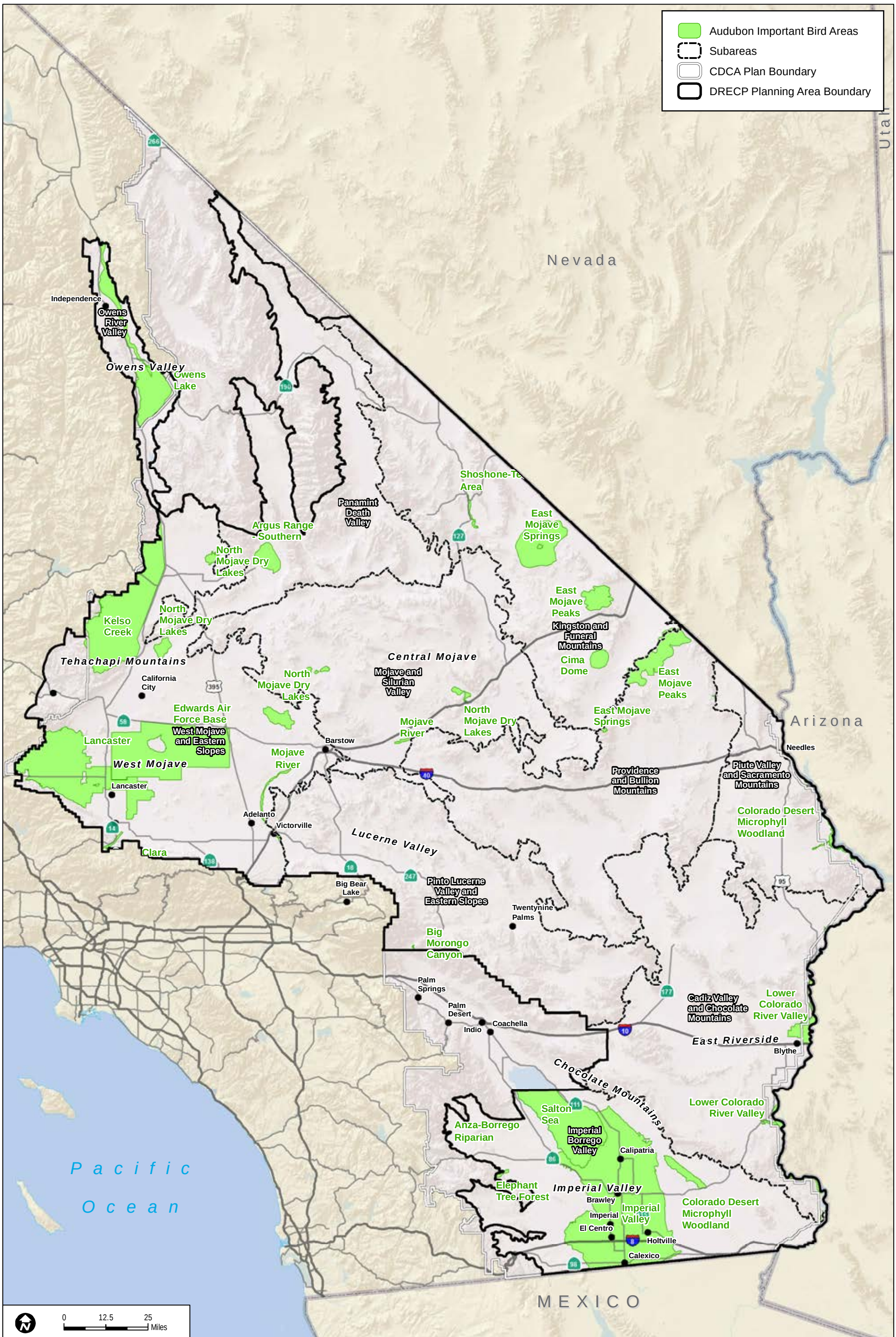
- Regularly holds significant numbers of a globally threatened species, or other species of global conservation concern.
- Holds a significant proportion of a species or assemblage of species (excluding seabirds) whose range is considered restricted (i.e., a world distribution of less than 50,000 km^2 (19,305 mi^2)).
- Holds a significant proportion of a species or assemblage of species (excluding seabirds) whose distributions are largely or wholly confined to one biome (world distribution often is more than 50,000 km^2 (19,305 mi^2)).
- Regularly supports at least 1% of the North American population of a congregatory waterbird species simultaneously, or 5% or more over a season.
- Regularly supports at least 1% of the global population of a congregatory seabird or landbird species simultaneously, or 5% or more over a season.

Represents a "bottleneck" where 5% or more of the North American population of a migratory waterbird species, or 5% or more of the global population of a migratory seabird or landbird species, regularly passes during the spring and/or autumn migration season. These Important Bird Areas provide a useful framework for helping guide efforts to conserve birds statewide (National Audubon Society 2008). There are 21 Important Bird Areas identified within the DRECP Plan Area, as shown in Figure III.7-15 and Table III.7-22.

Table III.7-22
Important Bird Areas within the DRECP Plan Area

Important Bird Area	Acreage	Audubon Conservation Status	Status	Criteria for Designation
Antelope Valley	280,000	Cons Action	Global	P/L
Anza-Borrego Riparian	40	NA	Global	P/L
Argus Range–Southern	<10	NA	State	P
Big Morongo Canyon	300	NA	State	P/L
Cima Dome	15,000	NA	State	P
Colorado Desert Microphyll Woodlands	21,000	High Priority	State	P
East Mojave Peaks	195,000	NA	Global	P
East Mojave Springs	2,000	NA	State	P
EAFB	296,000	NA	Global	L/S/W
Elephant Tree Forest	2,000	NA	State	P
Imperial Valley	624,000	Cons Action	Global	P/L/S/W
Kelso Creek	1,000	Cons Action	State	P/L
Lower Colorado River Valley	44,000	High Priority	Global	P/L/S/W
Mojave River	9,000	NA	State	P/L
North Mojave Dry Lakes	73,000	NA	State	L/W
Owens Lake	76,000	Cons Action	State	P/L/S/W
Owens River	38,000	Cons Action	State	P/L/W
Salton Sea	191,000	Cons Action	Global	P/L/S/W
Santa Clara River Valley	3,000	High Priority	Global	P/L
Shoshone-Tecopa Area	3,000	NA	State	L
Southern Sierra Desert Canyons	274,000	NA	State	L
Total	**2,149,000**			

NA = Not Assessed
Cons Action = Already receiving, or will receive, conservation work over the next 5 years
High Priority = A high priority for conservation based on analysis of biological value, threats, and conservation opportunities
P = >10% of CA/1% global population of one or more special-status taxa
L = 10 or more special-status species
S = >10,000 possible in 1-day count
W = >5,000 waterfowl in 1-day count
Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.



Sources: ESRI (2015); CEC (2013); BLM (2015); CDFW (2013); USFWS (2013); National Audubon Society (2015)

FIGURE III.7-15

Audubon Important Bird Areas

INTENTIONALLY LEFT BLANK

Cadiz Valley and Chocolate Mountains Ecoregion Subarea

The Important Bird Areas within the Cadiz Valley and Chocolate Mountains ecoregion subarea are shown on Figure III.7-15 and detailed in Table III.7-23.

Table III.7-23
Important Bird Areas within the Cadiz Valley and Chocolate Mountains Ecoregion Subarea of the DRECP

Important Bird Area	Acreage
Colorado Desert Microphyll Woodlands	2,000
Lower Colorado River Valley	34,000
Total	**36,000**

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

Imperial Borrego Valley Ecoregion Subarea

The Important Bird Areas within the Imperial Borrego Valley ecoregion subarea are shown on Figure III.7-15 and detailed in Table III.7-24.

Table III.7-24
Important Bird Areas within the Imperial Borrego Valley Ecoregion Subarea of the DRECP

Important Bird Area	Acreage
Anza-Borrego Riparian	40
Colorado Desert Microphyll Woodlands	18,000
Elephant Tree Forest	2,000
Imperial Valley	624,000
Lower Colorado River Valley	100
Salton Sea	191,000
Total	**835,000**

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

Kingston and Funeral Mountains Ecoregion Subarea

The Important Bird Areas within the Kingston and Funeral Mountains ecoregion subarea are shown on Figure III.7-15 and detailed in Table III.7-25.

Table III.7-25
Important Bird Areas within the Kingston and Funeral Mountains Ecoregion Subarea of the DRECP

Important Bird Area	Acreage
Cima Dome	15,000
East Mojave Peaks	129,000
East Mojave Springs	800
Shoshone–Tecopa Area	3,000
Total	**148,000**

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10 and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

Mojave and Silurian Valley Ecoregion Subarea

The Important Bird Areas within the Mojave and Silurian Valley ecoregion subarea are shown on Figure III.7-15 and detailed in Table III.7-26.

Table III.7-26
Important Bird Areas within the Mojave and Silurian Valley Ecoregion Subarea of the DRECP

Important Bird Area	Acreage
Mojave River	2,000
North Mojave Dry Lakes	10,000
Total	**11,000**

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

Owens River Valley Ecoregion Subarea

The Important Bird Areas within the Owens River Valley ecoregion subarea are shown on Figure III.7-15 and detailed in Table III.7-27.

Table III.7-27
Important Bird Areas within the Owens River Valley Ecoregion Subarea of the DRECP

Important Bird Area	Acreage
Owens Lake	76,000
Owens River	38,000
Total	**115,000**

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

Panamint Death Valley Ecoregion Subarea

The Important Bird Areas within the Panamint Death Valley ecoregion subarea are shown on Figure III.7-15 and detailed in Table III.7-28.

Table III.7-28
Important Bird Areas within the Panamint Death Valley Ecoregion Subarea of the DRECP

Important Bird Area	Acreage
Argus Range–Southern	<10
North Mojave Dry Lakes	27,000
Total	**27,000**

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

Pinto Lucerne Valley and Eastern Slopes Ecoregion Subarea

The Important Bird Areas within the Pinto Lucerne Valley and Eastern Slopes ecoregion subarea are shown on Figure III.7-15 and detailed in Table III.7-29.

Table III.7-29
Important Bird Areas within the Pinto Lucerne Valley and Eastern Slopes Ecoregion Subarea of the DRECP

Important Bird Area	Acreage
Big Morongo Canyon	300
Mojave River	200
Total	**400**

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the

nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

Piute Valley and Sacramento Mountains Ecoregion Subarea

The Important Bird Areas within the Piute Valley and Sacramento Mountains ecoregion subarea are shown on Figure III.7-15 and detailed in Table III.7-30.

Table III.7-30
Important Bird Areas within the Piute Valley and Sacramento Mountains Ecoregion Subarea of the DRECP

Important Bird Area	Acreage
Colorado Desert Microphyll Woodlands	1,000
East Mojave Springs	40
Lower Colorado River Valley	10,000
Total	**11,000**

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

Providence and Bullion Mountains Ecoregion Subarea

The Important Bird Areas within the Providence and Bullion Mountains ecoregion subarea are shown on Figure III.7-15 and detailed in Table III.7-31.

Table III.7-31
Important Bird Areas within the Providence and Bullion Mountains Ecoregion Subarea of the DRECP

Important Bird Area	Acreage
East Mojave Peaks	66,000
East Mojave Springs	900
Total	**67,000**

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

West Mojave and Eastern Slopes Ecoregion Subarea

The Important Bird Areas within the West Mojave and Eastern Slopes ecoregion subarea are shown on Figure III.7-15 and detailed in Table III.7-32.

Table III.7-32
Important Bird Areas within the West Mojave and Eastern Slopes Ecoregion Subarea of the DRECP

Important Bird Area	Acreage
Antelope Valley	280,000
EAFB	296,000
Kelso Creek	1,000
Mojave River	7,000
North Mojave Dry Lakes	36,000
Santa Clara River Valley	3,000
Southern Sierra Desert Canyons	274,000
Total	**897,000**

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

III.7.5.4 Fish

Because fish are limited to aquatic habitats, they are not common throughout the DRECP Plan Area. However, approximately 35 taxa are known from the Sonoran Desert and 19 taxa are known from the Mojave Desert (CDFG 2010a, as cited in Appendix Q). Several of these fish taxa are included on the CDFW Special Animals List or are listed under the ESA because of their high level of endemism or because of other threats and environmental stressors. Special-status fish in the Mojave Desert include Amargosa pupfish (*Cyprinodon nevadensis amargosae*), Saratoga Springs pupfish (*Cyprinodon nevadensis nevadensis*), Shoshone pupfish (*Cyprinodon nevadensis shoshone*), Owens pupfish (*Cyprinodon radiosus*), Owens tui chub (*Siphateles bicolor snyderi*), Cottonball Marsh pupfish (*Cyprinodon salinus milleri*), Salt Creek pupfish (*Cyprinodon salinus salinus*), Mohave tui chub (*Siphateles (Gila) bicolor mohavensis*), arroyo chub (*Gila orcutti*), Amargosa Canyon speckled dace (*Rhinichthys osculus* ssp. 1), and Owens speckled dace (*Rhinichthys osculus* ssp. 2). Special-status fish known from the Sonoran Desert include desert pupfish (*Cyprinodon macularius*), razorback sucker (*Xyrauchen texanus*), and bonytail chub (*Gila elegans*), the latter two of which are federally and state-listed endangered and occur in the Colorado River.

Non-native fish predators within the DRECP Plan Area are a serious threat to native fish populations. In addition to predating on young and adult fish, non-native fish predators compete with native fish for food and habitat. Non-native fish predators in the DRECP Plan Area include largemouth bass (*Micropterus salmoides*), smallmouth bass (*Micropterus dolomieui*), brown trout (*Salmo trutta*), and bluegill (*Lepomis macrochirus*), mosquitofish (*Gambusia affinis*), and crayfish (*Pastifasticus leniusculus*). In addition to non-native predators, other threats to native fish species within the DRECP Plan Area include habitat destruction and modifications including water diversions, decrease in water quality, increase in emergent vegetation, and hybridization with introduced fish species.

Amargosa pupfish (including all three subspecies *C. n. amargosae*, *C. n. nevadensis* and *C. n. shoshone*) inhabit freshwater marsh in the Amargosa River in Amargosa Canyon and marshes associated with Tecopa Hot Springs and Tecopa Borehole. These broad marshes support algae and emergent cattails and rushes (*Juncus* spp.). The Saratoga Springs pupfish only occurs in Saratoga Springs in the southeastern corner of Death Valley. The Shoshone pupfish occurs within an artificial pond within the Shoshone Spring system (Parmenter, pers. comm. 2013). Amargosa pupfish primarily feed on cyanobacteria and algae, but seasonally they prey on small invertebrates such as chironomid larvae, ostracods, copepods, and mosquito larvae (Moyle 2002, as cited in Appendix Q). They occur in areas where the water column velocities are less than 2 centimeters per second (0.79 inches/second) (Moyle 2002, as cited in Appendix Q). Seasonal water temperatures range from 10 degrees Celsius (°C) to 38°C (50°F and 100°F) and may be close to freezing during severe winters; the maximum water temperature these pupfish can stand is about 42°C (108°F) (Moyle 2002, as cited in Appendix Q).

In contrast to the freshwater pupfish, the Cottonball Marsh pupfish and Salt Creek pupfish are adapted to much more saline conditions that may be more than two times saltier than seawater at times. Both subspecies occur on the Death Valley floor—Salt Creek pupfish on Salt Creek in the northern part of Death Valley and Cottonball Marsh pupfish in a marsh adjacent to the sink for Salt Creek. Occupied pools are bordered by salt-tolerant plants, such as saltgrass (*Distichlis spicata*) and pickleweed (*Salicornia* spp.). The Salt Creek pupfish primarily feeds on algae and cyanobacteria, but the Cottonball Marsh pupfish, and likely the Salt Creek pupfish, also feed on amphipods, ostracods, and small snails that occur on algal mats. Seasonal water temperatures range from near freezing to almost 40°C (104°F). Salt Creek pupfish can tolerate water temperatures up to 38°C (100°F) and survive in short-term exposure to 43°C (109°F). Salt Creek pupfish exhibit opportunistic, explosive population increases when water flows are high, possibly reaching peaks in the millions and measuring densities of 527 fish per square meter. The population peaks, followed by die-offs when waters recede, provide abundant food source for birds such herons and egrets and common ravens (*Corvus corax*) (Moyle 2002, as cited in Appendix Q).

The desert pupfish occurs in small isolated populations around the Salton Sea, New and Alamo rivers (and associated tributaries), and in shoreline pools and irrigation drainages with quiet water conditions (Moyle 2002, as cited in Appendix Q). They have also been introduced into sanctuaries in Anza-Borrego Desert State Park and elsewhere. Desert pupfish are adapted to a wide range of habitat conditions, occurring in fresh water to highly saline conditions twice as salty as sea water and water temperatures ranging from 7°C to 45°C (45°F to 113°F) (Moyle 2002, as cited in Appendix Q). During the winter, they bury themselves under loose debris and become dormant (Moyle 2002, as cited in Appendix Q). They are opportunistic omnivores, feeding on algae, ostracods, copepods, aquatic crustaceans, insect larvae, and small snails.

III.7.5.5 Mammals

The DRECP Plan Area is within or intersects with the geographic ranges of about 75 mammal species (Ingles 1965, as cited in Appendix Q), including rodents, bats, shrews, carnivores, and ungulates.

III.7.5.5.1 Small Mammals

The largest group of mammals occurring in the DRECP Plan Area is rodents (Rodentia) comprising approximately 36 species. The rodent group present in the DRECP Plan Area includes about 12 species of kangaroo rats (*Dipodomys* spp.), kangaroo mice (*Microdipodops* ssp.), and pocket mice (*Perognathus* and *Chaetodipus* spp.); about 12 species of "old world rodents" (Muridae), including harvest mouse (*Reithrodontomys megalotis*), woodrats (*Neotoma* spp.), deer mice (*Peromyscus* spp.), voles (*Microtus* spp.), and muskrat (*Ondatra zibethica*); about 6 squirrel species (*Ammospermophilus* spp., *Xerospermophilus* spp., *and Spermophilus* spp.); 4 chipmunk species (Sciuridae); and 2 gopher species (*Thomomys* spp.).

At least one small mammal—desert kangaroo rat (*Dipodomys deserti*)—is closely associated with dune habitats throughout the Mojave and Colorado/Sonoran deserts. This species digs burrows at the base of perennial shrubs in more stabilized areas of dunes and not in areas of rapidly shifting sand (Hoffmeister 1986, as cited in Appendix Q).

Mammals occurring in grasslands can be categorized by their primary foraging habits as herbivores, granivores, omnivores, or carnivores. In addition, most mammal species using desert grasslands require other habitats for important aspects of their daily activities or their life history. For example, many of the mammals found in grasslands use shrubs, rocks, and other substrates for cover, refuge, or nesting and burrowing. For this reason, many of the mammals using desert grasslands occur in grassland/shrubland mosaics and shrub steppe vegetation types more frequently than monotypic grasslands. Common desert grassland herbivores (grazers and browsers) include desert cottontail (*Sylvilagus*

audubonii), black-tailed jackrabbit (*Lepus californicus*), white-tailed antelope squirrel (*Ammospermophilus leucurus*), round-tailed ground squirrel (*Xerospermophilus tereticaudus*), the endemic Mohave ground squirrel (*Xerospermophilus mohavensis*), and Botta's pocket gopher (*Thomomys bottae*). These species primarily forage on grasses and forbs but may also feed on leaves or seeds.

Several mammals are strongly associated with unvegetated habitats. Spiny pocket mouse (*Chaetodipus spinatus*) occurs in the Sonoran Desert, and the canyon mouse (*Peromyscus crinitus*) occurs throughout the DRECP Plan Area in rocky habitats. The canyon mouse burrows beneath rocks and in rock crevices. The rock squirrel (*Spermophilus variegatus*) is endemic to the Providence Mountains in the eastern Mojave Desert where it uses rocky areas for burrows and dens.

Mammals that are common, but generally limited to desert scrub in the DRECP Plan Area, are almost all rodents. Most of the rodent species are kangaroo rats or pocket mice and several occur throughout the Mojave and Colorado/Sonoran deserts, including Merriam's kangaroo rat, desert kangaroo rat, little pocket mouse (*Perognathus longimembris*), and long-tailed pocket mouse (*Chaetodipus formosus*). Other kangaroo rats and pocket mice are less widespread and more locally distributed, including Great Basin pocket mouse (*Perognathus parvus*), desert pocket mouse (Sonoran Desert and locally in Mojave Desert), spiny pocket mouse (primarily Sonoran Desert), chisel-toothed kangaroo rat (*Dipodomys microps*) (Mojave and Great Basin desert areas supporting shadscale), and Panamint kangaroo rat (*Dipodomys panamintinus*) (Mojave and Great Basin deserts). Other common rodents in the desert scrub vegetation types include cactus mouse (*Peromyscus eremicus*), canyon deermouse (*Peromyscus crinitus*), grasshopper mouse (*Onychomys torridus*), and desert woodrat (*Neotoma lepida*). The white-throated woodrat (*Neotoma albigula*) occurs throughout the Colorado/Sonoran Desert. While the white-tailed antelope squirrel is fairly widespread throughout the DRECP Plan Area, the ground squirrels tend to have limited distributions. The round-tailed ground squirrel is also fairly widespread in the Colorado/Sonoran Desert and eastern Mojave Desert. The Mohave ground squirrel is limited to the western Mojave Desert in the eastern Kern, northeastern Los Angeles, western San Bernardino, and southwestern Inyo counties. The rock squirrel is limited to the Providence Mountains in the eastern Mojave Desert. Two lagomorphs are common throughout the scrub vegetation types—black-tailed jackrabbit and desert cottontail.

Certain small mammals are also fairly exclusive to coastal scrub and chaparral habitats, including dusky-footed woodrat (*Neotoma fuscipes*), Pacific kangaroo rat (*Dipodomys agilis*), Dulzura kangaroo rat (*Dipodomys simulans*), brush deermouse (*Peromyscus boylii*), California deermouse (*Peromyscus californicus*), California pocket mouse (*Chaetodipus californicus*), San Diego pocket mouse (*Chaetodipus fallax*), and brush rabbit (*Sylvilagus bachmani*).

At least three mammals may occur in marsh habitat associated with the Colorado River system—Arizona and Yuma hispid cotton rat (*Sigmodon arizonae plenus* and *S. hispid eremicus*), muskrat (Zeiner et al. 1990, as cited in Appendix Q), and American beaver (*Castor canadensis*). The muskrat is not native to California but may occur in marshy habitat elsewhere in the DRECP Plan Area such as the Salton Sea, irrigation canals and drains in the Imperial Valley, and at least two locations in southern Inyo County (Zeiner et al. 1990, as cited in Appendix Q). The muskrat is primarily herbivorous and feeds on aquatic plants such as cattails and bulrush (*Scirpus* spp.), but it also preys on small vertebrates such as crayfish, which also are not native to California (Zeiner et al. 1990, as cited in Appendix Q). Within the DRECP Plan Area, Amargosa vole is also closely associated with marsh systems and is a Focus Species under DRECP. Although not a Focus Species, Owens Valley vole (*Microtus californicus vallicola*) is associated with marsh habitats in the DRECP Plan Area.

Riparian vegetation along perennial water sources provide habitat for the American beaver. Within the DRECP Plan Area, American beavers are known to occur along the Colorado River (Zeiner et al. 1990, as cited in Appendix Q), in the Imperial Valley agricultural complex, and on the San Bernardino National Forest.

Small mammals such as chipmunks are strongly associated with coniferous habitats. Several other small mammals that occur in the coniferous habitats are also common in the woodland and savannah and scrub and chaparral habitats, including deer mice and woodrats.

The San Diego pocket mouse occurs in pinyon–juniper, as well as scrubs and chaparral in the Peninsular Ranges. Other relatively common mammals occurring in pinyon–juniper woodland, as well as other vegetation types, are black-tailed jackrabbit, brush rabbit, desert cottontail, Pacific kangaroo rat, California pocket mouse, dusky-footed woodrat, desert woodrat, and several deermouse species.

III.7.5.5.2 Carnivores and Ungulates

Eleven carnivore (Carnivora) species occur in the DRECP Plan Area, including mountain lion (*Puma concolor*), bobcat (*Lynx rufus*), coyote (*Canis latrans*), gray fox (*Urocyon cinereoargenteus californicus*), desert kit fox (*Vulpes macrotis arsipus*), American black bear (*Ursus americanus*), raccoon (*Procyon lotor*), ringtail (*Bassariscus astutus*), weasel (*Mustela* spp.), and American badger (*Taxidea taxus*). At least three ungulates occur in the DRECP Plan Area, including elk (*Cervus elaphus*), bighorn sheep, and mule deer (*Odocoileus hemionus*).

Mammals such as mule deer, gray fox, bobcat, and raccoon use woodland and forests for cover, refuge, and movement. Jeffrey pine (*Pinus jeffreyi*) provides seed for many species, as well as bark and foliage that are food sources for squirrels and mule deer. Large mammals found in pinyon–juniper include mule deer, mountain lion, and bobcat. Several mammalian

carnivores, including coyote, desert kit fox, gray fox, and American badger, hunt in desert grasslands for lagomorphs, rodents, birds, reptiles, amphibians, and larger invertebrates. Three subspecies of mule deer occur in the DRECP Plan Area, including California mule deer (*Odocoileus hemionus californicus*), the most abundant and widespread of California's mule deer sub-species, desert mule deer or burro deer (*O. h. eremicus*), and Inyo mule deer (*O. h. inyoensis*) (CDFG 2012c).

Desert scrub vegetation types generally host few large mammals (Appendix Q), with kit fox and coyote being the most common inhabitants. However, gray fox, ringtail, bobcat, and American badger occur frequently in the desert scrub. Bighorn sheep occur in scattered locations in steep and rugged rocky terrains associated with the many mountain ranges in the DRECP Plan Area. Bighorn sheep use rocky terrains for escape, bedding, and lambing, but they move to more open and exposed habitats to forage and access water.

III.7.5.5.3 Bats

Bats (Chiroptera) form the second largest group of mammals within the DRECP Plan Area, with approximately 19 species, including species from the Phyllostomatidae (leaf-nosed bats), Verspertionidae (evening bats), and Molossidae (free-tailed bats) families.

Several bat species use rock outcrops and crevices for day roosting sites. The bat species most strongly associated with rocky crevices include Yuma myotis (*Myotis yumanensis*), California myotis (*M. californicus*), long-legged myotis (*M. volans*), western pipistrelle (*Pipistrellus hesperus*), spotted bat (*Euderma maculatum*), and pocketed free-tailed bat (*Nyctinomops femorosaccus*), which must drop from a height to gain flying speed. Other bat species that use rock crevices include fringed myotis (*M. thysanodes*), western small-footed myotis (*Myotis ciliolabrum*), pallid bat (*Antrozous pallidus*), and Brazilian free-tailed bat (*Tadarida brasiliensis*). California leaf-nosed bat (*Macrotus californicus*), pallid bat, and Townsend's big-eared bat (*Corynorhinus townsendii*) use caves, mines, and tunnels and are often associated with unvegetated areas. Bat use of roost sites in the DRECP Plan Area is not well understood for most species, but several bat species have been recorded in various areas of the DRECP Plan Area. Californian myotis has been documented in southern Inyo County, eastern Kern County, and south-central San Bernardino County. The pallid bat and Townsend's big-eared bat have been documented in scattered locations throughout the DRECP Plan Area. California leaf-nosed bat appears to have expanded its range northward and has been documented in caves and mines in much of the DRECP Plan Area. Several other species have been documented in single areas: big brown bat (*Eptesicus focus*) in northern Riverside County, Yuma myotis in eastern Los Angeles County, and long-legged myotis in southern Inyo County.

There are few records for western red bat (*Lasiurus blossevillii*), a tree bat closely associated with well-developed riparian habitats that provide suitable roosting sites. There are two

records for Death Valley and a breeding record for the Twentynine Palms area (Pierson et al. 2006). The hoary bat (*L. cinereus*) has been recorded along the Lower Colorado River, in the Little San Bernardino Mountains, the Clark and Granite Mountains in eastern San Bernardino County, Death Valley in Inyo County, and the Chocolate Mountains in Imperial County.

Several bat species have geographic ranges that overlap the three main agricultural areas within the DRECP Plan Area. While most bats primarily forage in natural habitats (e.g., scrubs, chaparral, woodland, forest, desert wash, and riparian areas), they also may be attracted to agricultural fields for insect prey, including moths, dragonflies, damselflies, grasshoppers, crickets, mantids, walking sticks, true bugs, beetles, ants, wasps, and bees. Bat species that may occur throughout the DRECP Plan Area and that may forage in agricultural areas include big brown bat, Brazilian free-tailed bat, California myotis, pallid bat, spotted bat, Townsend's big-eared bat, and western pipistrelle. Bats that may occur more locally in the DRECP Plan Area and forage in agricultural areas include California leaf-nosed bat in the Sonoran and eastern Mojave deserts, pocketed free-tailed bat and western yellow bat (*Lasiurus xanthinus*) in the Sonoran Desert, and Yuma myotis along the Colorado River.

III.7.6 Special-Status Species

Special-status species herein are defined as plants and animals legally protected under the ESA and/or the CESA, or otherwise designated as special-status or sensitive under state and/or federal regulations and policies. State and federal definitions for these species are provided in Section III.7.1.

Special-status plants are species that fall into one or more of the following categories:

- Listed or proposed for listing as threatened or endangered under the ESA (50 CFR 17.12)
- Candidates for possible future listing as threatened or endangered under the ESA (75 FR 69222–69294)
- Listed or candidates for listing by the State of California as threatened or endangered under the CESA (14 CCR 670.5)
- Listed as rare under the California Native Plant Protection Act (California Fish and Game Code, Section 1900 et seq.)
- Determined to meet the definitions of rare or endangered under the California Environmental Quality Act (CEQA) (14 CCR 15380)
- Considered by the California Native Plant Society (CNPS) to be "rare, threatened, or endangered in California" (California Rare Plant Rank [CRPR] 1B

and 2 in CNPS [2011]) or vascular plants, bryophytes, and lichens listed as having special status (CDFW 2013c)

- Listed by CNPS as plants about which more information is needed to determine their status and plants of limited distribution (CRPR 3 and 4 in CNPS [2011]) that may be included on the basis of local significance or recent biological information
- Designated by BLM or USFS as special status (often for the reasons listed above)

Special-status animals are species that fall into one or more of the following categories:

- Listed or proposed for listing as threatened or endangered under the ESA (50 CFR 17.11)
- Candidates for possible future listing as threatened or endangered under the ESA (75 FR 69222–69294)
- Determined to meet the definitions of rare or endangered under CEQA (14 CCR 15380)
- Listed or candidates for listing by the State of California as threatened or endangered under the CESA (14 CCR 670.5)
- State wildlife Species of Special Concern (CDFG 2011)
- Fully protected species under the California Fish and Game Code Section 3511 (birds), Section 4700 (mammals), Section 5515 (fish), and Section 5050 (reptiles and amphibians)
- Designated by BLM or USFS as special status (often for the reasons listed above)

III.7.6.1 Focus and Planning Species

Focus Species are those species, subspecies, or varieties whose conservation and management are provided for in the DRECP BLM LUPA. Species used in the development of the Draft DRECP conservation strategy, in addition to the identified Focus Species, are referred to as Planning Species. The Planning Agreement included an initial list of Species of Planning Interest, which was developed by the Renewable Energy Action Team (REAT) agencies during the early planning stages of the DRECP. In 2010 and 2012, the DRECP Independent Science Advisors and an Independent Science Panel provided recommendations for the Focus Species list. The process for developing the draft Focus Species (previously "Covered Species") List is summarized in Volume I, Chapter I.3, Section I.3.2 and additional information is provided in Appendix B of the Draft DRECP and EIR/EIS.

Table III.7-33 identifies the DRECP Focus and Planning Species list. Focus and Planning Species were selected through a review of their listing status, distribution in the DRECP Plan Area, presence of suitable habitat, and potential to be impacted by activities. Detailed species profiles containing legal status, natural history, and population status and trends,

as well as maps showing distribution of the species within the DRECP Plan Area, are found in the Baseline Biology Report (Appendix Q).

Thirty-seven taxa are considered Focus Species for the DRECP and two are considered Planning Species. They are listed in Table III.7-33 and shown on Figures III.7-16 through III.7-25. Figures III.7-16 through III.7-25 show a representation of where species have been recorded based on the DRECP species occurrence database, which is a compilation of multiple data sources; however, these figures do not offer a comprehensive inventory of all possible or actual species occurrences. Following Table III.7-33, a brief description of each Focus Species is provided.

Table III.7-33
DRECP Focus and Planning Species

Taxa	Common Name	Scientific Name	Federal Status[1]	State Status[2]
Focus Species				
Amphibian/ reptile	Agassiz's desert tortoise	*Gopherus agassizii*	FT	ST
	Flat-tailed horned lizard	*Phrynosoma mcallii*	BLM/FS	SC/CSC
	Mojave fringe-toed lizard	*Uma scoparia*	BLM	CSC
	Tehachapi slender salamander	*Batrachoseps stebbinsi*	BLM/FS	ST
Bird	Bendire's thrasher	*Toxostoma bendirei*	BCC/BLM	CSC
	Burrowing owl	*Athene cunicularia*	BCC/BLM	CSC
	California black rail	*Laterallus jamaicensis coturniculus*	BCC/BLM	ST/FP
	California condor	*Gymnogyps californianus*	FE	SE/FP
	Gila woodpecker	*Melanerpes uropygialis*	BCC/BLM	SE
	Golden eagle	*Aquila chrysaetos*	BCC/BLM	FP
	Greater sandhill crane	*Grus canadensis tabida*	BLM/FS	ST/FP
	Least Bell's vireo	*Vireo bellii pusillus*	FE/BCC	SE
	Mountain plover	*Charadrius montanus*	BCC/BLM	CSC
	Swainson's hawk	*Buteo swainsoni*	BLM/FS	ST
	Tricolored blackbird	*Agelaius tricolor*	BCC/BLM	SE
	Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	FT/FS/BCC/ BLM	SE
	Willow flycatcher (including southwestern)	*Empidonax traillii* (including *extimus*)	Southwestern: FE	SE
	Yuma Ridgway's rail (formerly Yuma clapper rail)	*Rallus obsoletus yumanensis* (*R. longirostris yumanensis*)	FE/BCC	ST/FP

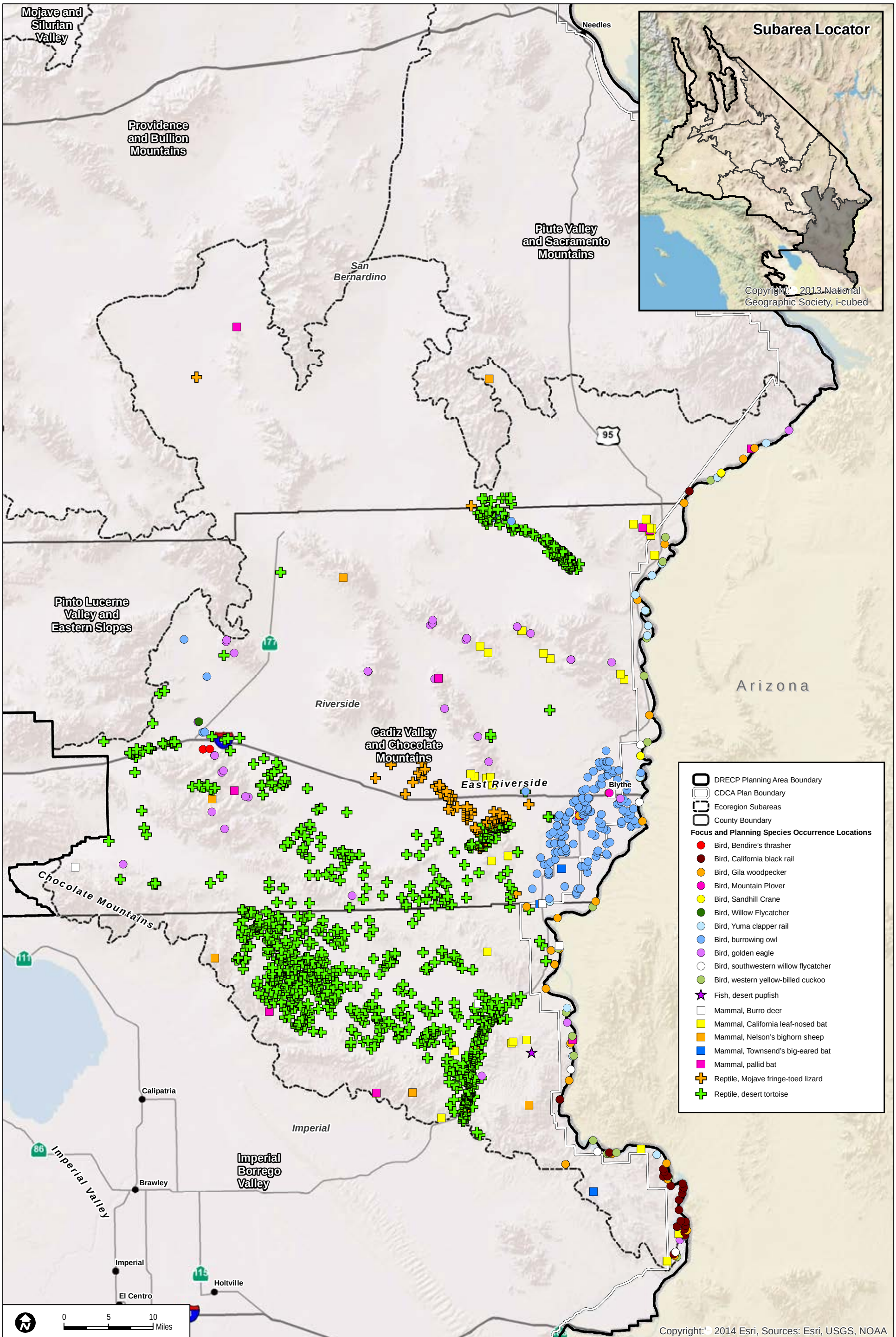
Table III.7-33
DRECP Focus and Planning Species

Taxa	Common Name	Scientific Name	Federal Status[1]	State Status[2]
Fish	Desert pupfish	*Cyprinodon macularius*	FE	SE
	Mohave tui chub	*Siphateles (Gila) bicolor mohavensis*	FE	SE/FP
	Owens pupfish	*Cyprinodon radiosus*	FE	SE/FP
	Owens tui chub	*Siphateles (Gila) bicolor snyderi*	FE	SE
Mammal	Desert bighorn sheep	*Ovis canadensis nelsoni*	BLM	FP[3]
	California leaf-nosed bat	*Macrotus californicus*	BLM/FS	CSC
	Mohave ground squirrel	*Xerospermophilus mohavensis*	BLM	ST
	Pallid bat	*Antrozous pallidus*	BLM/FS	CSC
	Townsend's big-eared bat	*Corynorhinus townsendii*	BLM/FS	SC/CSC
Plant	Alkali mariposa-lily	*Calochortus striatus*	BLM	(CRPR 1B.2)
	Bakersfield cactus	*Opuntia basilaris* var. *treleasei*	FE	SE (CRPR 1B.1)
	Barstow woolly sunflower	*Eriophyllum mohavense*	BLM	(CRPR 1B.2)
	Desert cymopterus	*Cymopterus deserticola*	BLM	(CRPR 1B.2)
	Little San Bernardino Mountains linanthus	*Linanthus maculatus*	BLM	(CRPR 1B.2)
	Mojave monkeyflower	*Mimulus mohavensis*	BLM	(CRPR 1B.2)
	Mojave tarplant	*Deinandra mohavensis*	BLM	SE (CRPR 1B.3)
	Owens Valley checkerbloom	*Sidalcea covillei*	BLM	SE (CRPR 1B.1)
	Parish's daisy	*Erigeron parishii*	FT	(CRPR 1B.1)
	Triple-ribbed milk-vetch	*Astragalus tricarinatus*	FE	(CRPR 1B.2)
Planning Species				
Mammal	Burro deer	*Odocoileus hemionus eremicus*	—	—
	Desert kit fox	*Vulpes macrotis arsipus*	—	—

1 Federal Status – FE: Federally Endangered; FT: Federally Threatened; FS: USFS Sensitive; BLM: Bureau Land Management Sensitive; BCC: USFWS Bird of Conservation Concern.

2 State Status – SE: California Endangered; ST: California Threatened; SC: Candidate for listing; CSC: California Species of Special Concern; FP: Fully Protected. CRPR: California Rare Plant Rank (formerly known as the CNPS List)–CRPR 1B: Considered rare, threatened, or endangered in California and elsewhere; CRPR 2: Considered rare, threatened, or endangered in California, but more common elsewhere.

3 Limited hunting allowed.

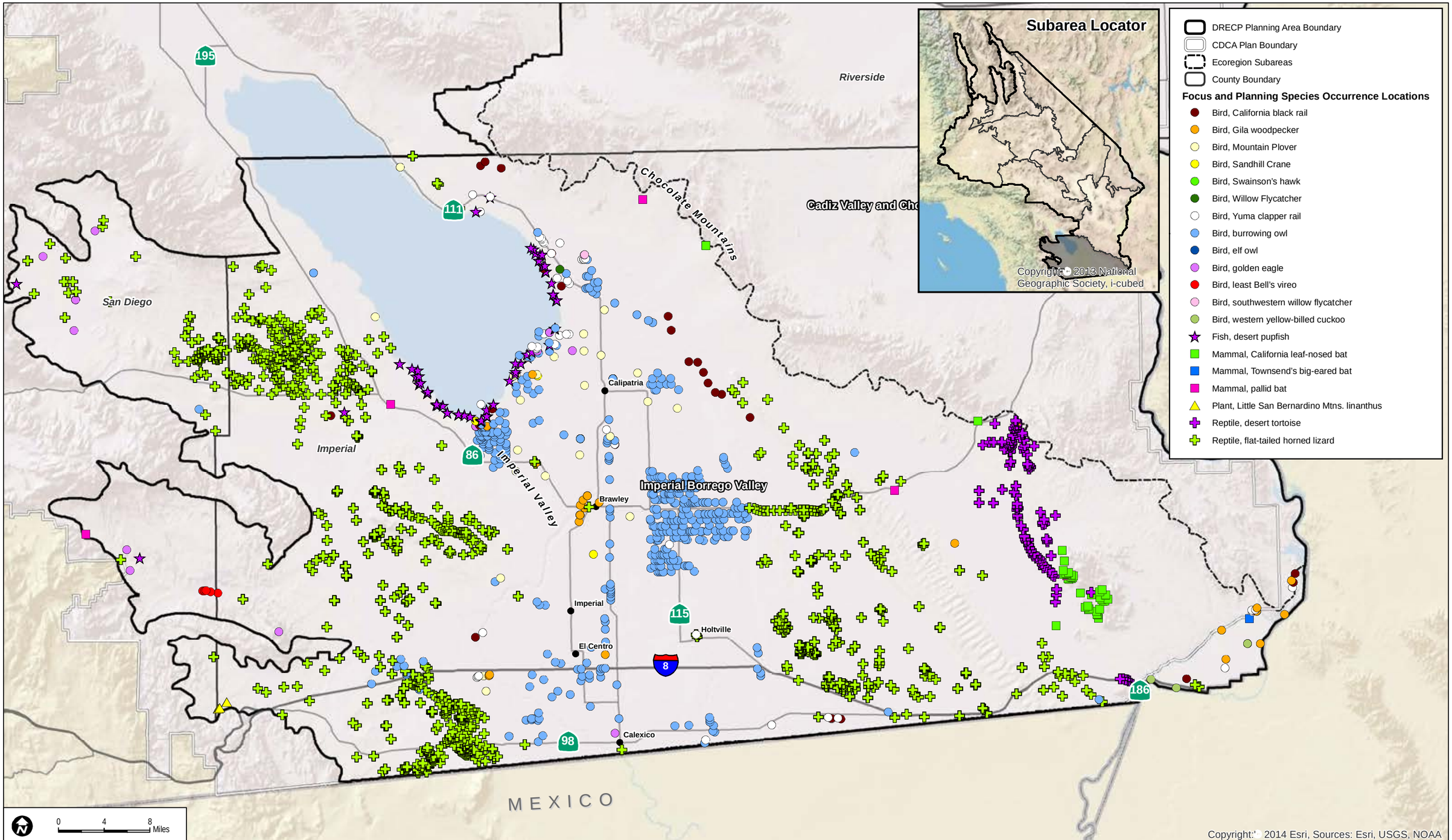


Sources: ESRI (2015); CEC (2013); BLM (2015); CDFW (2013); USFWS (2013); CNDDB (2013)

FIGURE III.7-16

Focus and Planning Species Occurrence Locations - Cadiz Valley and Chocolate Mountains Ecoregion Subarea

INTENTIONALLY LEFT BLANK

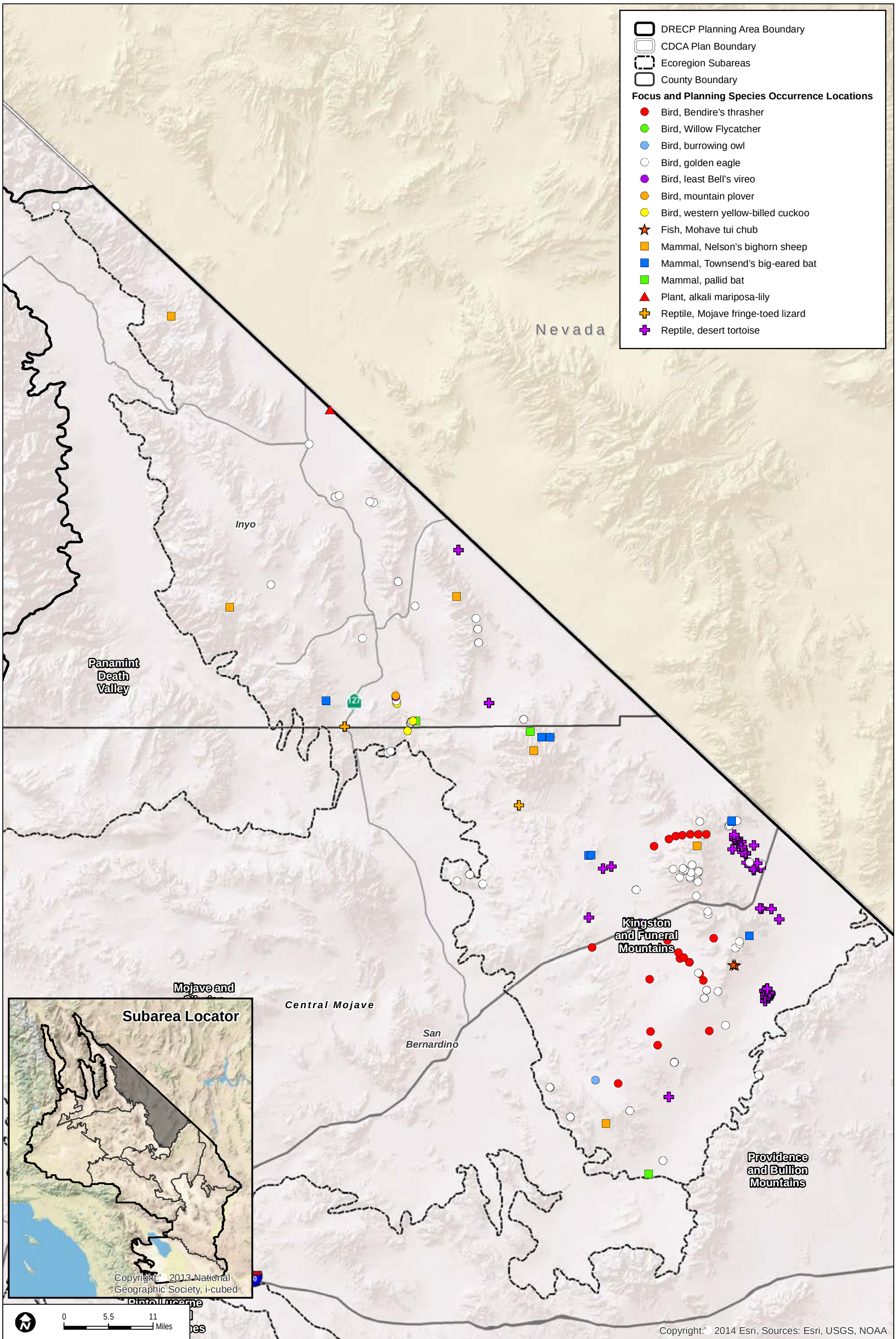


Sources: ESRI (2015); CEC (2013); BLM (2015); CDFW (2013); USFWS (2013); CNDDB (2013)

FIGURE III.7-17

Focus and Planning Species Occurrence Locations - Imperial Borrego Valley Ecoregion Subarea

INTENTIONALLY LEFT BLANK

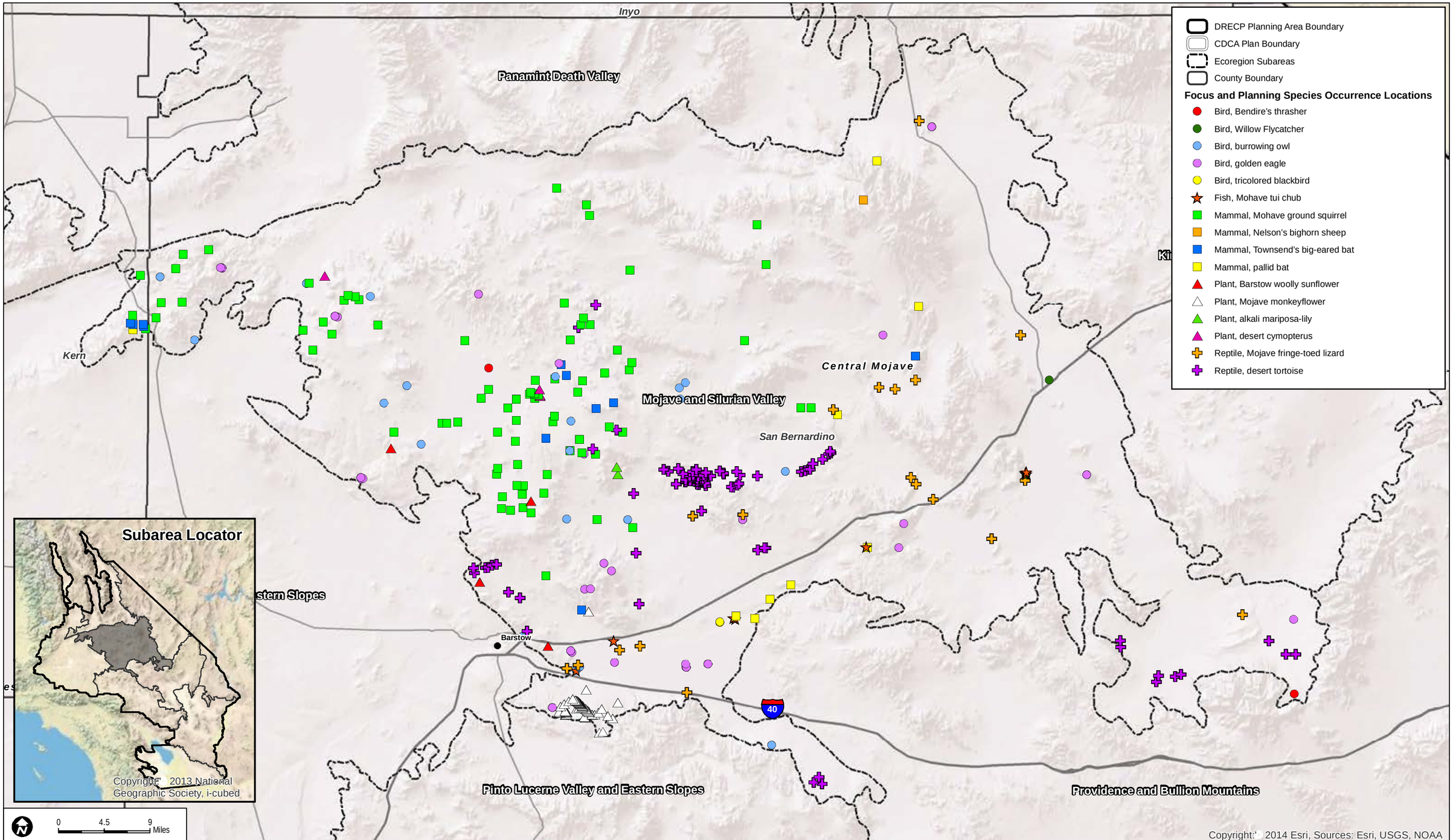


Sources: ESRI (2015); CEC (2013); BLM (2015); CDFW (2013); USFWS (2013); CNDDB (2013)

FIGURE III.7-18

Focus and Planning Species Occurrence Locations - Kingston and Funeral Mountains Ecoregion Subarea

INTENTIONALLY LEFT BLANK

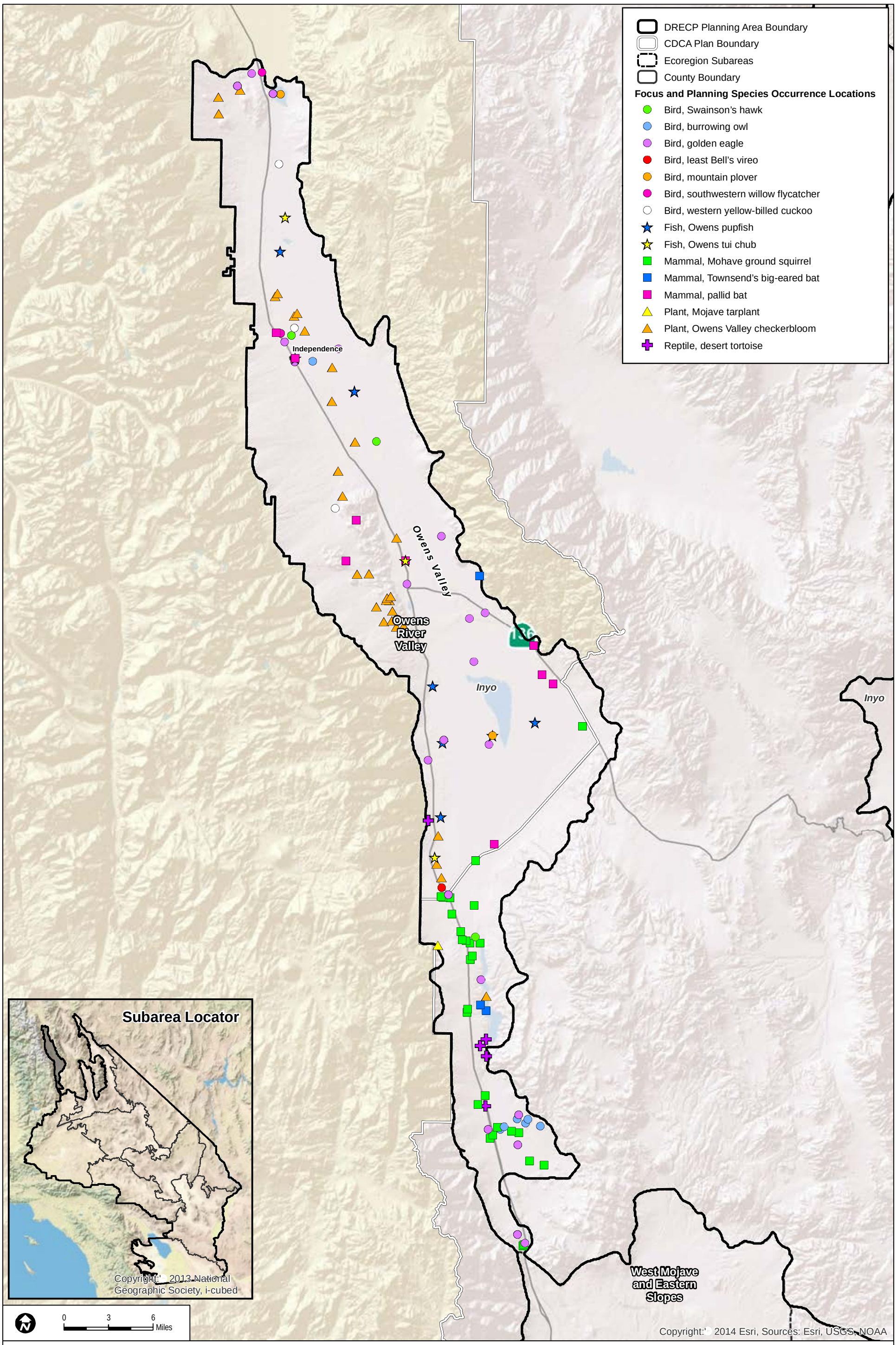


Sources: ESRI (2015); CEC (2013); BLM (2015); CDFW (2013); USFWS (2013); CNDDB (2013)

FIGURE III.7-19

Focus and Planning Species Occurrence Locations - Mojave and Silurian Valley Ecoregion Subarea

INTENTIONALLY LEFT BLANK

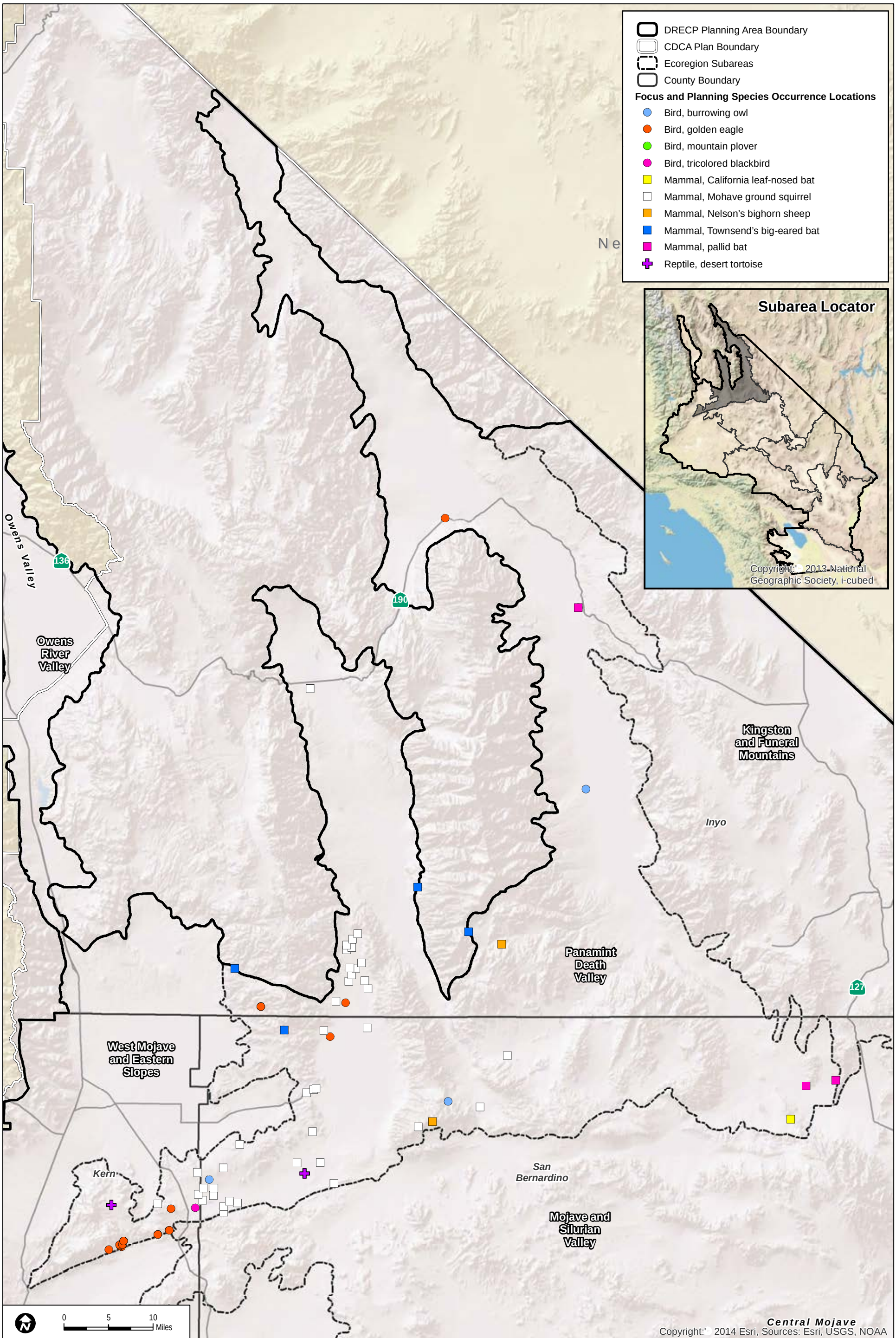


Sources: ESRI (2015); CEC (2013); BLM (2015); CDFW (2013); USFWS (2013); CNDDB (2013)

FIGURE III.7-20

Focus and Planning Species Occurrence Locations - Owens River Valley Ecoregion Subarea

INTENTIONALLY LEFT BLANK

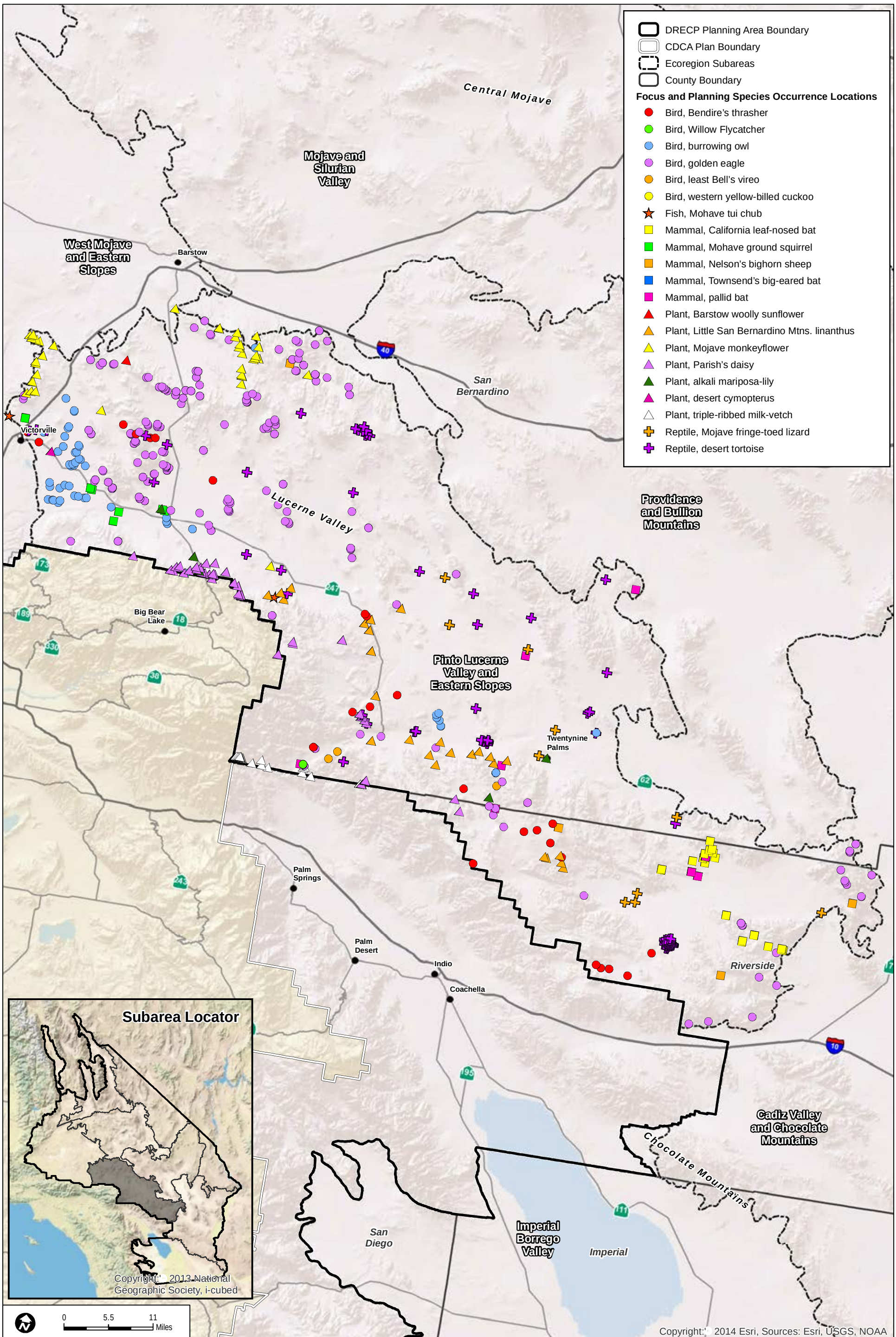


Sources: ESRI (2015); CEC (2013); BLM (2015); CDFW (2013); USFWS (2013); CNDDB (2013)

FIGURE III.7-21

Focus and Planning Species Occurrence Locations - Panamint Death Valley Ecoregion Subarea

INTENTIONALLY LEFT BLANK

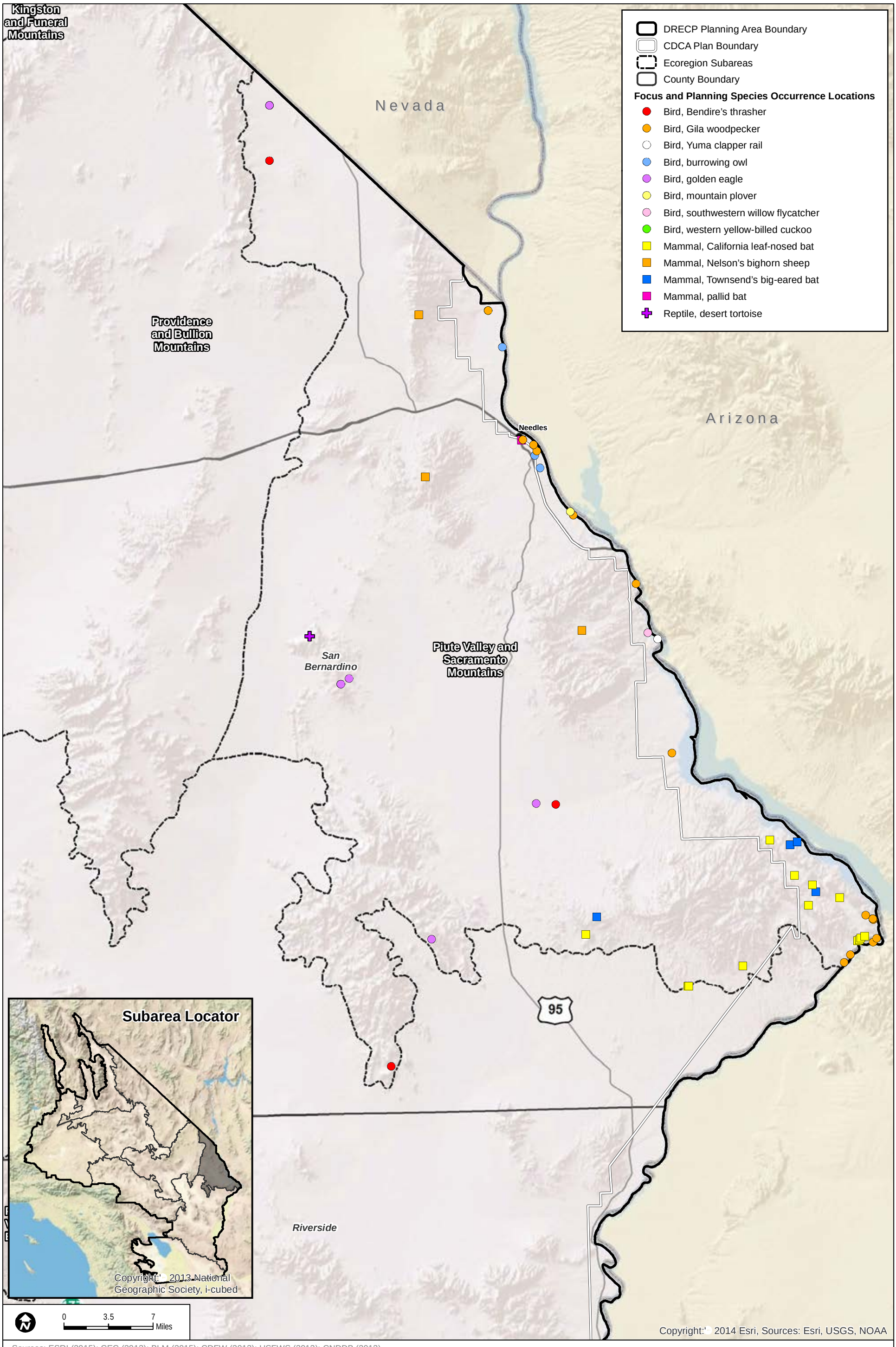


Sources: ESRI (2015); CEC (2013); BLM (2015); CDFW (2013); USFWS (2013); CNDDB (2013)

FIGURE III.7-22

Focus and Planning Species Occurrence Locations - Pinto Lucerne Valley and Eastern Slopes Ecoregion Subarea

INTENTIONALLY LEFT BLANK

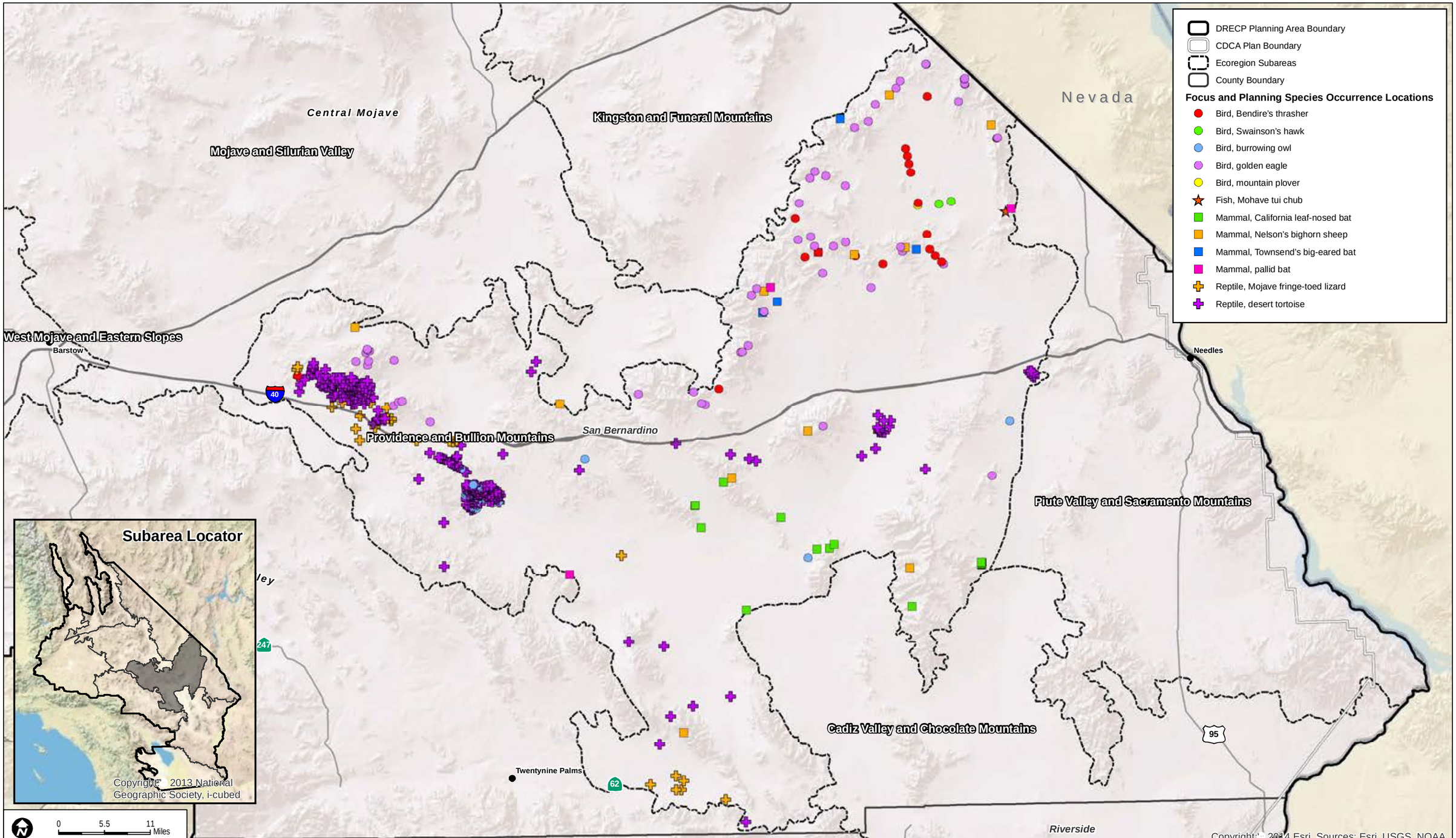


Sources: ESRI (2015); CEC (2013); BLM (2015); CDFW (2013); USFWS (2013); CNDDB (2013)

FIGURE III.7-23

Focus and Planning Species Occurrence Locations - Piute Valley and Sacramento Mountains Ecoregion Subarea

INTENTIONALLY LEFT BLANK

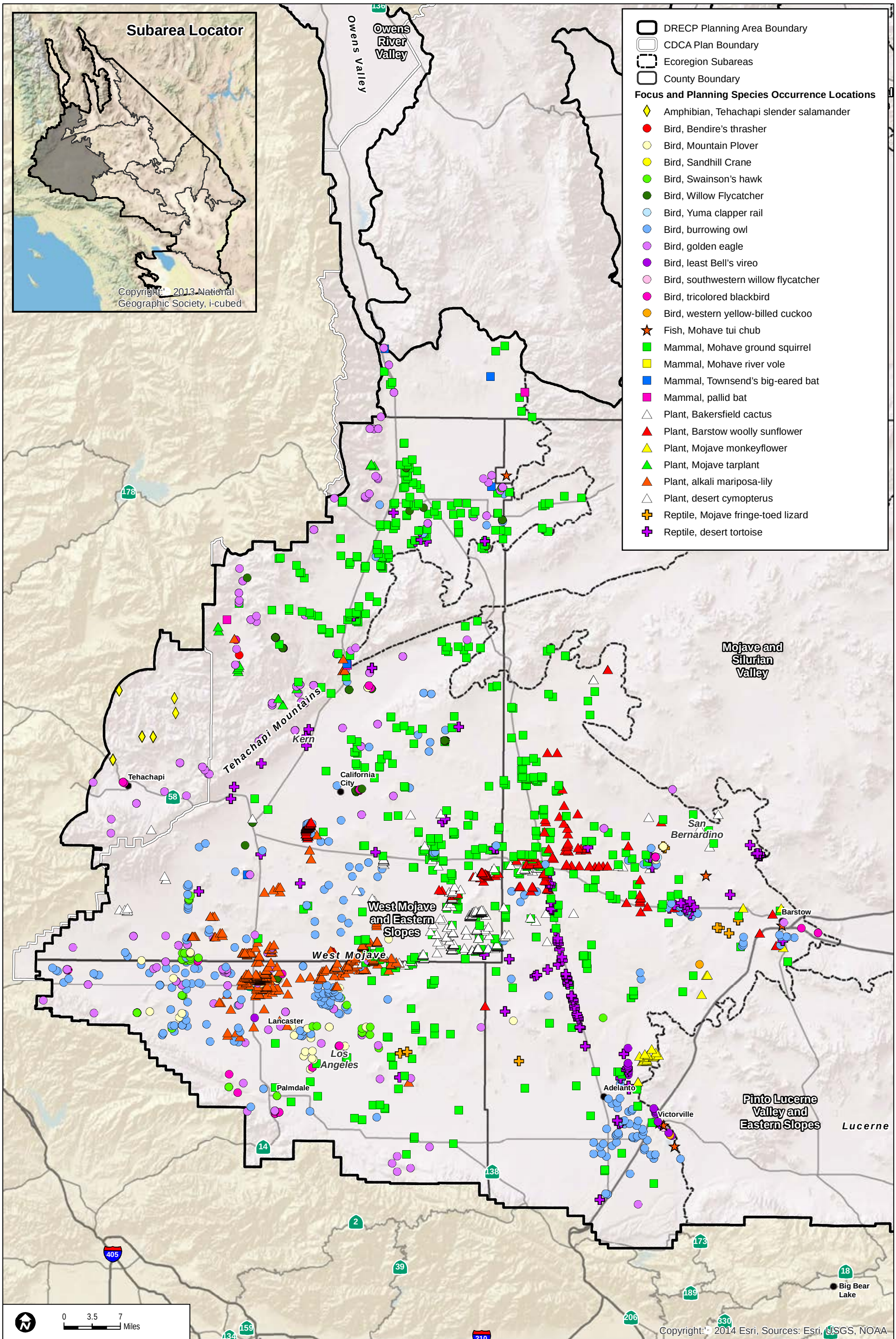


Sources: ESRI (2015); CEC (2013); BLM (2015); CDFW (2013); USFWS (2013); CNDDB (2013)

FIGURE III.7-24

Focus and Planning Species Occurrence Locations - Providence and Bullion Mountains Ecoregion Subarea

INTENTIONALLY LEFT BLANK



Sources: ESRI (2015); CEC (2013); BLM (2015); CDFW (2013); USFWS (2013); CNDDB (2013)

FIGURE III.7-25

Focus and Planning Species Occurrence Locations - West Mojave and Eastern Slopes Ecoregion Subarea

INTENTIONALLY LEFT BLANK

III.7.6.1.1 Amphibians/Reptiles

Agassiz's Desert Tortoise

Agassiz's desert tortoise (*Gopherus agassizii*) is both a federally and state-listed threatened species. Desert tortoises generally occur in alluvial fans, washes, canyons, and saltbush plains, and is associated with creosote bush scrub on alluvial fans and saltbush scrub. The desert tortoise is found throughout the DRECP Plan Area, but is mostly absent from the valley floor of the very hot, dry Coachella Valley, the Imperial County west of the Coachella Canal, and the Transverse Ranges along the periphery of the DRECP Plan Area.

The *Revised Recovery Plan for the Mojave Population of the Desert Tortoise* (USFWS 2011a) identifies six Recovery Units intended to facilitate an ecosystem approach to land management and desert tortoise recovery (USFWS 2011a). Three of the six recovery units are within the DRECP Plan Area (Table III.7-34). Tortoise Conservation Areas (TCAs) include desert tortoise habitat within critical habitat, Desert Wildlife Management Areas, Areas of Critical Environmental Concern, Grand Canyon–Parashant National Monument, Desert National Wildlife Refuge, National Park Service lands, Red Cliffs Desert Reserve, and other conservation areas or easements managed for desert tortoises (USFWS 2011a). Linkage habitat are important areas identified by Recovery Implementation Teams, such as important genetic linkages identified by Hagerty et al. 2010 (cited in USFWS 2011a) that are important to maintaining the species' distribution throughout its range. High priority habitat is high priority for management.

In addition, Averill-Murray et al. (2013) modeled linkages between TCAs using least-cost corridors based on an underlying model of suitable tortoise habitat. According to the models, suitable habitat within linkages connecting the TCAs in the base model totals 17,831 square kilometers (6.56 square miles). Habitat linkages identified with least-cost corridor models include linkages between Ord-Rodman and Joshua Tree National Park, Fremont-Kramer, Superior Cronese, and Mojave National Preserve; between Ivanpah and Superior-Cronese, Chemehuevi, Death Valley National Park (Greenwater Valley), Piute-El Dorado, and Desert Tortoise Conservation Center; between Superior-Cronese and Death Valley National Park (west); between Chemehuevi and Pinto Mountains, Chuckwalla; between Desert Tortoise Conservation Center and Desert National Wildlife Refuge and Piute-El Dorado; between Mormon Mesa and Death Valley National Park (Greenwater Valley) and Lake Mead National Recreation Area; between Lake Mead National Recreation Area and Desert National Wildlife Refuge; and between Beaver Dam Slope and Gold Butte-Pakoon and Upper Virgin River (Averill-Murray et al. 2013).

Table III.7-34
Desert Tortoise Recovery Units in the DRECP Plan Area

Recovery Unit	Reserve	Acreage
Colorado Desert	High Priority Habitat	393,000
	Linkage	469,000
	TCA	3,131,000
	Colorado Desert Total	*3,993,000*
Eastern Mojave	Linkage	784,000
	TCA	2,096,000
	Eastern Mojave Total	*2,880,000*
Western Mojave	Linkage	1,208,000
	TCA	2,326,000
	Western Mojave Total	*3,533,000*
	Grand Total	**10,406,000**

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

The following are salient points relating to this species' population trends and threats.

- Long-term study plots and other studies of the Mojave population of desert tortoise demonstrate "appreciable declines" at the local level in many areas, and that the identified downward trend of the species in the western portion of the range at the time of the federal listing as threatened in 1990 was valid and is ongoing (USFWS 2011a). Results from the USFWS rangewide monitoring show increases in density of adults in the four TCAs in the Northeastern Mojave Recovery Unit, but declines in all but two TCAs in the other four recovery units. In 2004 there were an estimated 126,346 adult tortoises in the 17 TCAs, with an overall loss of 40,660 adult tortoises by 2014 (USFWS 2015).
- Threats and environmental stressors for the desert tortoise include habitat loss, fragmentation, and degradation, collecting, disease or predation, climate change and drought, fire, and recreational and non-recreational land uses (USFWS 2011a).

Flat-Tailed Horned Lizard

The flat-tailed horned lizard (*Phrynosoma mcallii*) is a state candidate for endangered listing and California Species of Special Concern and is both a BLM and USFS special-status species. Flat-tailed horned lizards occupy the hottest and most barren areas of the Colorado/Sonoran Desert and occur on stabilized sand dunes that fall within the

creosote-white bursage series of Sonoran desert scrub. The range for flat-tailed horned lizard begins near the confluence of the San Gorgonio and Whitewater rivers in Riverside County, and extends south and east through the Coachella Valley into the DRECP Plan Area in Imperial County. The following are salient points relating to this species' population trends and threats.

- Within the DRECP Plan Area, flat-tailed horned lizard are found on both sides of the Salton Sea, extending west into Borrego Valley with small extensions into the lower portions of the Coyote Creek Watershed, around Clark Dry Lake, north of the Fish Creek Mountains, and southwest along San Felipe Creek. They are found on the Carrizo Wash east of Bow Willow, and may be found within the Carrizo Badlands. Their range extends east across East Mesa and the Algodones Dunes to Pilot Knob Mesa.
- The major identified threats to this species are habitat fragmentation and population isolation, agricultural development, urbanization, off-highway vehicle (OHV) use, highways, canals, railroads, military activities, utilities, predation, mining and mineral material extraction, geothermal power development, oil and gas development, wind turbines, landfills, exotic plants, fire, pesticide use, land disposal, cattle grazing, and other ground disturbance activities (Flat-tailed Horned Lizard ICC 2003; 76 FR 14223).
- The primary threat to this species is permanent habitat loss through urban and agricultural expansion (Young 2010). The threat of predation by both native and non-native predators is increased within several hundred meters along the edge between native intact habitat and agricultural development.

Mojave Fringe-Toed Lizard

The Mojave fringe-toed lizard (*Uma scoparia*) is a California Species of Special Concern and a BLM Special-Status Species. The Mojave fringe-toed lizard is only found in and immediately around areas of the Mojave Desert that contain deposits of Aeolian (fine windblown) sands, which are typically associated with dunes, washes, hillsides, margins of dry lakes, and sandy hummocks. Within the DRECP Plan Area, Mojave fringe-toed lizards occur in sand dune complexes within the three major river drainages in the DRECP Plan Area: the Amargosa, Mojave, and Colorado. The following are salient points relating to this species' population trends and threats.

- There is limited information on population trends for this species (Hollingsworth and Beaman 2001; Bureau of Land Management 2002), but threats to the species habitat are known. Murphy et al. (2006) documents the extirpation of the species at four sites where they were previously reported (i.e., Harper and El Mirage dry lakes, Piute Butte, and Lovejoy Buttes).

- Direct disturbances to loose windblown sand habitat can include OHV use, the infestation and stabilization of dune sands by invasive exotic species (e.g., Sahara mustard [*Brassica tournefortii*]), solar development, and urban development. Direct disturbances to Mojave fringe-toed lizards include increases in local predators (e.g., common raven).

Tehachapi Slender Salamander

The Tehachapi slender salamander (*Batrachoseps stebbinsi*) is state-listed as threatened in California and is a BLM Special-Status Species. The Tehachapi slender salamander inhabits moist canyons and ravines in oak and mixed woodlands. Within the DRECP Plan Area, the Tehachapi slender salamander occurs only in Kern and possibly Los Angeles counties. Reports are from the Tehachapi Pass area near SR-58, Caliente Creek Road near the mouth of Big Last Chance Canyon, Silver Creek, in and near Indian Creek, and between Tollgate Canyon and Stevenson Creek about 7 miles north–northeast of SR-58. The following are salient points relating to this species' population trends and threats.

- The Tehachapi slender salamander occurs in two main geographically separated distinct population segments (DPSs): (1) in the Caliente Creek drainage in the Paiute Mountains at the junction of the Sierra Nevada and Tehachapi mountains and (2) in the Tehachapi Mountains extending west to Fort Tejon State Park (76 FR 62900–62926).
- Population trends of the Tehachapi slender salamander are unknown. However, all documented occurrences are considered to be extant, although individual populations are small and localized (Hammerson 2009).
- Threats to the species include habitat disturbance caused by development. Species habitat is also potentially threatened by feral pig (*Sus scrofa*) (Hansen and Wake, pers. comm. 2008), road construction, mining, and cattle grazing, as well as flood control projects. Climate change may also impact the species.

III.7.6.1.2 Birds

Least Bell's Vireo

The least Bell's vireo (*Vireo bellii pusillus*) is state-listed as endangered and federally listed as endangered. Least Bell's vireo is listed as a Bird of Conservation Concern by the USFWS within the Mojave Desert Bird Conservation Regions. This species is largely associated with dense, stratified willow riparian woodlands. Recent records of least Bell's vireo in the DRECP Plan Area are from near Lancaster and Palmdale, north of Hesperia, north of Victorville, southwest of Yucca Valley, along Carrizo Creek in Anza-

Borrego Desert State Park, and along the Owens River. The following are salient points relating to this species' population trends and threats.

- The USFWS records show a tenfold increase in the least Bell's vireo population since its listing under the federal ESA in 1986, from 291 to 2,968 known territories, with "tremendous" growth of the vireo populations in specific areas in San Diego and Riverside counties and lower but still significant growth in Orange, Ventura, San Bernardino, and Los Angeles counties (USFWS 2006a). However, there have been significant declines in least Bell's vireo populations in Santa Barbara County since its original listing, while Kern, Monterey, San Benito, and Stanislaus Counties have not supported any sustained populations (USFWS 2006a).
- Historic loss of riparian habitat associated with agricultural practices, urbanization, and exotic plant invasion has contributed to decline of the species (USFWS 2006a). Loss of breeding habitat due to water source alteration (e.g., flood control and channelization), urbanization, and livestock grazing also threatens the species. In addition, nest parasitism by the brown-headed cowbird (*Molothrus ater*) has greatly reduced nest success throughout most of its breeding range and has been suggested as a primary cause for decline throughout California. Other threats to this species' habitat include urban and suburban development on floodplains, the presence of large areas of invasive plants such as tamarisk and giant reed (*Arundo donax*), and OHV activity (Wildlife Action Plan Team 2006).

Bendire's Thrasher

Bendire's thrasher (*Toxostoma bendirei*) is a California Species of Special Concern, a BLM Special-Status Species, and a USFWS Bird of Conservation Concern. Bendire's thrashers typically breed in open grasslands, shrubland, or woodland with scattered trees and shrubs. Within the DRECP Plan Area, individuals occur at the Mojave National Preserve, east of Barstow, in and near Lucerne Valley, within or near Yucca Valley, near the junction of I-8 and SR-177, and near Lake Havasu City (Shuford and Gardali 2008). The following are salient points relating to this species' population trends and threats.

- Population status and trends for Bendire's thrashers are limited. It has been estimated that the population may be fewer than 200 pairs throughout California (Remsen 1978).
- Although more research needs to be conducted, Remsen (1978) suggests the Bendire's thrasher is threatened by habitat destruction/alteration (specifically with the harvesting of Joshua trees and yucca), overgrazing, and OHV use in their breeding habitats. This species may also be threatened by loss of breeding habitat to urban and agricultural development, as well as military operations (Shuford and Gardali 2008). However, without any existing quantitative information regarding

population densities, most of the information on threats comes from anecdotal descriptions of the species (England and Laudenslayer 1989a, 1989b).

Burrowing Owl

The burrowing owl (*Athene cunicularia*) is a California Species of Special Concern and is designated as a BLM Special-Status Species and USFWS Bird of Conservation Concern. Burrowing owls occur in grasslands, deserts, sagebrush scrub, agricultural areas (including pastures and untilled margins of cropland), earthen levees and berms, coastal uplands (especially by over-wintering migrants), and urban vacant lots, as well as the margins of airports, golf courses, residential developments, and roads. Burrowing owls occur across most of the Mojave and Sonoran deserts of Inyo, eastern Kern, northern Los Angeles, San Bernardino, eastern Riverside, eastern San Diego, and Imperial counties, but are less common from Inyo County south through the eastern Mojave Desert. They are particularly common in agricultural areas, where the banks of irrigation ditches and roadsides provide suitable nesting sites and adjacent fields provide abundant invertebrate prey. The following are salient points relating to this species' population trends and threats.

- The overall range of the burrowing owl in California has not drastically changed from that described by Grinnell and Miller (1944), but the species has disappeared or greatly declined as a breeding bird in many areas that were once occupied (DeSante et al. 2007; Gervais et al. 2008; Wilkerson and Siegel 2010). By one recent estimate (Miller 2007), the burrowing owl has functionally disappeared as a breeding species from 22% of its former range and continues to decline in an additional 23% of its range.
- The most immediate threats to the burrowing owl are the conversion of grassland habitat to uses other than livestock grazing and the loss of agricultural hay, grass, and alfalfa lands to development or conversion to unsuitable crops like cotton, vineyards, orchards, corn, and sugarcane (Gervais et al. 2008, Wilkerson and Siegel 2010). Direct causes of mortality in burrowing owls include predation by hawks, owls, badgers, coyotes foxes, domestic dogs and cats, and others (Poulin et al. 2011); vehicular collisions; wind turbines; barbed wire fences; shooting; road maintenance; tilling, pesticide application and other agricultural practices; and disease and parasites (Gervais et al. 2008; Poulin et al. 2011). Eradication programs that have decimated rodent populations have, in turn, decreased the abundance of key prey available for burrowing owls.

California Black Rail

The California black rail (*Laterallus jamaicensis coturniculus*) is state-listed as threatened and fully protected, a USFWS Bird of Conservation Concern, and a BLM Special-Status

Species. Suitable habitat includes salt marshes, freshwater marshes, and wet meadows. Within the DRECP Plan Area, the California black rail occurs primarily along the Lower Colorado River from the Laguna Diversion Dam to about the head of Ferguson Lake, although there are occurrences near Parker, at the Dos Palmas Preserve Area of Critical Environmental Concern; on the New River near Seeley and at the Salton Sea; and near the All-American Canal southeast of El Centro. The following are salient points relating to this species' population trends and threats.

- Evens et al. (1991) reported from their surveys of the Lower Colorado River/Salton Trough region that "subpopulations were small and isolated" and that "[t]he causes of this downward trend—all related to habitat loss or degradation—are pervasive and ongoing." Conway and Sulzman (2007, p. 996) delivered a similar conclusion: "Our data suggest that degradation and elimination of suitable emergent marshes over the past 25 to 30 years has caused significant reduction in black rail distribution in Southern California and Arizona."
- Human impacts on black rails include shooting and trapping, contaminants, collisions, effects of research, and habitat impairment. Specifically addressing the Lower Colorado River/Salton Trough populations, Conway and Sulzman (2007) identify degradation and loss of suitable emergent marsh habitat as the principal threat to the species. They also note declines in habitat suitability due to the spread of tamarisk.

California Condor

The California condor (*Gymnogyps californianus*) is federally and state-listed as endangered and is also a California fully protected species. California condors are primarily a cavity nesting species and typically nest in cavities located on steep rock formations or in the burned out hollows of old-growth conifers (e.g., coast redwood [*Sequoia sempervirens*] and giant sequoia trees [*Sequoiadendron giganteum*]) (Koford 1953; Snyder et al. 1986). Less typical nest sites include cliff ledges, cupped broken tops of old-growth conifers, and in several instances, nests of other species (Snyder et al. 1986; USFWS 1996). The California condor occurs principally along the western edges of the DRECP Plan Area, specifically within the Tehachapi Mountains east of I-5, and portions of the Los Padres National Forest west of I-5. At this time, nesting has not been documented in the DRECP Plan Area; condor use of the DRECP Plan Area is currently limited to foraging and roosting. The following are salient points relating to this species' population trends and threats.

- Comprehensive counts of the species that began in 1982 confirmed that the wild population declined from an estimate of 21 individuals in 1982, to 19 individuals in 1983, 15 individuals in 1984, and 9 individuals in 1985. On April 19, 1987, the last wild California condor was captured and taken to the San Diego Wild Animal Park.

Beginning in 1992, captive condors began to be released back into the wild, with increasing numbers being released in succeeding years. As of July 31, 2013, there were 424 California condors in the world population, including 201 in captivity and 223 in the wild (USFWS 2013a). The wild population includes 123 in central and Southern California, of which approximately 56 (not including 6 young still in the nest) currently inhabit Southern California and have the potential to visit portions of the DRECP Plan Area. The remaining wild population includes 30 birds in Baja California and 70 in Arizona. Due to a combination of captive breeding and release, and wild nest reproduction, this population is steadily increasing and is expected to continue to increase, barring stochastic catastrophes.

- The decline of the condor population during the early 1900s has not been definitively linked to any particular cause, however, it was likely the result of high mortality rates due to direct persecution, collection of specimens, and secondary poisoning from varmint control efforts and 1,1,1-trichloro-2,2-bis(pchloro-phenylethane (DDT) (Snyder and Snyder 2005; D'Elia and Haig 2013). Lead poisoning may have been a contributing factor, but was not recognized as such until after 1980, at which time it became identified as a major cause of mortality that resulted in the recent decline (Janssen et al. 1986; Bloom et al. 1989; Pattee et al. 1990; Cade 2007; Grantham 2007; Hall et al. 2007). Other recent documented sources of mortality include predation, powerline collision, micro-trash, fire, and shooting (USFWS 2013b).

Gila Woodpecker

The Gila woodpecker (*Melanerpes uropygialis*) is state-listed as endangered in California. This species is also designated as a BLM Special-Status Species and a USFWS Bird of Conservation Concern. Gila woodpeckers breed in cacti or trees with large trunks. Suitable habitats include riparian woodlands, uplands with concentrations of large columnar cacti, old-growth xeric-riparian wash woodlands, urban or suburban areas, and agricultural areas. Within the DRECP Plan Area, Gila woodpeckers have been recorded along or in close proximity to the Colorado River and within the Imperial Valley, particularly south of the Salton Sea, and in desert washes with microphyll woodlands as far west as Joshua Tree National Park and Desert Center. The following are salient points relating to this species' population trends and threats.

- Gila woodpecker populations have declined significantly in southeast California (Rosenberg et al. 1991; Kaufman 1996), possibly due to the clearing of woodlands in the Colorado River Valley and Imperial Valley and nest-site competition with European starlings (Garrett and Dunn 1981). Rosenberg et al. (1991) indicated that although the species was formerly more common and widespread in Lower

Colorado River Valley, it had become restricted to relatively few areas where some tall trees were retained in native habitats.

- Threats and environmental stressors to Gila woodpeckers in the DRECP Plan Area include habitat loss and potential nest site competition with European starlings. In the southwestern United States, human development and the spread of invasive species have fragmented and degraded riparian woodland and desert habitat, adversely affecting Gila woodpecker populations.

Golden Eagle

The golden eagle (*Aquila chrysaetos)* is federally protected under the Bald and Golden Eagle Protection Act and MBTA. It is also a USFWS Bird of Conservation Concern and BLM Special-Status Species. The golden eagle is also fully protected in California and is considered a CDFW Watch List species. Golden eagles use nearly all terrestrial habitats of the western states, occurring primarily in mountainous canyon land, rimrock terrain of open desert, and grassland areas. The golden eagle is an uncommon permanent resident and migrant throughout the DRECP Plan Area, and may occupy nearly every mountain range in the DRECP Plan Area; BLM-identified "Key Raptor Areas" include the Granite, El Paso, and Newberry mountains, and Red Mountain, Stoddard Ridge, and Daggett Ridge (Raptor Research Foundation 1989). Other important occupied habitat is found in the Clark Mountain Range, Tehachapi Mountains, southern Sierra Nevada Mountains, and Calico Mountains.

The following are salient points relating to this species' population trends and threats.

- This species was once a common resident throughout the open areas of California but numbers are now reduced near human population centers (Kochert et al. 2002). Golden eagle territory occupancy is variable from year to year, productivity is generally low, and most territories contain several alternate nests (La Pré pers. comm. 2011).
- Golden eagle declines are attributed primarily to habitat degradation and human-induced disturbances and mortality (Kochert et al. 2002). Additional threats include secondary poisoning, poaching, electrocution from distribution and utility lines, wire strikes, wind turbine strikes, and lead poisoning (Remsen 1978; Thelander 1974).

Greater Sandhill Crane

The greater sandhill crane (*Grus canadensis tabida*) is state-listed as threatened and a fully protected species in California. It is also a BLM Special-Status Species. Greater sandhill cranes are found primarily in open freshwater wetlands, including shallow marshes and wet meadows, but may use agricultural fields as well. They nest in moist areas at the margins of extensive wet meadows and marshes. Sandhill cranes are winter visitors to the

DRECP Plan Area, overwintering mainly in the Lower Colorado River Valley (LCRV), in the Imperial Valley, and at the southern end of the Salton Sea. The following are salient points relating to this species' population trends and threats.

- The LCRV population is currently the least numerous of the migratory crane populations (Kruse et al. 2011). Aerial surveys of the LCRV populations suggest that the overall numbers are increasing at a rate of about 3% per year, from an estimated 1,900 in 1998 to 2,415 counted in 2011 (Kruse et al. 2011). The portion of the DRECP Plan Area total numbers overwintering at the Sonny Bono Salton Sea National Wildlife Refuge increased in parallel with the overall increase.
- The most significant current threat to the greater sandhill crane subspecies appears to be habitat loss and degradation, especially on the wintering grounds in California and Florida, the nesting areas in the Midwest, and migration stopovers, especially the Platte River (Meine and Archibald 1996).

Mountain Plover

Mountain plover (*Charadrius montanus*) is a California Species of Special Concern, a USFWS Bird of Conservation Concern, and a BLM Special-Status Species. This species occupies open, flat lands or sparsely vegetated areas, including xeric shrublands, short-grass prairie, and barren agricultural fields at high elevations. Within the DRECP Plan Area, mountain plover occurs south of or along the eastern edge of the Salton Sea, near Palmdale, west of Lancaster, and in the Harper Lake area. The following are salient points relating to this species' population trends and threats.

- In California, the wintering range for mountain plover includes low elevation interior valleys and plains. In the Imperial Valley, where there is the largest known concentration of wintering plovers, preferred foraging habitats include harvested alfalfa and Bermuda grass fields that have been grazed by domestic sheep and Bermuda grass fields, wheat, and other grass fields that have been burned post-harvest (Knopf and Wunder 2006; Molina 2011, 2012).
- Although wintering mountain plover populations in California appear to have experienced a significant decline over previous decades, more recent wintering numbers, from 2000 onward, have not shown a similar trend.
- Mountain plovers are threatened by loss and degradation of breeding and wintering habitat, predation, severe weather conditions during nesting and fledging, and direct persecution by humans (McGaugh 2006).

Swainson's Hawk

Swainson's hawk (*Buteo swainsoni*) is state-listed as threatened in California and is a USFWS Bird of Conservation Concern. Swainson's hawks occur primarily in grassland, but they are also found in sparse shrubland, open woodlands, and grain and hay croplands. They generally nest in isolated trees, narrow bands of vegetation, or along riparian corridors in grassland, shrubland, and agricultural landscapes. Breeding populations inside the DRECP Plan Area have been reported in the Antelope Valley, Owens River Valley, and at the Mojave National Preserve. Other occurrences are in the western Mojave region along the base of the San Gabriel and Tehachapi mountain ranges, as well as scattered occurrences in the Fremont Valley, the Ridgecrest/China Lake Naval Air Weapons Station, and near Haiwee Reservoir. The following are salient points relating to this species' population trends and threats.

- Most breeding pairs within the DRECP area are located in the western Mojave along the base of the San Gabriel and Tehachapi Mountains and in the Antelope Valley.
- In the DRECP Plan Area, in addition to alfalfa fields in the Antelope Valley, Swainson's hawks may also forage in native and non-native grasslands, Joshua tree woodlands, and other desert scrub habitats that support a suitable prey base.
- Main threats to Swainson's hawk in California include riparian habitat loss and agricultural and urban development in the Central Valley, urbanization in the coastal valleys and plains, and a contracting range of Joshua trees and riparian habitats in the Mojave Desert; and chronic and acute pesticide poisoning.

Tricolored Blackbird

The tricolored blackbird (*Agelaius tricolor*) is a federal candidate for listing and is state-listed as endangered. This species is also a BLM Special-Status Species and a USFWS Bird of Conservation Concern. Tricolored blackbirds breed in freshwater wetlands dominated by cattails or bulrushes, and nest in willows, thistles, or nettles (*Urtica* spp.). They forage in rice fields, lightly grazed pasture, dairies, or alfalfa fields. Tricolored blackbirds breed in lowland areas in the western and central portions of the DRECP Plan Area, in eastern Kern County from Ridgecrest along the base of the Tehachapi Mountains to Antelope Valley, around Palmdale and Lancaster in northeast Los Angeles County. One of the major colonies in that area, Piute Ponds at EAFB) is now unoccupied (National Audubon Society 2013). A colony in Leona Valley 10 miles west of Palmdale remained occupied in 2012 (Meese, pers. comm. 2014). The following are salient points relating to this species' population trends and threats.

- Local, regional, and statewide tricolored blackbird populations experienced major declines between 1994 and 2013. Results of the Audubon California 2011 statewide

survey (Kyle and Kelsey 2011) show a dramatic drop in the species population numbers throughout the state: in all, slightly fewer than 260,000 birds were observed compared to 395,000 in the 2008 survey, a 33% decrease in the population.

- The greatest threats to this species are the loss and degradation of habitat as a result of human activities (Beedy and Hamilton 1999). One of the main causes for population decline has been the near elimination of native cattail wetland complexes throughout central California by agricultural expansion and conversion of wetlands (Kyle and Kelsey 2011). Other threats to the species include predation of fledglings and adults by black-crowned night herons (*Nycticorax nycticorax*) and ravens (Hamilton 2004), and the application of herbicides and pesticides. Loss of nesting habitat in the western Mojave Desert occurred as alfalfa farming became economically infeasible. Irrigation water that had flowed off alfalfa fields in northeastern Los Angeles County and eastern Kern County had supplied marshes where tricolored blackbirds once nested (e.g., Koehn Lake).

Western Yellow-Billed Cuckoo

The western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) is federally listed as threatened and state-listed as endangered in California. Western yellow-billed cuckoo is also a USFWS Bird of Conservation Concern and is a BLM Special-Status Species. It is currently proposed for federal listing as a threatened species under the ESA (78 FR 61622–61666). Breeding habitat primarily consists of large contiguous areas of riparian habitat, particularly cottonwood, mesquite, and willow riparian woodlands containing dense thickets near slow-moving water sources. Within the DRECP Plan Area, the western yellow-billed cuckoo occurs principally along the Colorado River, Alabama Hills near Lone Pine, the Laguna Dam area of the Colorado River north of the Cibola National Wildlife Refuge, the Imperial National Wildlife Refuge area, and the Palo Verde Ecological Reserve in Riverside County. Within the DRECP area there are other two sites considered potentially suitable for restoration/creation for yellow-billed cuckoo nesting habitat: along Hogback Creek in the Alabama Hills (Los Angeles Department of Water and Power 2009) and the Amargosa River (BLM 2006), both in Inyo County. The following are salient points relating to this species' population trends and threats.

- The western yellow-billed cuckoo suffered substantial range reductions in the twentieth century due to loss of riparian habitat (Laymon and Halterman 1987). Within the DRECP Plan Area, the majority of California Natural Diversity Database (CNDDB) records are from the Colorado River (CDFW 2013a). Once considered abundant throughout the lower Colorado River, the species' numbers dramatically declined during surveys in the 1970s and 1980s.

- The western yellow-billed cuckoo is sensitive to habitat fragmentation and degradation of riparian woodlands due to agricultural and residential development (Hughes 1999). Groundwater pumping and the replacement of native riparian habitats by invasive non-native plants, especially tamarisk, have substantially reduced the area and quality of available breeding habitats for yellow-billed cuckoo (75 FR 69222–69294). Additional threats include pesticides and climate change.
- The requirement of large habitats of 50- to 100-acre contiguous multi-stored riparian forest for suitable nesting habitat (Laymon and Halterman 1985; Laymon et al. 1997) may require considerable investment to enhance habitat adequately for a breeding population.

Willow Flycatcher (Including Southwestern)

The willow flycatcher (*Empidonax traillii*) is state-listed as endangered and the southwestern willow flycatcher subspecies (*E. t. extimus*) is federally listed as endangered. In California, nesting southwestern willow flycatchers are restricted to riparian habitats occurring along streams or in montane meadows, generally in habitats with a dense mid-story and understory and often a dense canopy. Willow flycatchers, including the southwestern willow flycatcher subspecies, also use riparian habitats as stopover habitat during migration, as well as non-riparian habitats, including shrublands, grasslands, and agriculture. Within the DRECP Plan Area, breeding southwestern willow flycatchers have been found at five general locations: Owens River Valley, Mojave River, San Felipe Creek (a tributary of the Salton Sea), the Lower Colorado River between Hoover and Parker, and the Lower Colorado River between Parker and the U.S.–Mexico border. Willow flycatchers, not identified to subspecies, have been reported in several regions of the DRECP Plan Area, including Amargosa Canyon, Ridgecrest and the China Lake Naval Air Weapons Station, the Fremont Valley in the western Mojave Desert, the southern Sierra Foothills west of Red Rock Canyon State Park, the cities of Mojave and California City, Galileo Park north of 20 Mule Team Parkway, the southwestern portion of EAFB, the western portion of Mojave National Preserve, the Kingston Range, the Morongo Valley, Lake Tamarisk Golf Course in the Chuckwalla Valley, and north of Niland east of the Salton Sea. The following are salient points relating to this species' population trends and threats.

- Within the DRECP Plan Area, significant declines have occurred along the Lower Colorado River, and occupied sites have declined in the Mojave River (Durst et al. 2008).
- The primary threat to the southwestern willow flycatcher is loss, modification, and fragmentation of suitable riparian habitat (Sogge et al. 2010). The specific primary causes for loss and modification of riparian habitats have been dams and reservoirs, water diversion and groundwater pumping, channelization, flood control, agriculture, recreation, and urbanization (Sogge et al. 2010).

- An important factor in population decline is thought to be brown-headed cowbirds which parasitize southwestern willow flycatcher nests and make nests more vulnerable to further predation (Stumpf et al. 2012).

Yuma Ridgway's Rail

The Yuma Ridgway's rail (*Rallus obsoletus yumanensis*) is a state-listed threatened and a fully protected species in California, and is a federally listed endangered species. The Yuma Ridgway's rail breeds in freshwater marshes, especially in areas with cattails and bulrush. It prefers areas with tall (greater than 6 feet) emergent vegetation and shallow (less than 12 inches) open water. Yuma Ridgway's rail disperse through wide areas of the southwest, with most dispersing clapper rails assumed to be subadults evicted from natal territories (Zembal et al. 1985), unpaired males seeking lower-density populations to establish territories, or adult rails displaced from established territories (Smith 1975; Bennett and Ohmart 1978). Colonization events and dispersal records have been documented in isolated patches of suitable habitat across southern Nevada, central and eastern Arizona, and the Mojave-Sonoran deserts in California. Within the DRECP Plan Area, the Yuma Ridgway's rail occurs along the Lower Colorado River from Lake Havasu to near Yuma, Arizona, and in the Imperial Valley at the Salton Sea and along the All-American Canal, the New River, and the Holtville main drain. The following are salient points relating to this species' population trends and threats:

- The Yuma Ridgway's rail in the United States has shown recent range extensions northward from the Colorado River Delta and the southern end of the Colorado River into Lake Mead and the Virgin River, indicating that the species is reproducing enough to support such expansion (USFWS 2006b, 2010).
- Habitat destruction and modification is the primary threat to the Yuma Ridgway's rail (USFWS 2010a). Environmental contaminants may also pose threats to the species. Two Yuma Ridgway's rails have been found dead at solar project sites in the last year and half.
- Since 2006, a consistent survey protocol began to be used throughout the United States. The rail population has fluctuated with a high of 822 in 2007 and a low of 431 in 2013 with a declining trend since 2009 (671 in 2009, 570 in 2010, 565 in 2011, 435 in 2012, and 431 in 2013).

III.7.6.1.3 Fish

Desert Pupfish

The desert pupfish (*Cyprinodon macularius*) is both state-listed and federally listed as endangered. Found in shallow water of desert springs, small streams, and marshes, this

species tolerates high salinities, high water temperatures, and low dissolved-oxygen concentrations. Pupfish prefer clear water, with rooted or unattached aquatic plants, restricted surface flow, or sand–silt substrates. Within the DRECP Plan Area, the desert pupfish occurs in San Felipe Creek/San Sebastian Marsh, Salt Creek (within the Dos Palmas Conservation Area of the Coachella Valley Multiple Species Habitat Conservation Plan), Salton Sea, irrigation drains of the Salton Sea, and a wash near Hot Mineral Spa. The following are salient points relating to this species' population trends and threats.

- The desert pupfish populations in Salt Creek and San Felipe Creek are stable to increasing (Keeney 2010a, cited in USFWS 2010b). In addition, there are a number of refuge or captive populations of desert pupfish in California at a variety of sites (USFWS 2010b).
- Threats to the species include loss and degradation of suitable habitat through groundwater pumping or water diversion; contamination from agricultural return flows, as well as other contaminants; and physical changes to water properties involving suitable water quality; the effect of disease, competition, or predation; inadequate regulatory mechanisms; and endocrine disruptors.

Mohave Tui Chub

The Mohave tui chub (*Siphateles [Gila] bicolor mohavensis*) is state- and federally listed as endangered and is a fully protected species in California. This species is associated with deep pools and sloughs. It generally requires a minimum water depth of 4 feet with some freshwater flow, and aquatic plants to provide foraging habitat and a substrate for egg attachment. Within the DRECP Plan Area, the Mohave tui chub occurs at Soda Springs and Morning Star Mine at Mojave National Preserve, Lark Seep at China Lake Naval Weapons Station, Camp Cady Wildlife Area, and the Lewis Center in Apple Valley.

The following are salient points relating to this species' population trends and threats.

- Mohave tui chub is only present at five locations, and remains extirpated from its historic habitat in the Mojave River. The 2009 USFWS 5-year Review for the species concluded that the species still meets the definition of endangered (USFWS 2009a).
- The two main threats to Mohave tui chub are the present threatened destruction, modification, or curtailment of its habitat or range; and other natural or man-made factors affecting its continued existence (hybridization, introduction of non-native or transplanted species, predation, or competition) (Williams et al. 1989, cited in USFWS 2009a).

Owens Pupfish

The Owens pupfish (*Cyprinodon radiosus*) is state- and federally listed as endangered and a fully protected species in California. Owens pupfish occurs in shallow water habitats in the

Owens Valley, where it prefers warm, clear, shallow water free of non-native fishes and areas of soft substrate for spawning. Within the DRECP Plan Area, Owens pupfish occurs only at Well 368 west of the Owens River. The following are salient points relating to this species' population trends and threats.

- Only four populations of Owens pupfish exist and all existing populations of the species are small, ranging from 100 to 10,000 individuals. Owens pupfish still faces a high degree of threat, but it also has a high recovery potential (USFWS 2009b).
- Threats to the species include loss of habitat resulting from cattail (*Typha* spp.) encroachment, and non-native predators including largemouth bass, smallmouth bass, brown trout, bluegill, mosquitofish (*Gambusia affinis*), crayfish (*Pastifasticus leniusculus*), and bullfrogs (*Rana catesbeiana*). Additionally, the Owens pupfish is highly vulnerable to extinction from stochastic (random) demographic, genetic, and catastrophic environmental events because the existing populations are small and isolated.

Owens Tui Chub

The Owens tui chub (*Siphateles bicolor snyderi*) is state- and federally listed as endangered and a fully protected species in California. The Owens tui chub occurs in low-velocity waters with well-developed beds of aquatic plants, rocks, and undercut banks with gravel bottoms. The Owens tui chub is limited to six isolated sites in the Owens Basin: Hot Creek Headwaters (AB Spring and CD Spring), Little Hot Creek Pond, Upper Owens Gorge, Mule Spring, and White Mountain Research Station (operated by the University of California). The DRECP Plan Area only includes the former Cabin Bar Ranch population, which was extirpated in 2003 (USFWS 2009c). The Mule Spring population (see Figure SP-F04 in Appendix B of Appendix Q to this document) is outside of the DRECP Plan Area boundary; no populations currently exist in the DRECP Plan Area. USFWS (1998) has proposed two conservation areas within the DRECP Plan Area: Black Rock and Southern Owens Dry Lake (the Cabin Bar Ranch population was found on the southwest shore of Owens Dry Lake). The following are salient points relating to this species' population trends and threats.

- Since its listing in 1985, three new populations of Owens tui chub have been established, bringing the current number to six. Four of these populations are in small, man-made or man-altered waters, and one is outside the historical range of the species at an artificial lake (Sotcher Lake). USFWS (2009c) indicates that the taxon is a subspecies that faces a high degree of threat and has a high potential for recovery.
- The major threat to the species is introgression (i.e., hybridization) with Lahontan tui chub (*Siphateles bicolor obesus*) (Chen et al. 2007), which has resulted in extirpation throughout most of its range (USFWS 2009c). Additional threats include extensive

habitat destruction and modification; an increase in emergent vegetation because it may provide cover for non-native predators of Owens tui chub, such as bullfrogs and crayfish; disease; predation by introduced non-native fish; and the inadequacy of existing regulatory mechanisms. Additionally, the Owens tui chub is highly vulnerable to extinction from stochastic (random) demographic, genetic, and catastrophic environmental events because the existing populations are small and isolated.

III.7.6.1.4 Mammals

Desert Bighorn Sheep

Desert bighorn sheep (*Ovis canadensis nelsoni*) is state-listed as fully protected under California Fish and Game Code Section 4700 and a BLM Special-Status Species. Bighorn sheep prefer visually open, steep, and rocky mountainous terrain. They occur in alpine dwarf-shrub, low sage, sagebrush, bitterbrush, pinyon–juniper, palm oasis, desert riparian, desert succulent shrub, desert scrub, subalpine conifer, perennial grassland, montane chaparral, and montane riparian habitats. Within the DRECP Plan Area, bighorn sheep range from the Last Chance Range near the northeastern portion of the DRECP Plan Area south to the Chocolate Mountains in the southeastern portion of the DRECP Plan Area. The following are salient points relating to this species' population trends and threats.

- Due to the nature of the habitats in which desert bighorn sheep live, their populations are relatively small in general. This makes them quite vulnerable to local extirpation and to the loss of genetic diversity through generic drift if isolated. Broad estimates of desert bighorn sheep population size indicate an increasing or at least stable population; local populations have shown more variability, with some local population declines (CDFG 2010).
- Desert bighorn sheep are threatened by loss and fragmentation of important habitats (e.g., lambing and feeding areas, escape terrain, water, travel, and dispersal routes), disease (potentially from livestock), predation, drought, potential resource competition, and negative interactions with humans (Wehausen 2006).

Burro Deer (Planning Species)

The burro deer (*Odocoileus hemionus eremicus*) is the desert dwelling subspecies of the widespread mule deer (*Odocoileus hemionus*) with no federal or state special status. The burro deer is a large ungulate that shifts seasonally between desert riparian washes and more open, mountainous terrain. Within the DRECP Plan Area, burro deer have been recorded along or near the Colorado River, including near Blythe and in the Palo Verde area. It also occurs in the Smoketree Valley area near Clemens Well in the valley between the

Orocopia and Chocolate mountains. The following are salient points relating to this species' population trends and threats.

- Burro deer are predominately associated with major river corridors and dry desert washes leading down to the Colorado River and other major rivers. In the hottest months deer are found close to permanent water and forage sources such as the Colorado River. However, with the onset of the summer monsoons in early August and September, burro deer may disperse to the desert mountains (Celentano and Garcia 1984).
- Burro deer are distributed in two primary herd areas north and south of I-10. These herds are vulnerable to fragmentation if key habitat linkages along this highway are not maintained, especially the linkages between the Mule and McCoy mountain ranges, and between the Chuckawalla and Palen ranges.
- Threats to Burro deer include loss and degradation of summer riparian habitat along the Colorado River associated with the activities of an increasing human population. Activities include increasing development, agriculture, recreational development, and flood control measures. Additional threats include poaching, road kill, drowning in canals, and competition from non-native grazing animals such as feral ass.

California Leaf-Nosed Bat

The California leaf-nosed bat (*Macrotus californicus*) is a California Species of Special Concern and a BLM Special-Status Species. The California leaf-nosed bat is primarily a cave and mine dwelling species, but has also been found in open bridge structures with cave-like chambers at either end. Roosts must maintain temperate microclimates year-round. California leaf-nosed bats forage in riparian and desert washes, and tinajas (water-carved natural rock pools). This species is generally concentrated in southern portions of the DRECP Plan Area, including Joshua Tree National Park; along the Lower Colorado River between Lake Havasu City and Yuma, Arizona; west of Blythe, California; and in the Cargo Muchacho Mountains northwest of Yuma, the Chocolate Mountains east of the Salton Sea, and the Clipper Mountains. The following are salient points relating to this species' population trends and threats.

- With possibly one exception, all California leaf-nosed bat roosts are now located in the desert. More recent censuses using standardized methods have revealed stable colony sizes for California leaf-nosed bats in the largest colonies.
- The two main threats to this species likely are disturbances of roost sites due to human entrance, abandoned mine closures (i.e., bat access eliminated), and renewed mining in historic districts (Brown 2005; Zeiner et al. 1990); and loss and degradation of desert riparian habitats (Brown 2005).

Desert Kit Fox (Planning Species)

The desert kit fox subspecies (*Vulpes macrotis arsipus*) is not listed as threatened or endangered and does not have special state or federal status. In the DRECP Plan Area, desert kit fox primarily occurs in open desert scrub habitats on gentle slopes. Creosote bush scrub is the most common habitat association for desert kit fox in California. Particularly dense populations are known to occur in sandy substrates, due to high prey populations and soils suitable for burrowing. The desert kit fox's range historically included the entire DRECP Plan Area. Although there is a general lack of recent distribution information for this subspecies, the desert kit fox's current distribution is considered to include the entire DRECP Plan Area. The following are salient points relating to this species' population trends and threats.

- Meany et al. (2006) state that kit fox populations "plummeted" in the last half of the 19th and early 20th century due to predator and rodent controls. They report that the kit fox population in Colorado may be close to extirpation, populations in Oregon and Idaho are extremely low, and populations in the Great Basin Desert in Nevada and Utah may be in decline. The only states Meaney et al. (2006) indicate may still have stable populations are Arizona, New Mexico, and Texas.
- Threats to desert kit fox include habitat degradation, loss, and fragmentation from development; roads; recreational activities including OHVs; rodenticide poisoning; noise associated with military activities; and grazing. The expansion and increased abundance of coyotes, which is the main predator of kit foxes, is also a threat (Meaney et al. 2006). A potentially devastating current threat to desert kit fox is canine distemper (Clifford et al. 2013).

Mohave Ground Squirrel

The Mohave ground squirrel (*Xerospermophilus mohavensis*) is state-listed as threatened in California. The Mohave ground squirrel occurs in a variety of desert shrubland habitats, and is most often found in Mojave creosote bush scrub, desert saltbush scrub, Mojave mixed steppe, desert sink scrub, desert greasewood scrub, shadscale scrub, and Joshua tree woodland. Within the DRECP Plan Area, the published Mohave ground squirrel range extends from Inyo County east of Owens Lake in the north to a few miles east of Rabbit Springs in Lucerne Valley in the south, and from the Granite Mountains in Fort Irwin in the east to the cities of Mojave, Lancaster, and Palmdale in the west (Leitner 2008).

Important areas for the conservation of the Mohave ground squirrel were established to inform planning efforts for conservation of this species' habitat for the DRECP. The original data included only a limited number of population centers and linkages described by Phil Leitner, PhD, of California State University, Stanislaus, in 2008. The data were revised in

2012 and 2013 based on input from Leitner and other Mohave Ground Squirrel experts. The habitats were defined using field observations, historical and current species occurrence records, habitat suitability, including disturbance analysis and the USGS 2013 habitat suitability model developed for Inman et al. (2013), expert input, and topography.

The following habitat types were described and their acreages within the DRECP Plan Area are included in Table III.7-35.

- Key Population Centers – These include habitat with high detection rates, evidence of breeding, and/or temporally persistent occurrence. They were digitized based on Leitner (2008, 2013a, 2013b), and expert input acquired during recent surveys and field observations.
- Habitat Linkages – These are hypothesized linkages based on the best available science. Linkages were based on detections, habitat suitability (from USGS model and disturbance analysis), potential corridors as defined by topography, Leitner (2008, 2013a, 2013b), expert input.
- Habitat Expansion Areas – The Mohave Ground Squirrel Technical Advisory Group Conservation Priorities document (MGS Technical Advisory Group 2010) describes expansion habitat for juvenile dispersal (up to 5 miles) and additional connectivity through contiguous blocks of habitat, lessening the dependence on hypothesized linkages. These areas were defined by buffering population centers to 5 miles and then removing unviable areas.
- Climate Change Extensions – Mohave ground squirrel are predicted to move north and west into suitable habitat providing refugia from drought. The boundaries of these areas were determined based on personal communications with Phil Leitner, observations based on climate change models, and suitable habitat and predictions in Inman et al. (2013).

Table III.7-35
Mohave Ground Squirrel Important Areas in the DRECP Plan Area

Mohave Ground Squirrel Important Area Type	Acreage
Key Population Center	675,000
Linkage	413,000
Expansion Area	563,000
Climate Change Extension	224,000
Total	**1,875,000**

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

The following are salient points relating to this species' population trends and threats.

- Approximately 88% of the geographic area of known existing populations of the species, based on Leitner (2008), occur in the DRECP Plan Area (only a portion of the Coso Range–Olancha Core population is outside this area). The primary threat to the Mohave ground squirrel has been habitat loss and fragmentation (Gustafson 1993; Leitner 2008; MGS Technical Advisory Group 2010). Additional threats include prolonged drought and other impacts of climate change, predation, livestock and wild ungulate grazing, invasive species, and vehicle collisions; and to a lesser known degree, OHV use, rodenticides, pesticides, competition, and predation by common ravens.

Pallid Bat

The pallid bat (*Antrozous pallidus*) is a California Species of Special Concern and a BLM Special-Status Species. Pallid bats roost in caves, mines, hollow trees, bridges, barns, porches, and bat boxes. Foraging habitats include grasslands, oak savannah woodlands, open pine forests, talus slopes, and agricultural areas. Within the DRECP Plan Area, the pallid bat occurs in the Owens Valley, eastern Sierra Nevada Mountains, Providence Mountains, Kingston Range, Avawatz Mountains, Cady Mountains, Little San Bernardino Mountains, Hexie Mountains, Chocolate Mountains, Peninsular Range in east San Diego County, and the Twentynine Palms area of the Lower Colorado River. The following are salient points relating to this species' population trends and threats.

- Pallid bats are known to roost in association with other common species including Yuma myotis (*Myotis yumanensis*) and big brown bat (*Eptesicus fuscus*). However, Miner and Stokes (2005) reported that in roost surveys of these common pallid bat associates in San Diego County, very few pallid bat colonies were reported. Based on this apparent population decline, Miner and Stokes (2005) concluded that pallid bats are highly intolerant of urban development.
- As a colonial roosting species, pallid bats are particularly vulnerable to disturbances of roost sites through vandalism, extermination, and destruction of buildings used as roost sites (Hermanson and O'Shea 1983), as well as recreational activities such as rock climbing. Additional threats include a reduction in food availability due to pesticides or habitat modification or degradation such as conversion to agriculture, prescribed fires, and wildfires. Other potential threats include turbine strikes at wind energy facilities.

Townsend's Big-Eared Bat

The Townsend's big-eared bat (*Corynorhinus townsendii*) is a California Species of Special Concern and has recently been proposed for listing as a threatened species under the CESA and a BLM Special-Status Species. Within the DRECP Plan Area, Townsend's big-

eared bat is primarily associated with mines in the California desert, and also largely associated with man-made structures, tunnels, caves, and the basal hollows of old-growth redwood trees. Townsend's big-eared bats may occur throughout the DRECP Plan Area, but areas known to support substantial populations include the Owens Valley and areas east of the Sierra Nevada Range in Inyo County, the Providence Mountains in San Bernardino County, and the Lower Colorado River area in San Bernardino, Riverside, and Imperial counties.

The following are salient points relating to this species' population trends and threats.

- Past studies have shown a broad-ranging decline in Townsend's big-eared bat through large parts of its range in the western United States (i.e., mainly the *C .t. townsendii* and *C. t. pallescens* subspecies). The census by Pierson and Rainey (CDFG 1998) in California, conducted from 1987 to 1991, found substantial population declines over the previous 40 years, with a 52% loss in the number of maternity colonies, a 44% decline in the number of available roosts, a 55% decline in the total number of animals (primarily adult females), and a 32% decrease in the average size of remaining colonies.
- Townsend's big-eared bats are very sensitive to human disturbances, and a single disturbance of a maternity roost or hibernation site may cause abandonment (Zeiner et al. 1990; Kunz and Martin 1982). Wind energy facilities could also pose a threat to populations of the species. Townsend's big-eared bats in the DRECP Plan Area could be at elevated risk of turbine strikes or other associated causes (e.g., barotrauma) if a wind facility were located within a few miles of a day roost site.

III.7.6.1.5 Plants

Alkali Mariposa-Lily

Alkali mariposa-lily (*Calochortus striatus*) is a BLM Special-Status Species. Alkali mariposa-lily is a perennial bulbiferous herb that grows in seasonally moist alkaline habitats such as alkaline meadows and seeps, and ephemeral washes, within chaparral, chenopod scrub, and Mojavean desert scrub. Within the DRECP Plan Area, this species is distributed from Red Rock Canyon State Park southeast to Joshua Tree National Park, with the majority of occurrences on or close by EAFB. The following are salient points relating to this species' population trends and threats.

- Abundance figures are complicated by large fluctuations from year to year, making population trends difficult to assess (NatureServe 2011). Despite its relatively wide distribution, the majority of the populations are small with the exception of the metapopulation that ranges from Lancaster to EAFB (CDFW 2013b).

- Alkali mariposa-lily is threatened by urbanization, grazing, trampling, road construction, hydrologic alterations, and water diversions that lower the water table (CNPS 2011). It is also threatened by military operations, dumping, and grading (NatureServe 2011).

Bakersfield Cactus

Bakersfield cactus (*Opuntia basilaris* var. *treleasei*) is both state- and federally listed as endangered. Bakersfield cactus is a perennial stem succulent that grows primarily in chenopod scrub, including saltbush scrub; valley and foothill grassland; and occasionally in cismontane woodland, including blue oak woodland and riparian woodland. Within the DRECP Plan Area, this species has documented occurrences at Oak Creek Pass in the Tehachapi Mountains, near West Antelope Station, and east of Bean Canyon at the foothills of the Tehachapi Mountains, and at the North Sky River wind facility. Confirmed occurrences are near Oak Creek Road (Smith 2013). The following are salient points relating to this species' population trends and threats.

- Once likely more or less continuously east of Bakersfield, the current range of Bakersfield cactus consists of scattered fragments of these once larger populations (USFWS 2011b). A status survey in 2010 and 2011 determined the current state of the historical occurrences of Bakersfield cactus throughout its range with a minimum of 33 extant occurrences recorded (Cypher et al. 2011).
- The loss and modification of habitat from agricultural conversion, wind energy development, and urban, especially residential, development remain the largest threats to Bakersfield cactus (USFWS 2011b; Kentner, pers. comm. 2012). Threats also include oil development, OHV use, sand mining, and competition from non-native grasses. In addition, climate change, air pollution (including elevated nitrogen deposition), loss of pollinators, flooding, and loss of genetic diversity have been identified as potential new threats (USFWS 2011b).

Barstow Woolly Sunflower

Barstow woolly sunflower (*Eriophyllum mohavense*) is a BLM Special-Status Species. Barstow woolly sunflower is an annual herb that prefers sandy or rocky areas within chenopod scrub, Mojavean desert scrub, creosote bush scrub, and also occurs on playas. Within the DRECP Plan Area, this species occurs primarily close to Kramer Junction on EAFB, but has also been reported farther west near the Mojave Airport, near Buckhorn Lake, near Opal and Lane Mountains, and Barstow. The following are salient points relating to this species' population trends and threats.

- Population trends for this species are unknown at this time, but a multiyear, population-level study is underway. This is an annual plant with populations that

fluctuate greatly (by orders of magnitude) from year to year depending on conditions, and has a soil seed bank that also likely shows a remarkable amount of fluctuation.

- Threats to Barstow woolly sunflower include military activities, energy and subdivision development, sheep grazing, exotic plant species, OHV use, highway and road improvements, building, mining, dumping, and pipeline construction (NatureServe 2011; CNPS 2011; MacKay, pers. comm. 2012).

Desert Cymopterus

Desert cymopterus (*Cymopterus deserticola*) is a BLM Special-Status Species. Desert cymopterus is a perennial herb that grows in Joshua tree woodland, saltbush scrub, and Mojavean desert scrub vegetation types on loose, sandy soils. Within the DRECP Plan Area, this species occurs near Buckhorn Lake along the Kern County–Los Angeles County boundary north to the Black Hills and Fort Irwin, with the majority of occurrences located on or near EAFB southwest of Kramer Junction and at Cuddleback Lake northeast of EAFB. The following are salient points relating to this species' population trends and threats.

- Estimating population size for this species is difficult. Occurrences and population size fluctuate widely from year to year in response to climatic conditions, especially rainfall. Desert cymopterus is dependent upon frequent spring rains. Furthermore, this species may remain dormant underground as a taproot and may not emerge when there isn't enough rainfall, so the number of individuals underground could be greater than the number of individuals aboveground. Also, detectability may be low in years when plants only produce leaves and no inflorescence (NatureServe 2011).
- Desert cymopterus is potentially threatened by habitat alteration and destruction resulting from military activities on EAFB, the expansion of Fort Irwin, oil and gas development, utility construction, renewable energy development, OHV use, sheep grazing, Land Tenure Adjustment, and urban development (69 FR 64884–64889; CNPS 2011).

Little San Bernardino Mountains Linanthus

Little San Bernardino Mountains linanthus (*Linanthus maculatus*) has no federal or state designations, but is considered rare. Little San Bernardino Mountains linanthus is an annual herb that grows on loose, well-aerated, open sandy benches and flats on the margins of desert washes. Within the DRECP Plan Area, this species occurs in or near Joshua Tree National Park, Lucerne Valley, Two Hole Spring at the northeastern base of the San Bernardino Mountains, and along the western boundary of the DRECP Plan Area in San

Bernardino and Riverside counties. The following are salient points relating to this species' population trends and threats.

- Population trends are difficult to estimate for the species because population size in a given year appears to depend on environmental conditions and fluctuates greatly from year to year.
- Little San Bernardino Mountains linanthus is potentially threatened by habitat disturbance and destruction from urban expansion, OHV use, illegal dumping, invasive non-native species (CNPS 2011; CDFW 2013c), and flood control activities (CVAG 2006).

Mojave Monkeyflower

Mojave monkeyflower (*Mimulus mohavensis*) is a BLM Special-Status Species. Mojave monkeyflower is an annual herb that occurs in Joshua tree woodland and Mojavean desert scrub, specifically creosote bush. Within the DRECP Plan Area, a large population occurs southeast of Barstow to Ord Mountain, as well as northeast of Adelanto, at Hodge, and just south of the Black Mountains summit. The following are salient points relating to this species' population trends and threats.

- Population trends for Mojave monkeyflower are unknown at present, but a multiyear population-level study is underway. Population sizes fluctuate substantially from year to year, probably in response to the amount and timing of precipitation; as an annual, germination and establishment are dependent on the timing and amount of spring rains (MacKay 2006; NatureServe 2011).
- Threats to Mojave monkeyflower include development, mining, non-native plants, solar and wind energy projects, grazing, vehicles, and road development (CNPS 2011; NatureServe 2011; MacKay 2006). Additional potential threats include pipeline installation, quarries, and test pits adjacent to populations (MacKay 2006).

Mojave Tarplant

Mojave tarplant (*Deinandra mohavensis*) is not federally or state-listed, but is a BLM Special-Status Species. The Mojave tarplant is an annual herb that occurs in open moist sites in arid regions near desert margins, and within chaparral, coastal scrub, and riparian scrub. Within the DRECP Plan Area, Mojave tarplant is known from the desert slope of the southern Sierra Nevada Mountains in Kern County. The following are salient points relating to this species' population trends and threats.

- Because this species was only recently rediscovered (in 1994) there is little information available on population trends. Overall, there are 121 occurrences in Kern, Riverside,

and San Diego counties (CDFW 2013d) and most of these appear to have the number of individuals estimated only once, making it difficult to discern a population trend.

- Mojave tarplant is threatened by grazing, recreational activities, development, hydrologic alterations, road maintenance, and vehicles (CNPS 2011).

Owens Valley Checkerbloom

Owens Valley checkerbloom (*Sidalcea covillei*) is state-listed as endangered and is a BLM Special-Status Species. Owens Valley checkerbloom is a perennial herb that grows in moist alkaline meadows and seeps and saltbush scrub in fine, sandy loam with alkaline crusts. Within the DRECP Plan Area, this species occurs within the Owens River Valley ecoregion subarea. The following are salient points relating to this species' population trends and threats.

- Owens Valley checkerbloom occurs solely in mesic high-elevation alkaline meadow habitats in the Owens Valley River drainage. This species is highly restricted to a specialized habitat with very limited distribution.
- A cooperative project initiated in 1994 by the BLM, CDFW, and The Nature Conservancy to test the long-term survivorship of reintroduced Owens Valley checkerbloom demonstrated that the species can be successfully propagated and transplanted, allowing some flexibility in the response of management activities to suitable habitat areas disturbed by grazing or other surface disturbing threats.
- Threats to this species include cattle grazing, groundwater depletion, and the associated invasion by competing species.

Parish's Daisy

Parish's daisy (*Erigeron parishii*) is federally listed as threatened but is not state-listed. Parish's daisy is a perennial herb that occurs in Mojavean desert scrub and pinyon and juniper woodlands and is largely restricted to loose, carbonate alluvium, although it is occasionally found on other rock types. Within the DRECP Plan Area, this species is known from Joshua Tree National Park and on the University of California Natural Reserve System Burns Pinion Ridge Reserve. The following are salient points relating to this species' population trends and threats.

- The current population status of Parish's daisy is unclear. USFWS (2009d) notes that what constitutes an occurrence has been subjectively defined over various surveys, making it difficult to specify status or change in status of Parish's daisy since it was listed.

- The main threat to Parish's daisy is limestone mining because this species is mostly restricted to carbonate deposits (USFWS 2009d). Additional threats include energy development projects, OHVs, fuel-wood collection, fire suppression activities, camping, target shooting, road construction, and residential developments.

Triple-Ribbed Milk-Vetch

Triple-ribbed milk-vetch (*Astragalus tricarinatus*) is a federally listed endangered species but is not state-listed. Triple-ribbed milk-vetch is a perennial herb characterized as generally occurring in Joshua tree woodland and Sonoran desert scrub. Within the DRECP Plan Area, this species occurs at Wathier Landing, Catclaw Flat, Mission Creek, Dry Morongo Canyon and Wash, Big Morongo Canyon, Long Canyon, Coyote Hole Spring, Key's Ranch (note that this site is unvouchered or was not collected), and Orocopia Mountains. Many of these largest populations lie outside the DRECP Plan Area, and only relatively small populations are known within the DRECP Plan Area, primarily in the washes draining north from Joshua Tree National Park in the Yucca Valley area. The following are salient points relating to this species' population trends and threats.

- For the 5-year review of the species, USFWS estimated the known rangewide population to be less than 500 individuals (USFWS 2009e).
- Threats to the species within the DRECP Plan Area include maintenance of the crude oil pipeline and from OHV use. Its small population numbers make it vulnerable to stochastic events and anthropogenic events such as pipeline leaks (USFWS 2009e). New threats identified since the species' federal listing include wildland fire suppression activities, flooding, and climate change (USFWS 2009e) and exotic weed infestations resulting from increased vehicle and foot traffic (Amsberry and Meinke 2007).

III.7.6.1.6 Focus Species by Ecoregion Subarea

Cadiz Valley and Chocolate Mountains Ecoregion Subarea

The Focus Species known to occur within the Cadiz Valley and Chocolate Mountains ecoregion subarea are shown on Figure III.7-16 and detailed in Table III.7-36.

Table III.7-36
Focus Species Occurring within the Cadiz Valley and Chocolate Mountains Ecoregion Subarea of the DRECP

Common Name	Scientific Name	Federal Status[1]	State Status[2]
Amphibians/Reptiles			
Agassiz's desert tortoise	*Gopherus agassizii*	FT	ST
Mojave fringe-toed lizard	*Uma scoparia*	BLM	CSC
Birds			
Bendire's thrasher	*Toxostoma bendirei*	BCC/BLM	CSC
Burrowing owl	*Athene cunicularia*	BCC/BLM	CSC
California black rail	*Laterallus jamaicensis coturniculus*	BCC/BLM	ST/FP
Gila woodpecker	*Melanerpes uropygialis*	BLM/BCC	SE
Golden eagle	*Aquila chrysaetos*	BLM	FP
Greater sandhill crane	*Grus canadensis tabida*	BLM/FS	ST/FP
Mountain plover	*Charadrius montanus*	BCC/BLM	CSC
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	FT/FS/BCC/BLM	SE
Willow flycatcher (including southwestern)	*Empidonax traillii* (including *extimus*)	Southwestern: FE	SE
Yuma Ridgway's rail	*Rallus obsoletus yumanensis*	FE/BCC	ST/FP
Fish			
Desert pupfish	*Cyprinodon macularius*	FE	SE
Mammals			
Desert bighorn sheep	*Ovis canadensis nelsoni*	Desert: BLM	Desert: FP[3]
California leaf-nosed bat	*Macrotus californicus*	BLM/FS	CSC
Pallid bat	*Antrozous pallidus*	BLM/FS	CSC
Townsend's big-eared bat	*Corynorhinus townsendii*	BLM/FS	SC/CSC

[1] Federal Status – FE: Federally Endangered; FT: Federally Threatened; FD: Federally Delisted; FS: USFS Sensitive; BLM: Bureau Land Management Sensitive; BCC: USFWS Bird of Conservation Concern.

[2] State Status – SE: California Endangered; ST: California Threatened; SC: Candidate for listing; CSC: California Species of Special Concern; FP: Fully Protected; SR: State Rare. California Rare Plant Rank (CRPR, formerly known as the CNPS List)– CRPR 1B: Considered rare, threatened, or endangered in California and elsewhere; CRPR 2: Considered rare, threatened, or endangered in California, but more common elsewhere; CRPR 3: Plants which need more information; CRPR 4: Limited distribution – a Watch List.

[3] Limited hunting allowed.

Imperial Borrego Valley Ecoregion Subarea

The Focus Species known to occur within the Imperial Borrego Valley ecoregion subarea are shown on Figure III.7-17 and detailed in Table III.7-37.

Table III.7-37
Focus Species Occurring within the Imperial Borrego Valley Ecoregion Subarea of the DRECP

Common Name	Scientific Name	Federal Status[1]	State Status[2]
Amphibians/Reptiles			
Desert tortoise	*Gopherus agassizii*	FT	ST
Flat-tailed horned lizard	*Phrynosoma mcallii*	BLM/FS	SC/CSC
Birds			
Burrowing owl	*Athene cunicularia*	BCC/BLM	CSC
California black rail	*Laterallus jamaicensis coturniculus*	BCC/BLM	ST/FP
Gila woodpecker	*Melanerpes uropygialis*	BLM/BCC	SE
Golden eagle	*Aquila chrysaetos*	BLM	FP
Greater sandhill crane	*Grus canadensis tabida*	BLM/FS	ST/FP
Least Bell's vireo	*Vireo bellii pusillus*	FE/BCC	SE
Mountain plover	*Charadrius montanus*	BCC/BLM	CSC
Swainson's hawk	*Buteo swainsoni*	BLM/FS	ST
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	FT/FS/BCC/BLM	SE
Willow flycatcher (including southwestern)	*Empidonax traillii* (including *extimus*)	Southwestern: FE	SE
Yuma Ridgway's rail	*Rallus obsoletus yumanensis*	FE/BCC	ST/FP
Fish			
Desert pupfish	*Cyprinodon macularius*	FE	SE
Mammals			
Desert bighorn sheep	*Ovis canadensis nelsoni*	Desert: BLM	Desert: FP[3]
California leaf-nosed bat	*Macrotus californicus*	BLM/FS	CSC
Pallid bat	*Antrozous pallidus*	BLM/FS	CSC
Townsend's big-eared bat	*Corynorhinus townsendii*	BLM/FS	SC/CSC
Plants			
Little San Bernardino Mountains linanthus	*Linanthus maculatus*	BLM	(CRPR 1B.2)

[1] Federal Status – FE: Federally Endangered; FT: Federally Threatened; FD: Federally Delisted; FS: USFS Sensitive; BLM: Bureau Land Management Sensitive; BCC: USFWS Bird of Conservation Concern.

[2] State Status – SE: California Endangered; ST: California Threatened; SC: Candidate for listing; CSC: California Species of Special Concern; FP: Fully Protected; SR: State Rare. California Rare Plant Rank (CRPR, formerly known as the CNPS List)– CRPR 1B: Considered rare, threatened, or endangered in California and elsewhere; CRPR 2: Considered rare, threatened, or endangered in California, but more common elsewhere; CRPR 3: Plants which need more information; CRPR 4: Limited distribution – a Watch List.

[3] Limited hunting allowed.

Kingston and Funeral Mountains Ecoregion Subarea

The Focus Species known to occur within the Kingston and Funeral Mountains ecoregion subarea are shown on Figure III.7-18 and detailed in Table III.7-38.

Table III.7-38
Focus Species Occurring within the Kingston and Funeral Mountains Ecoregion Subarea of the DRECP

Common Name	Scientific Name	Federal Status[1]	State Status[2]
Amphibians/Reptiles			
Desert tortoise	*Gopherus agassizii*	FT	ST
Mojave fringe-toed lizard	*Uma scoparia*	BLM	CSC
Birds			
Bendire's thrasher	*Toxostoma bendirei*	BCC/BLM	CSC
Burrowing owl	*Athene cunicularia*	BCC/BLM	CSC
Golden eagle	*Aquila chrysaetos*	BLM	FP
Least Bell's vireo	*Vireo bellii pusillus*	FE/BCC	SE
Mountain plover	*Charadrius montanus*	BCC/BLM	CSC
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	FT/FS/BCC/BLM	SE
Willow flycatcher (including southwestern)	*Empidonax traillii (*including *extimus*)	Southwestern: FE	SE
Fish			
Mohave tui chub	*Siphateles (Gila) bicolor mohavensis*	FE	SE/FP
Mammals			
Desert bighorn sheep	*Ovis canadensis nelsoni*	Desert: BLM	Desert: FP[3]
Pallid bat	*Antrozous pallidus*	BLM/FS	CSC
Townsend's big-eared bat	*Corynorhinus townsendii*	BLM/FS	SC/CSC
Plants			
Alkali mariposa-lily	*Calochortus striatus*	BLM	(CRPR 1B.2)

1 Federal Status – FE: Federally Endangered; FT: Federally Threatened; FD: Federally Delisted; FS: USFS Sensitive; BLM: Bureau Land Management Sensitive; BCC: USFWS Bird of Conservation Concern.

2 State Status – SE: California Endangered; ST: California Threatened; CSC: California Species of Special Concern; FP: Fully Protected; SC: Candidate for listing; SR: State Rare. California Rare Plant Rank (CRPR, formerly known as the CNPS List)– CRPR 1B: Considered rare, threatened, or endangered in California and elsewhere; CRPR 2: Considered rare, threatened, or endangered in California, but more common elsewhere; CRPR 3: Plants which need more information; CRPR 4: Limited distribution – a watch list.

3 Limited hunting allowed.

Mojave and Silurian Valley Ecoregion Subarea

The Focus Species known to occur within the Mojave and Silurian Valley ecoregion subarea are shown on Figure III.7-19 and detailed in Table III.7-39.

Table III.7-39
Focus Species Occurring within the
Mojave and Silurian Valley Ecoregion Subarea of the DRECP

Common Name	Scientific Name	Federal Status[1]	State Status[2]
Amphibians/Reptiles			
Desert tortoise	*Gopherus agassizii*	FT	ST
Mojave fringe-toed lizard	*Uma scoparia*	BLM	CSC
Birds			
Bendire's thrasher	*Toxostoma bendirei*	BCC/BLM	CSC
Burrowing owl	*Athene cunicularia*	BCC/BLM	CSC
Golden eagle	*Aquila chrysaetos*	BLM	FP
Tricolored blackbird	*Agelaius tricolor*	BLM/BCC	SE
Willow flycatcher (including southwestern)	*Empidonax traillii* (including *extimus*)	Southwestern: FE	SE
Fish			
Mohave tui chub	*Siphateles (Gila) bicolor mohavensis*	FE	SE/FP
Mammals			
Desert bighorn sheep	*Ovis canadensis nelsoni*	Desert: BLM	Desert: FP[3]
Mohave ground squirrel	*Xerospermophilus mohavensis*	BLM	ST
Pallid bat	*Antrozous pallidus*	BLM/FS	CSC
Townsend's big-eared bat	*Corynorhinus townsendii*	BLM/FS	SC/CSC
Plants			
Alkali mariposa-lily	*Calochortus striatus*	BLM	(CRPR 1B.2)
Barstow woolly sunflower	*Eriophyllum mohavense*	BLM	(CRPR 1B.2)
Desert cymopterus	*Cymopterus deserticola*	BLM	(CRPR 1B.2)
Mojave monkeyflower	*Mimulus mohavensis*	BLM	(CRPR 1B.2)

1 Federal Status – FE: Federally Endangered; FT: Federally Threatened; FD: Federally Delisted; FS: USFS Sensitive; BLM: Bureau Land Management Sensitive; BCC: USFWS Bird of Conservation Concern.

2 State Status – SE: California Endangered; ST: California Threatened; SC: Candidate for listing; CSC: California Species of Special Concern; FP: Fully Protected; SR: State Rare. California Rare Plant Rank (CRPR, formerly known as the CNPS List)– CRPR 1B: Considered rare, threatened, or endangered in California and elsewhere; CRPR 2: Considered rare, threatened, or endangered in California, but more common elsewhere; CRPR 3: Plants which need more information; CRPR 4: Limited distribution – a Watch List.

3 Limited hunting allowed.

Owens River Valley Ecoregion Subarea

The Focus Species known to occur within the Owens River Valley ecoregion subarea are shown on Figure III.7-20 and detailed in Table III.7-40.

Table III.7-40
Focus Species Occurring within the Owens River Valley Ecoregion Subarea of the DRECP

Common Name	Scientific Name	Federal Status[1]	State Status[2]
Amphibians/Reptiles			
Agassiz's desert tortoise	*Gopherus agassizii*	FT	ST
Birds			
Burrowing owl	*Athene cunicularia*	BCC/BLM	CSC
Golden eagle	*Aquila chrysaetos*	BLM	FP
Least Bell's vireo	*Vireo bellii pusillus*	FE/BCC	SE
Swainson's hawk	*Buteo swainsoni*	BLM/FS	ST
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	FT/FS/BCC/BLM	SE
Willow flycatcher (including southwestern)	*Empidonax traillii* (including *extimus*)	Southwestern: FE	SE
Fish			
Owens pupfish	*Cyprinodon radiosus*	FE	SE/FP
Owens tui chub	*Siphateles (Gila) bicolor snyderi*	FE	SE
Mammals			
Mohave ground squirrel	*Xerospermophilus mohavensis*	BLM	ST
Pallid bat	*Antrozous pallidus*	BLM/FS	CSC
Townsend's big-eared bat	*Corynorhinus townsendii*	BLM/FS	SC/CSC
BLM Special-Status Plants			
Mojave tarplant	*Deinandra mohavensis*	BLM	SE (CRPR 1B.3)
Owens Valley checkerbloom	*Sidalcea covillei*	BLM	SE/ (CRPR 1B.1)

[1] Federal Status – FE: Federally Endangered; FT: Federally Threatened; FD: Federally Delisted; FS: USFS Sensitive; BLM: Bureau Land Management Sensitive; BCC: USFWS Bird of Conservation Concern.

[2] State Status – SE: California Endangered; ST: California Threatened; SC: Candidate for listing; CSC: California Species of Special Concern; FP: Fully Protected; SR: State Rare. California Rare Plant Rank (CRPR, formerly known as the CNPS List)– CRPR 1B: Considered rare, threatened, or endangered in California and elsewhere; CRPR 2: Considered rare, threatened, or endangered in California, but more common elsewhere; CRPR 3: Plants which need more information; CRPR 4: Limited distribution – a Watch List.

Panamint Death Valley Ecoregion Subarea

The Focus Species known to occur within the Panamint Death Valley ecoregion subarea are shown on Figure III.7-21 and detailed in Table III.7-41.

Table III.7-41
Focus Species Occurring within the
Panamint Death Valley Ecoregion Subarea of the DRECP

Common Name	Scientific Name	Federal Status[1]	State Status[2]
Amphibians/Reptiles			
Agassiz's desert tortoise	*Gopherus agassizii*	FT	ST
Birds			
Burrowing owl	*Athene cunicularia*	BCC/BLM	CSC
Golden eagle	*Aquila chrysaetos*	BLM	FP
Tricolored blackbird	*Agelaius tricolor*	BLM/BCC	SE
Mammals			
Desert bighorn sheep	*Ovis canadensis nelsoni*	Desert: BLM	Desert: FP[3]
California leaf-nosed bat	*Macrotus californicus*	BLM/FS	CSC
Mohave ground squirrel	*Xerospermophilus mohavensis*	BLM	ST
Pallid bat	*Antrozous pallidus*	BLM/FS	CSC
Townsend's big-eared bat	*Corynorhinus townsendii*	BLM/FS	SC/CSC

[1] Federal Status – FE: Federally Endangered; FT: Federally Threatened; FD: Federally Delisted; FS: USFS Sensitive; BLM: Bureau Land Management Sensitive; BCC: USFWS Bird of Conservation Concern.
[2] State Status – SE: California Endangered; ST: California Threatened; SC: Candidate for listing; CSC: California Species of Special Concern; FP: Fully Protected; SR: State Rare. California Rare Plant Rank (CRPR, formerly known as the CNPS List)– CRPR 1B: Considered rare, threatened, or endangered in California and elsewhere; CRPR 2: Considered rare, threatened, or endangered in California, but more common elsewhere; CRPR 3: Plants which need more information; CRPR 4: Limited distribution – a Watch List.
[3] Limited hunting allowed.

Pinto Lucerne Valley and Eastern Slopes Ecoregion Subarea

The Focus Species known to occur within the Pinto Lucerne Valley and Eastern Slopes ecoregion subarea are shown on Figure III.7-22 and detailed in Table III.7-42.

Table III.7-42
Focus Species Occurring within the
Pinto Lucerne Valley and Eastern Slopes Ecoregion Subarea of the DRECP

Common Name	Scientific Name	Federal Status[1]	State Status[2]
Amphibians/Reptiles			
Desert tortoise	*Gopherus agassizii*	FT	ST
Mojave fringe-toed lizard	*Uma scoparia*	BLM	CSC
Birds			
Bendire's thrasher	*Toxostoma bendirei*	BCC/BLM	CSC
Burrowing owl	*Athene cunicularia*	BCC/BLM	CSC
Golden eagle	*Aquila chrysaetos*	BLM	FP
Least Bell's vireo	*Vireo bellii pusillus*	FE/BCC	SE

Table III.7-42
Focus Species Occurring within the
Pinto Lucerne Valley and Eastern Slopes Ecoregion Subarea of the DRECP

Common Name	Scientific Name	Federal Status[1]	State Status[2]
Willow flycatcher (including southwestern)	*Empidonax traillii* (including *extimus*)	Southwestern: FE	SE
Fish			
Mohave tui chub	*Siphateles (Gila) bicolor mohavensis*	FE	SE/FP
Mammals			
Desert bighorn sheep	*Ovis canadensis nelsoni*	Desert: BLM	Desert: FP[3]
California leaf-nosed bat	*Macrotus californicus*	BLM/FS	CSC
Pallid bat	*Antrozous pallidus*	BLM/FS	CSC
Townsend's big-eared bat	*Corynorhinus townsendii*	BLM/FS	SC/CSC
Plants			
Alkali mariposa-lily	*Calochortus striatus*	BLM	(CRPR 1B.2)
Barstow woolly sunflower	*Eriophyllum mohavense*	BLM	(CRPR 1B.2)
Desert cymopterus	*Cymopterus deserticola*	BLM	(CRPR 1B.2)
Little San Bernardino Mountains linanthus	*Linanthus maculatus*	BLM	(CRPR 1B.2)
Mojave monkeyflower	*Mimulus mohavensis*	BLM	(CRPR 1B.2)
Parish's daisy	*Erigeron parishii*	FT	(CRPR 1B.1)
Triple-ribbed milk-vetch	*Astragalus tricarinatus*	FE	(CRPR 1B.2)

[1] Federal Status – FE: Federally Endangered; FT: Federally Threatened; FD: Federally Delisted; FS: USFS Sensitive; BLM: Bureau Land Management Sensitive; BCC: USFWS Bird of Conservation Concern.
[2] State Status – SE: California Endangered; ST: California Threatened; SC: Candidate for listing; CSC: California Species of Special Concern; FP: Fully Protected; SR: State Rare. California Rare Plant Rank (CRPR, formerly known as the CNPS List)– CRPR 1B: Considered rare, threatened, or endangered in California and elsewhere; CRPR 2: Considered rare, threatened, or endangered in California, but more common elsewhere; CRPR 3: Plants which need more information; CRPR 4: Limited distribution – a Watch List.
[3] Limited hunting allowed.

Piute Valley and Sacramento Mountains Ecoregion Subarea

The Focus Species known to occur within the Piute Valley and Sacramento Mountains ecoregion subarea are shown on Figure III.7-23 and detailed in Table III.7-43.

Table III.7-43
Focus Species Occurring within the
Piute Valley and Sacramento Mountains Ecoregion Subarea of the DRECP

Common Name	Scientific Name	Federal Status[1]	StateStatus[2]
Amphibians/Reptiles			
Agassiz's desert tortoise	*Gopherus agassizii*	FT	ST
Birds			
Bendire's thrasher	*Toxostoma bendirei*	BCC/BLM	CSC
Burrowing owl	*Athene cunicularia*	BCC/BLM	CSC
Gila woodpecker	*Melanerpes uropygialis*	BLM/BCC	SE
Golden eagle	*Aquila chrysaetos*	BLM	FP
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	FT/FS/BCC/BLM	SE
Willow flycatcher (including southwestern)	*Empidonax traillii* (including *extimus*)	Southwestern: FE	SE
Yuma Ridgway's rail	*Rallus obsoletus yumanensis*	FE/BCC	ST/FP
Mammals			
Desert bighorn sheep	*Ovis canadensis nelsoni*	Desert: BLM	Desert: FP[3]
California leaf-nosed bat	*Macrotus californicus*	BLM/FS	CSC
Pallid bat	*Antrozous pallidus*	BLM/FS	CSC
Townsend's big-eared bat	*Corynorhinus townsendii*	BLM/FS	SC/CSC

1 Federal Status – FE: Federally Endangered; FT: Federally Threatened; FD: Federally Delisted; FS: USFS Sensitive; BLM: Bureau Land Management Sensitive; BCC: USFWS Bird of Conservation Concern.
2 State Status – SE: California Endangered; ST: California Threatened; SC: Candidate for listing; CSC: California Species of Special Concern; FP: Fully Protected; SR: State Rare. California Rare Plant Rank (CRPR, formerly known as the CNPS List)– CRPR 1B: Considered rare, threatened, or endangered in California and elsewhere; CRPR 2: Considered rare, threatened, or endangered in California, but more common elsewhere; CRPR 3: Plants which need more information; CRPR 4: Limited distribution – a Watch List.
3 Limited hunting allowed.

Providence and Bullion Mountains Ecoregion Subarea

The Focus Species known to occur within the Providence and Bullion Mountains ecoregion subarea are shown on Figure III.7-24 and detailed in Table III.7-44.

Table III.7-44
Focus Species Occurring within the
Providence and Bullion Mountains Ecoregion Subarea of the DRECP

Common Name	Scientific Name	Federal Status[1]	State Status[2]
Amphibians/Reptiles			
Agassiz's desert tortoise	*Gopherus agassizii*	FT	ST
Mojave fringe-toed lizard	*Uma scoparia*	BLM	CSC

Table III.7-44
Focus Species Occurring within the
Providence and Bullion Mountains Ecoregion Subarea of the DRECP

Common Name	Scientific Name	Federal Status[1]	State Status[2]
Birds			
Bendire's thrasher	*Toxostoma bendirei*	BCC/BLM	CSC
Burrowing owl	*Athene cunicularia*	BCC/BLM	CSC
Golden eagle	*Aquila chrysaetos*	BLM	FP
Mountain plover	*Charadrius montanus*	BCC/BLM	CSC
Swainson's hawk	*Buteo swainsoni*	BLM/FS	ST
Fish			
Mohave tui chub	*Siphateles (Gila) bicolor mohavensis*	FE	SE/FP
Mammals			
Desert bighorn sheep	*Ovis canadensis nelsoni*	Desert: BLM	Desert: FP[3]
California leaf-nosed bat	*Macrotus californicus*	BLM/FS	CSC
Pallid bat	*Antrozous pallidus*	BLM/FS	CSC
Townsend's big-eared bat	*Corynorhinus townsendii*	BLM/FS	SC/CSC

1 Federal Status – FE: Federally Endangered; FT: Federally Threatened; FD: Federally Delisted; FS: USFS Sensitive; BLM: Bureau Land Management Sensitive; BCC: USFWS Bird of Conservation Concern.
2 State Status – SE: California Endangered; ST: California Threatened; SC: Candidate for listing; CSC: California Species of Special Concern; FP: Fully Protected; SR: State Rare. California Rare Plant Rank (CRPR, formerly known as the CNPS List)– CRPR 1B: Considered rare, threatened, or endangered in California and elsewhere; CRPR 2: Considered rare, threatened, or endangered in California, but more common elsewhere; CRPR 3: Plants which need more information; CRPR 4: Limited distribution – a Watch List.
3 Limited hunting allowed.

West Mojave and Eastern Slopes Ecoregion Subarea

The Focus Species known to occur within the West Mojave and Eastern Slopes ecoregion subarea are shown on Figure III.7-25 and detailed in Table III.7-45.

Table III.7-45
Focus Species Occurring within the
West Mojave and Eastern Slopes Ecoregion Subarea of the DRECP

Common Name	Scientific Name	Federal Status[1]	State Status[2]
Amphibians/Reptiles			
Agassiz's desert tortoise	*Gopherus agassizii*	FT	ST
Mojave fringe-toed lizard	*Uma scoparia*	BLM	CSC
Tehachapi slender salamander	*Batrachoseps stebbinsi*	BLM/FS	ST
Birds			
Bendire's thrasher	*Toxostoma bendirei*	BCC/BLM	CSC
Burrowing owl	*Athene cunicularia*	BCC/BLM	CSC

Table III.7-45
Focus Species Occurring within the
West Mojave and Eastern Slopes Ecoregion Subarea of the DRECP

Common Name	Scientific Name	Federal Status[1]	State Status[2]
Golden eagle	*Aquila chrysaetos*	BLM	FP
Greater sandhill crane	*Grus canadensis tabida*	BLM/FS	ST/FP
Least Bell's vireo	*Vireo bellii pusillus*	FE/BCC	SE
Mountain plover	*Charadrius montanus*	BCC/BLM	CSC
Willow flycatcher (including southwestern)	*Empidonax traillii* (including *extimus*)	Southwestern: FE	SE
Swainson's hawk	*Buteo swainsoni*	BLM/FS	ST
Tricolored blackbird	*Agelaius tricolor*	BLM/BCC	SE
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	FT/FS/BCC/ BLM	SE
Yuma Ridgway's rail	*Rallus obsoletus yumanensis*	FE/BCC	ST/FP
Fish			
Mohave tui chub	*Siphateles (Gila) bicolor mohavensis*	FE	SE/FP
Mammals			
Mohave ground squirrel	*Xerospermophilus mohavensis*	BLM	ST
Pallid bat	*Antrozous pallidus*	BLM/FS	CSC
Townsend's big-eared bat	*Corynorhinus townsendii*	BLM/FS	SC/CSC
Plants			
Alkali mariposa-lily	*Calochortus striatus*	BLM	(CRPR 1B.2)
Bakersfield cactus	*Opuntia basilaris* var. *treleasei*	FE	SE/(CRPR 1B.1)
Barstow woolly sunflower	*Eriophyllum mohavense*	BLM	(CRPR 1B.2)
Desert cymopterus	*Cymopterus deserticola*	BLM	(CRPR 1B.2)
Mojave monkeyflower	*Mimulus mohavensis*	BLM	(CRPR 1B.2)
Mojave tarplant	*Deinandra mohavensis*	BLM	SE/(CRPR 1B.3)

[1] Federal Status – FE: Federally Endangered; FT: Federally Threatened; FD: Federally Delisted; FS: USFS Sensitive; BLM: Bureau Land Management Sensitive; BCC: USFWS Bird of Conservation Concern.

[2] State Status – SE: California Endangered; ST: California Threatened; SC: Candidate for listing; CSC: California Species of Special Concern; FP: Fully Protected; SR: State Rare. California Rare Plant Rank (CRPR, formerly known as the CNPS List)– CRPR 1B: Considered rare, threatened, or endangered in California and elsewhere; CRPR 2: Considered rare, threatened, or endangered in California, but more common elsewhere; CRPR 3: Plants which need more information; CRPR 4: Limited distribution – a Watch List.

III.7.6.2 Focus and Planning Species Modeled Habitat

Table III.7-46 shows the acreage of modeled habitat for each of the 37 Focus Species and 2 Planning Species. It also shows the acreage of and USFWS-designated critical habitat for the five Focus Species that have critical habitat designated in the DRECP Plan Area: Agassiz's desert tortoise, California condor, southwestern willow flycatcher, desert

pupfish, and Parish's daisy. There is also USFWS-designated critical habitat for three species not covered under DRECP in the DRECP Plan Area including 1,078 acres for Cushenbury milk-vetch (*Astragalus albens*), 118 acres for Cushenbury oxytheca (*Acanthoscyphus parishii* var. *goodmaniana*), and 12,105 acres for Peirson's milk-vetch (*Astragalus magdalenae* var. *peirsonii*). The species model methods and results are provided in Appendix C (Species Habitat Models) of the Baseline Biology Report (Appendix Q), and supporting documentation for species models with detailed information on methods, data, and processing is provided at http://databasin.org/.

Table III.7-46
Focus and Planning Species' Modeled Habitat and Critical Habitat within the DRECP Plan Area

Common Name	Scientific Name	Modeled Habitat (Acres)	Critical Habitat (Acres)
Focus Species			
Amphibians/Reptiles			
Agassiz's desert tortoise	*Gopherus agassizii*	12,305,800	4,143,000
Flat-tailed horned lizard	*Phrynosoma mcallii*	918,000	NA
Mojave fringe-toed lizard	*Uma scoparia*	1,122,000	NA
Tehachapi slender salamander	*Batrachoseps stebbinsi*	48,000	NA
Birds			
Bendire's thrasher	*Toxostoma bendirei*	2,219,000	NA
Burrowing owl	*Athene cunicularia*	6,496,000	NA
California black rail	*Laterallus jamaicensis coturniculus*	222,000	NA
California condor	*Gymnogyps californianus*	1,287,000	<10
Gila woodpecker	*Melanerpes uropygialis*	109,000	NA
Golden eagle – foraging	*Aquila chrysaetos*	8,082,000	NA
Golden eagle – nesting	*Aquila chrysaetos*	5,222,000	NA
Greater sandhill crane	*Grus canadensis tabida*	638,000	NA
Least Bell's vireo	*Vireo bellii pusillus*	233,000	NA
Mountain plover	*Charadrius montanus*	831,000	NA
Swainson's hawk	*Buteo swainsoni*	1,616,000	NA
Tricolored blackbird	*Agelaius tricolor*	278,000	NA
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	175,000	NA
Willow flycatcher (including southwestern)	*Empidonax traillii (*including *extimus*)	330,000	5,600
Yuma Ridgway's rail	*Rallus obsoletus yumanensis*	58,000	NA

Table III.7-46
Focus and Planning Species' Modeled Habitat and Critical Habitat within the DRECP Plan Area

Common Name	Scientific Name	Modeled Habitat (Acres)	Critical Habitat (Acres)
Fish			
Desert pupfish	*Cyprinodon macularius*	8,000	770
Mohave tui chub	*Siphateles (Gila) bicolor mohavensis*	400	NA
Owens pupfish	*Cyprinodon radiosus*	18,000	NA
Owens tui chub	*Siphateles (Gila) bicolor snyderi*	17,000	NA
Mammals			
Desert bighorn sheep	*Ovis canadensis nelsoni*	Intermountain: 4,893,00; Mountain: 7,980,000	NA
California leaf-nosed bat	*Macrotus californicus*	8,319,000	NA
Mohave ground squirrel	*Xerospermophilus mohavensis*	3,501,000	NA
Pallid bat	*Antrozous pallidus*	19,649,000	NA
Townsend's big-eared bat	*Corynorhinus townsendii*	17,452,000	NA
Plants			
Alkali mariposa-lily	*Calochortus striatus*	189,000	NA
Bakersfield cactus	*Opuntia basilaris* var. *treleasei*	279,000	NA
Barstow woolly sunflower	*Eriophyllum mohavense*	187,000	NA
Desert cymopterus	*Cymopterus deserticola*	345,000	NA
Little San Bernardino Mountains linanthus	*Linanthus maculatus*	345,000	NA
Mojave monkeyflower	*Mimulus mohavensis*	176,000	NA
Mojave tarplant	*Deinandra mohavensis*	270,000	NA
Owens Valley checkerbloom	*Sidalcea covillei*	148,000	NA
Parish's daisy	*Erigeron parishii*	188,000	1,600
Triple-ribbed milk-vetch	*Astragalus tricarinatus*	8,000	NA
Planning Species			
Mammals			
Burro deer	*Odocoileus hemionus eremicus*	1,151,000	NA
Desert kit fox	*Vulpes macrotis arsipus*	13,942,000	NA

Note: Critical habitat is USFWS-designated and the acreage includes areas on military and Open OHV lands; NA = Not applicable (no USFWS-designated critical habitat for this species occurs in the DRECP Plan Area).

Cadiz Valley and Chocolate Mountains Ecoregion Subarea

The Focus and Planning Species' modeled habitat within the Cadiz Valley and Chocolate Mountains ecoregion subarea are detailed in Table III.7-47. Maps of the Focus and Planning Species' modeled habitat are provided in the Baseline Biology Report.

Table III.7-47
Focus and Planning Species' Modeled Habitat within the Cadiz Valley and Chocolate Mountains Ecoregion Subarea of the DRECP

Common Name	Scientific Name	Acres
Focus Species		
Amphibians/Reptiles		
Agassiz's desert tortoise	*Gopherus agassizii*	1,604,900
Flat-tailed horned lizard	*Phrynosoma mcallii*	2,000
Mojave fringe-toed lizard	*Uma scoparia*	589,000
Birds		
Bendire's thrasher	*Toxostoma bendirei*	65,000
Burrowing owl	*Athene cunicularia*	475,000
California black rail	*Laterallus jamaicensis coturniculus*	42,000
Gila woodpecker	*Melanerpes uropygialis*	27,000
Golden eagle – foraging	*Aquila chrysaetos*	1,283,000
Golden eagle – nesting	*Aquila chrysaetos*	646,000
Greater sandhill crane	*Grus canadensis tabida*	108,000
Least Bell's vireo	*Vireo bellii pusillus*	6,000
Mountain plover	*Charadrius montanus*	113,000
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	40,000
Willow flycatcher (including southwestern)	*Empidonax traillii* (including *extimus*)	18,000
Yuma Ridgway's rail	*Rallus obsoletus yumanensis*	18,000
Fish		
Desert pupfish	*Cyprinodon macularius*	200
Mammals		
Desert bighorn sheep	*Ovis canadensis nelsoni*	Intermountain: 621,000; Mountain: 1,106,000
California leaf-nosed bat	*Macrotus californicus*	1,749,000
Pallid bat	*Antrozous pallidus*	2,768,000
Townsend's big-eared bat	*Corynorhinus townsendii*	2,202,000

Table III.7-47
Focus and Planning Species' Modeled Habitat within the Cadiz Valley and Chocolate Mountains Ecoregion Subarea of the DRECP

Common Name	Scientific Name	Acres
Planning Species		
Mammals		
Burro deer	*Odocoileus hemionus eremicus*	809,000
Desert kit fox	*Vulpes macrotis arsipus*	1,971,000

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

Imperial Borrego Valley Ecoregion Subarea

The Focus and Planning Species' modeled habitat within the Imperial Borrego Valley ecoregion subarea are detailed in Table III.7-48. Maps of the Focus and Planning Species' modeled habitat are provided in the Baseline Biology Report (Appendix Q).

Table III.7-48
Focus and Planning Species' Modeled Habitat within the Imperial Borrego Valley Ecoregion Subarea of the DRECP

Common Name	Scientific Name	Acres
Focus Species		
Amphibians/Reptiles		
Agassiz's desert tortoise	*Gopherus agassizii*	175,400
Flat-tailed horned lizard	*Phrynosoma mcallii*	916,000
Birds		
Bendire's thrasher	*Toxostoma bendirei*	92,000
Burrowing owl	*Athene cunicularia*	1,445,000
California black rail	*Laterallus jamaicensis coturniculus*	166,000
Gila woodpecker	*Melanerpes uropygialis*	79,000
Golden eagle – foraging	*Aquila chrysaetos*	279,000
Golden eagle – nesting	*Aquila chrysaetos*	98,000
Greater sandhill crane	*Grus canadensis tabida*	527,000
Least Bell's vireo	*Vireo bellii pusillus*	9,000
Mountain plover	*Charadrius montanus*	503,000
Swainson's hawk	*Buteo swainsoni*	346,000
Tricolored blackbird	*Agelaius tricolor*	7,000
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	12,000

Table III.7-48
Focus and Planning Species' Modeled Habitat within the Imperial Borrego Valley Ecoregion Subarea of the DRECP

Common Name	Scientific Name	Acres
Willow flycatcher (including southwestern)	*Empidonax traillii* (including *extimus*)	143,000
Yuma Ridgway's rail	*Rallus obsoletus yumanensis*	30,000
Fish		
Desert pupfish	*Cyprinodon macularius*	8,000
Mammals		
Desert bighorn sheep	*Ovis canadensis nelsoni*	Intermountain: 30,000; Mountain: 243,000
California leaf-nosed bat	*Macrotus californicus*	834,000
Pallid bat	*Antrozous pallidus*	1,390,000
Townsend's big-eared bat	*Corynorhinus townsendii*	1,343,000
Plants		
Little San Bernardino Mountains linanthus	*Linanthus maculatus*	5,000
Planning Species		
Mammals		
Burro deer	*Odocoileus hemionus eremicus*	212,000
Desert kit fox	*Vulpes macrotis arsipus*	1,273,000

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

Kingston and Funeral Mountains Ecoregion Subarea

The Focus and Planning Species' modeled habitat within the Kingston and Funeral Mountains ecoregion subarea are detailed in Table III.7-49. Maps of the Focus and Planning Species' modeled habitat are provided in the Baseline Biology Report (Appendix Q).

Table III.7-49
Focus and Planning Species' Modeled Habitat within the Kingston and Funeral Mountains Ecoregion Subarea of the DRECP

Common Name	Scientific Name	Acres
Focus Species		
Amphibians/Reptiles		
Agassiz's desert tortoise	*Gopherus agassizii*	1,552,000
Mojave fringe-toed lizard	*Uma scoparia*	17,000
Birds		
Bendire's thrasher	*Toxostoma bendirei*	491,000
Burrowing owl	*Athene cunicularia*	123,000
Golden eagle - foraging	*Aquila chrysaetos*	1,186,000
Golden eagle - nesting	*Aquila chrysaetos*	852,000
Least Bell's vireo	*Vireo bellii pusillus*	50,000
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	5,000
Fish		
Mohave tui chub	*Siphateles (Gila) bicolor mohavensis*	70
Mammals		
Desert bighorn sheep	*Ovis canadensis nelsoni*	Intermountain: 475,000; Mountain: 1,386,000
California leaf-nosed bat	*Macrotus californicus*	1,063,000
Pallid bat	*Antrozous pallidus*	2,369,000
Townsend's big-eared bat	*Corynorhinus townsendii*	2,215,000
Planning Species		
Mammals		
Desert kit fox	*Vulpes macrotis arsipus*	1,557,000

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

Mojave and Silurian Valley Ecoregion Subarea

The Focus and Planning Species' modeled habitat within the Mojave and Silurian Valley ecoregion subarea are detailed in Table III.7-50. Maps of the Focus and Planning Species' modeled habitat are provided in the Baseline Biology Report (Appendix Q).

Table III.7-50
Focus and Planning Species' Modeled Habitat within the Mojave and Silurian Valley Ecoregion Subarea of the DRECP

Common Name	Scientific Name	Acres
Focus Species		
Amphibians/Reptiles		
Agassiz's desert tortoise	*Gopherus agassizii*	2,006,000
Mojave fringe-toed lizard	*Uma scoparia*	222,000
Birds		
Bendire's thrasher	*Toxostoma bendirei*	66,000
Burrowing owl	*Athene cunicularia*	510,000
Golden eagle – foraging	*Aquila chrysaetos*	1,236,000
Golden eagle – nesting	*Aquila chrysaetos*	545,000
Least Bell's vireo	*Vireo bellii pusillus*	12,000
Swainson's hawk	*Buteo swainsoni*	100
Tricolored blackbird	*Agelaius tricolor*	14,000
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	16,000
Willow flycatcher (including southwestern)	*Empidonax traillii* (including *extimus*)	30
Fish		
Mohave tui chub	*Siphateles (Gila) bicolor mohavensis*	100
Mammals		
Desert bighorn sheep	*Ovis canadensis nelsoni*	Intermountain: 1,310,000; Mountain: 735,000
California leaf-nosed bat	*Macrotus californicus*	1,832,000
Mohave ground squirrel	*Xerospermophilus mohavensis*	733,000
Pallid bat	*Antrozous pallidus*	2,438,000
Townsend's big-eared bat	*Corynorhinus townsendii*	2,185,000
Plants		
Barstow woolly sunflower	*Eriophyllum mohavense*	80
Desert cymopterus	*Cymopterus deserticola*	300
Mojave monkeyflower	*Mimulus mohavensis*	20,000
Planning Species		
Mammals		
Desert kit fox	*Vulpes macrotis arsipus*	1,938,000

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

Owens River Valley Ecoregion Subarea

The Focus and Planning Species' modeled habitats within the Owens River Valley ecoregion subarea are detailed in Table III.7-51. Maps of the Focus and Planning Species' modeled habitat are provided in the Baseline Biology Report (Appendix Q).

Table III.7-51
Focus and Planning Species' Modeled Habitat within the Owens River Valley Ecoregion Subarea of the DRECP

Common Name	Scientific Name	Acres
Focus Species		
Amphibians/Reptiles		
Agassiz's desert tortoise	*Gopherus agassizii*	79,500
Birds		
Bendire's thrasher	*Toxostoma bendirei*	700
Burrowing owl	*Athene cunicularia*	160,000
California condor	*Gymnogyps californianus*	6,000
Golden eagle – foraging	*Aquila chrysaetos*	218,000
Golden eagle – nesting	*Aquila chrysaetos*	23,000
Least Bell's vireo	*Vireo bellii pusillus*	16,000
Swainson's hawk	*Buteo swainsoni*	222,000
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	58,000
Willow flycatcher (including southwestern)	*Empidonax traillii* (including *extimus*)	72,000
Fish		
Owens pupfish	*Cyprinodon radiosus*	18,000
Owens tui chub	*Siphateles (Gila) bicolor snyderi*	17,000
Mammals		
Desert bighorn sheep	*Ovis canadensis nelsoni*	Intermountain: 20,000; Mountain: 80,000
Mohave ground squirrel	*Xerospermophilus mohavensis*	243,000
Pallid bat	*Antrozous pallidus*	332,000
Townsend's big-eared bat	*Corynorhinus townsendii*	352,000
Plants		
Alkali mariposa-lily	*Calochortus striatus*	20
Mojave tarplant	*Deinandra mohavensis*	11,000
Owens Valley checkerbloom	*Sidalcea covillei*	147,000

Table III.7-51
Focus and Planning Species' Modeled Habitat within the Owens River Valley Ecoregion Subarea of the DRECP

Common Name	Scientific Name	Acres
Planning Species		
Mammals		
Desert kit fox	*Vulpes macrotis arsipus*	89,000

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

Panamint Death Valley Ecoregion Subarea

The Focus and Planning Species' modeled habitats within the Panamint Death Valley ecoregion subarea are detailed in Table III.7-52. Maps of the Focus and Planning Species' modeled habitat are provided in the Baseline Biology Report (Appendix Q).

Table III.7-52
Focus and Planning Species' Modeled Habitat within the Panamint Death Valley Ecoregion Subarea of the DRECP

Common Name	Scientific Name	Acres
Focus Species		
Amphibians/Reptiles		
Agassiz's desert tortoise	*Gopherus agassizii*	612,900
Mojave fringe-toed lizard	*Uma scoparia*	7,000
Birds		
Bendire's thrasher	*Toxostoma bendirei*	100
Burrowing owl	*Athene cunicularia*	134,000
California condor	*Gymnogyps californianus*	4,000
Golden eagle – foraging	*Aquila chrysaetos*	730,000
Golden eagle – nesting	*Aquila chrysaetos*	588,000
Least Bell's vireo	*Vireo bellii pusillus*	900
Swainson's hawk	*Buteo swainsoni*	90
Tricolored blackbird	*Agelaius tricolor*	70
Mammals		
Desert bighorn sheep	*Ovis canadensis nelsoni*	Intermountain: 843,000; Mountain: 994,000

Table III.7-52
Focus and Planning Species' Modeled Habitat within the Panamint Death Valley Ecoregion Subarea of the DRECP

Common Name	Scientific Name	Acres
California leaf-nosed bat	*Macrotus californicus*	1,000
Mohave ground squirrel	*Xerospermophilus mohavensis*	27,9000
Pallid bat	*Antrozous pallidus*	1,674,000
Townsend's big-eared bat	*Corynorhinus townsendii*	1,597,000
Plants		
Mojave monkeyflower	*Mimulus mohavensis*	2,000
Planning Species		
Mammals		
Desert kit fox	*Vulpes macrotis arsipus*	863,000

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

Pinto Lucerne Valley and Eastern Slopes Ecoregion Subarea

The Focus and Planning Species' modeled habitats within the Pinto Lucerne Valley and Eastern Slopes ecoregion subarea are detailed in Table III.7-53. Maps of the Focus and Planning Species' modeled habitat are provided in the Baseline Biology Report (Appendix Q).

Table III.7-53
Focus and Planning Species' Modeled Habitat within the Pinto Lucerne Valley and Eastern Slopes Ecoregion Subarea of the DRECP

Common Name	Scientific Name	Acres
Focus Species		
Amphibians/Reptiles		
Agassiz's desert tortoise	*Gopherus agassizii*	1,541,800
Mojave fringe-toed lizard	*Uma scoparia*	64,000
Birds		
Bendire's thrasher	*Toxostoma bendirei*	491,000
Burrowing owl	*Athene cunicularia*	789,000
California condor	*Gymnogyps californianus*	2,000
Golden eagle – foraging	*Aquila chrysaetos*	684,000
Golden eagle – nesting	*Aquila chrysaetos*	877,000
Least Bell's vireo	*Vireo bellii pusillus*	59,000
Swainson's hawk	*Buteo swainsoni*	300

Table III.7-53
Focus and Planning Species' Modeled Habitat within the Pinto Lucerne Valley and Eastern Slopes Ecoregion Subarea of the DRECP

Common Name	Scientific Name	Acres
Tricolored blackbird	*Agelaius tricolor*	18,000
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	2,000
Willow flycatcher (including southwestern)	*Empidonax traillii* (including *extimus*)	10,000
Mammals		
Desert bighorn sheep	*Ovis canadensis nelsoni*	Intermountain: 518,000; Mountain: 1,408,000
California leaf-nosed bat	*Macrotus californicus*	506,000
Mohave ground squirrel	*Xerospermophilus mohavensis*	70,000
Pallid bat	*Antrozous pallidus*	2,184,000
Townsend's big-eared bat	*Corynorhinus townsendii*	2,105,000
Plants		
Alkali mariposa-lily	*Calochortus striatus*	4,000
Little San Bernardino Mountains linanthus	*Linanthus maculatus*	340,000
Mojave monkeyflower	*Mimulus mohavensis*	128,000
Mojave tarplant	*Deinandra mohavensis*	1,000
Parish's daisy	*Erigeron parishii*	188,000
Triple-ribbed milk-vetch	*Astragalus tricarinatus*	8,000
Planning Species		
Mammals		
Burro deer	*Odocoileus hemionus eremicus*	109,000
Desert kit fox	*Vulpes macrotis arsipus*	1,259,000

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

Piute Valley and Sacramento Mountains Ecoregion Subarea

The Focus and Planning Species' modeled habitats within the Piute Valley and Sacramento Mountains ecoregion subarea are detailed in Table III.7-54. Maps of the Focus and Planning Species' modeled habitat are provided in the Baseline Biology Report (Appendix Q).

Table III.7-54
Focus and Planning Species' Modeled Habitat within the Piute Valley and Sacramento Mountains Ecoregion Subarea of the DRECP

Common Name	Scientific Name	Acres
Focus Species		
Amphibians/Reptiles		
Agassiz's desert tortoise	*Gopherus agassizii*	815,300
Mojave fringe-toed lizard	*Uma scoparia*	200
Birds		
Bendire's thrasher	*Toxostoma bendirei*	138,000
Burrowing owl	*Athene cunicularia*	13,000
California black rail	*Laterallus jamaicensis coturniculus*	14,000
Gila woodpecker	*Melanerpes uropygialis*	2,000
Golden eagle – foraging	*Aquila chrysaetos*	492,000
Golden eagle – nesting	*Aquila chrysaetos*	354,000
Greater sandhill crane	*Grus canadensis tabida*	4,000
Least Bell's vireo	*Vireo bellii pusillus*	7,000
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	19,000
Willow flycatcher (including southwestern)	*Empidonax traillii* (including *extimus*)	5,000
Yuma Ridgway's rail	*Rallus obsoletus yumanensis*	10,000
Mammals		
Desert bighorn sheep	*Ovis canadensis nelsoni*	Intermountain: 128,000; Mountain: 589,000
California leaf-nosed bat	*Macrotus californicus*	470,000
Pallid bat	*Antrozous pallidus*	1,076,000
Townsend's big-eared bat	*Corynorhinus townsendii*	522,000
Planning Species		
Mammals		
Burro deer	*Odocoileus hemionus eremicus*	18,000
Desert kit fox	*Vulpes macrotis arsipus*	649,000

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

Providence and Bullion Mountains Ecoregion Subarea

The Focus and Planning Species' modeled habitats within the Providence and Bullion Mountains ecoregion subarea are detailed in Table III.7-55. Maps of the Focus and Planning Species' modeled habitat are provided in the Baseline Biology Report (Appendix Q).

Table III.7-55
Focus and Planning Species' Modeled Habitat within the Providence and Bullion Mountains Ecoregion Subarea of the DRECP

Common Name	Scientific Name	Acres
Focus Species		
Amphibians/Reptiles		
Agassiz's desert tortoise	*Gopherus agassizii*	1,773,000
Mojave fringe-toed lizard	*Uma scoparia*	218,000
Birds		
Bendire's thrasher	*Toxostoma bendirei*	742,000
Burrowing owl	*Athene cunicularia*	212,000
Golden eagle – foraging	*Aquila chrysaetos*	1,099,000
Golden eagle – nesting	*Aquila chrysaetos*	732,000
Greater sandhill crane	*Grus canadensis tabida*	<10
Least Bell's vireo	*Vireo bellii pusillus*	16,000
Tricolored blackbird	*Agelaius tricolor*	100
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	3,000
Mammals		
Desert bighorn sheep	*Ovis canadensis nelsoni*	Intermountain: 541,000; Mountain: 1,310,000
California leaf-nosed bat	*Macrotus californicus*	1,862,000
Pallid bat	*Antrozous pallidus*	2,543,000
Townsend's big-eared bat	*Corynorhinus townsendii*	2,291,000
Plants		
Mojave monkeyflower	*Mimulus mohavensis*	<10
Planning Species		
Mammals		
Burro deer	*Odocoileus hemionus eremicus*	2,000
Desert kit fox	*Vulpes macrotis arsipus*	1,811,000

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

West Mojave and Eastern Slopes Ecoregion Subarea

The Focus and Planning Species' modeled habitats within the West Mojave and Eastern Slopes ecoregion subarea are detailed in Table III.7-56. Maps of the Focus and Planning Species' modeled habitat are provided in the Baseline Biology Report (Appendix Q).

Table III.7-56
Focus and Planning Species' Modeled Habitat within the West Mojave and Eastern Slopes Ecoregion Subarea of the DRECP

Common Name	Scientific Name	Acres
Focus Species		
Amphibians/Reptiles		
Agassiz's desert tortoise	*Gopherus agassizii*	2,145,000
Mojave fringe-toed lizard	*Uma scoparia*	6,000
Tehachapi slender salamander	*Batrachoseps stebbinsi*	48,000
Birds		
Bendire's thrasher	*Toxostoma bendirei*	133,000
Burrowing owl	*Athene cunicularia*	2,636,000
California condor	*Gymnogyps californianus*	1,276,000
Golden eagle - foraging	*Aquila chrysaetos*	875,000
Golden eagle - nesting	*Aquila chrysaetos*	508,000
Least Bell's vireo	*Vireo bellii pusillus*	58,000
Mountain plover	*Charadrius montanus*	215,000
Swainson's hawk	*Buteo swainsoni*	1,046,000
Tricolored blackbird	*Agelaius tricolor*	239,000
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	20,000
Willow flycatcher (including southwestern)	*Empidonax traillii* (including *extimus*)	83,000
Yuma Ridgway's rail	*Rallus obsoletus yumanensis*	70
Fish		
Mohave tui chub	*Siphateles (Gila) bicolor mohavensis*	100
Mammals		
Desert bighorn sheep	*Ovis canadensis nelsoni*	Intermountain: 407,000; Mountain: 123,000
California leaf-nosed bat	*Macrotus californicus*	3,000
Mohave ground squirrel	*Xerospermophilus mohavensis*	2,176,000
Pallid bat	*Antrozous pallidus*	2,875,000
Townsend's big-eared bat	*Corynorhinus townsendii*	2,639,000

Table III.7-56
Focus and Planning Species' Modeled Habitat within the West Mojave and Eastern Slopes Ecoregion Subarea of the DRECP

Common Name	Scientific Name	Acres
Plants		
Alkali mariposa-lily	*Calochortus striatus*	185,000
Bakersfield cactus	*Opuntia basilaris* var. *treleasei*	279,000
Barstow woolly sunflower	*Eriophyllum mohavense*	187,000
Desert cymopterus	*Cymopterus deserticola*	345,000
Mojave monkeyflower	*Mimulus mohavensis*	27,000
Mojave tarplant	*Deinandra mohavensis*	259,000
Owens Valley checkerbloom	*Sidalcea covillei*	1,000
Parish's daisy	*Erigeron parishii*	200
Planning Species		
Mammals		
Desert kit fox	*Vulpes macrotis arsipus*	2,532,000

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

III.7.6.3 Other Bureau of Land Management Special-Status Species Addressed in the Land Use Plan Amendment

Other BLM Special-Status Species not considered Focus or Planning Species are addressed in Section III.7.6.4.

III.7.6.4 Non-Focus BLM Special-Status Species in the Land Use Plan Amendment Decision Area

In addition to the Focus Species discussed above, hundreds of other special-status species were evaluated. The species included in Table III.7-57 are special-status species that are not considered Proposed LUPA Focus Species and are hereafter referred to as the "Non-Focus BLM Special-Status Species." Regionally special-status species presented in Table III.7-57 include those with significant occurrence or range overlap with the LUPA Decision Area and those designated as BLM Special-Status Species.

Federally and/or state-listed Non-Focus Species will continue to be regulated under the ESA and CESA (Section III.7.1). Take of listed species can be authorized separately from this Proposed LUPA under Section 7 or Section 10 of the federal ESA, and take exceptions under Section 2081 of the Fish and Game Code. Impacts to Non-Focus BLM Special-Status Species can also be addressed through the DRECP and Permit Amendment process described in

Volume II, Chapter II.3, Section II.3.3. In addition, most nesting native birds are afforded protection under the federal MBTA and California Fish and Game Code Section 3503.

In addition to the name and special-status ranking, Table III.7-57 identifies the vegetation types typically associated with each species' preferred habitat. These associated vegetation types were derived using the actual vegetation types mapped (as described in Section III.7.4 and identified on Figures III.7-3 through III.7-13) at the locations of the species' occurrences (CDFW 2013a), habitat requirements for the species as described in the Baseline Biology Report (Appendix Q), and the California Wildlife Habitat Relationships species' descriptions and range maps (Zeiner et al 1988–1990).

Table III.7-57
Non-Focus BLM Special-Status Species

Common Name	Scientific Name	Associated General Community Groupings and Vegetation Types/Land Covers[1]	Federal Status[2]	State Status[3]
Invertebrates				
Amargosa springsnail	*Pyrgulopsis amargosae*	**Riparian and wetland communities** (springs)	BLM[4]	CSC
Shoshone Cave whip-scorpion	*Hubbardia shoshonensis*	Varied (subterranean)	BLM	None
Amphibians/Reptiles				
Arroyo toad	*Anaxyrus (Bufo) californicus*	**Riparian and wetland communities**: Southwestern North American riparian, flooded and swamp forest/scrubland **Grassland communities**: California annual and perennial grassland **Scrub and chaparral communities**: Californian xeric chaparral, intermountain dry shrubland and grassland, lower bajada and fan Mojavean–Sonoran desert scrub **Dune/rocky, barren, and unvegetated communities**: North American warm desert dunes and sand flats **Forest/woodland communities**: Western Great Basin montane conifer woodland **Land covers**: Developed, rural	FE	CSC
Banded gila monster	*Heloderma suspectum cinctum*	**Dune/rocky, barren, and unvegetated communities**: North American warm desert bedrock cliff and outcrop **Scrub and chaparral communities**: Intermountain dry shrubland and grassland, lower bajada and fan Mojavean–Sonoran desert scrub	BLM	CSC

Table III.7-57
Non-Focus BLM Special-Status Species

Common Name	Scientific Name	Associated General Community Groupings and Vegetation Types/Land Covers[1]	Federal Status[2]	State Status[3]
Barefoot gecko	*Coleonyx switaki*	**Dune/rocky, barren, and unvegetated communities**: North American warm semi-desert cliff, scree, and other rock	BLM	ST
Coast horned lizard	*Phrynosoma blainvillii*	**Dune/rocky, barren, and unvegetated communities**: North American warm desert bedrock cliff and outcrop **Grassland communities**: California annual and perennial grassland **Forest/woodland communities**: Californian montane conifer forest, western Great Basin montane conifer woodland **Riparian/wetland communities**: Southwestern North American riparian, flooded and swamp forest/scrubland, southwestern North American riparian evergreen and deciduous woodland **Scrub and chaparral communities**: Californian xeric chaparral, central and south coastal Californian coastal sage scrub, intermountain dry shrubland and grassland, intermountain west mesic tall sagebrush shrubland and steppe, lower bajada and fan Mojavean–Sonoran desert scrub, shadscale–saltbush cool semi-desert scrub	BLM	CSC
Coachella fringe-toed lizard	*Uma inornata*	**Dune/rocky, barren, and unvegetated communities**: North American warm desert bedrock cliff and outcrop	FE	SC
Colorado Desert fringe-toed lizard	*Uma notata*	**Dune/rocky, barren, and unvegetated communities**: North American warm desert dunes and sand flats, North American warm desert bedrock cliff and outcrop (within sandy areas) **Scrub and chaparral communities**: Lower bajada and fan Mojavean–Sonoran desert scrub (within sandy areas), Madrean warm semi-desert wash woodland/scrub (within sandy areas)	BLM	CSC
Couch's spadefoot	*Scaphiopus couchii*	**Riparian and wetland communities** **Scrub and chaparral communities**	BLM	CSC
Sierra Madre yellow-legged frog	*Rana muscosa*	**Riparian and wetland communities**	FE	SC, CSC
Western pond turtle	*Emys marmorata*	**Riparian and wetland communities**	BLM	CSC

Table III.7-57
Non-Focus BLM Special-Status Species

Common Name	Scientific Name	Associated General Community Groupings and Vegetation Types/Land Covers[1]	Federal Status[2]	State Status[3]
Birds				
Arizona Bell's vireo	*Vireo bellii arizonae*	**Scrub and chaparral communities**: Arizonan upland Sonoran desert scrub, lower bajada and fan Mojavean–Sonoran desert scrub, Madrean warm semi-desert wash woodland/scrub **Dune/rocky, barren, and unvegetated communities**: North American warm desert bedrock cliff and outcrop **Riparian and wetland communities**: Open water, southwestern North American riparian, flooded and swamp forest/scrubland, southwestern North American introduced riparian scrub **Land cover:** Agriculture, rural	BLM	SE
Bald eagle	*Haliaeetus leucocephalus*	**Dune/rocky, barren, and unvegetated communities**: North American warm desert bedrock cliff and outcrop, North American warm desert dunes and sand flats **Riparian and wetland communities**: Open water **Scrub and chaparral communities**: Lower bajada and fan Mojavean–Sonoran desert scrub, Madrean warm semi-desert wash woodland/scrub **Land cover**: Rural	Eagle Act	SE
Bank swallow	*Riparia riparia*	**Dune/rocky, barren, and unvegetated communities**: Desert playa, North American warm desert bedrock cliff and outcrop, North American warm desert dunes and sand flats **Grassland communities**: Mediterranean California naturalized annual and perennial grassland **Riparian and wetland communities**: Arid West freshwater emergent marsh, Southwestern North American riparian, flooded and swamp forest/scrubland, western North American freshwater marsh, open water **Scrub and chaparral communities**: Lower bajada and fan Mojavean–Sonoran desert scrub, shadscale–saltbush cool semi-desert scrub **Land cover**: Agriculture	BLM	ST

Table III.7-57
Non-Focus BLM Special-Status Species

Common Name	Scientific Name	Associated General Community Groupings and Vegetation Types/Land Covers[1]	Federal Status[2]	State Status[3]
Elf owl	*Micrathene whitneyi*	**Riparian and wetland communities**: Open water, southwestern North American riparian, flooded and swamp forest/scrubland, southwestern North American introduced riparian scrub **Scrub and chaparral communities**: Arizonan upland Sonoran desert scrub, lower bajada and fan Mojavean–Sonoran desert scrub, shadscale–saltbush cool semi-desert scrub **Dune/rocky, barren, and unvegetated communities**: North American warm desert bedrock cliff and outcrop **Land cover**: Agriculture, rural, developed	BLM, BCC	SE
Gilded flicker	*Colaptes chrysoides*	**Scrub and chaparral communities**: Arizonan upland Sonoran desert scrub, lower bajada and fan Mojavean–Sonoran desert scrub, Mojave and Great Basin upper bajada and toeslope (including Joshua tree woodland) **Riparian and wetland communities**: Southwestern North American riparian, flooded and swamp forest/scrubland, Sonoran–Coloradan semi-desert wash woodland/scrub	BLM, BCC	SE
Gray vireo	*Vireo vicinior*	**Forest/woodland communities**: Californian montane conifer forest, western Great Basin montane conifer woodland **Scrub and chaparral communities**: Californian xeric chaparral, intermountain dry shrubland and grassland, intermountain west mesic tall sagebrush shrubland and steppe, lower bajada and fan Mojavean–Sonoran desert scrub	BLM, BCC	CSC
Inyo California towhee	*Melozone* [=*Pipilo*] *crissalis eremophilus*	**Riparian and wetland communities**: Southwestern North American riparian, flooded and swamp forest/scrubland	FT, BLM*	SE
Le Conte's thrasher	*Toxostoma lecontei*	**Dune/rocky, barren, and unvegetated communities**: Desert playa, North American warm desert bedrock cliff and outcrop, North American warm desert dunes and sand flats **Scrub and chaparral communities**: Californian xeric chaparral, central and south coastal Californian coastal sage scrub, intermontane	BLM	CSC

Table III.7-57
Non-Focus BLM Special-Status Species

Common Name	Scientific Name	Associated General Community Groupings and Vegetation Types/Land Covers[1]	Federal Status[2]	State Status[3]
		deep or well-drained soil scrub, intermountain dry shrubland and grassland, intermountain west mesic tall sagebrush shrubland and steppe, lower bajada and fan Mojavean–Sonoran desert scrub, Madrean warm semi-desert wash woodland/scrub, Mojave and Great Basin upper bajada and toeslope, shadscale–saltbush cool semi-desert scrub		
Lucy's warbler	*Oreothlypis luciae*	**Riparian and wetland communities** **Scrub and chaparral communities**: Lower bajada and fan Mojavean–Sonoran desert scrub	BLM BCC	CSC
Western snowy plover	*Charadrius alexandrinus nivosus*	**LUPA Decision Area outside DRECP Boundary**	FT	CSC
White-tailed kite	*Elanus leucurus*	**Grassland communities** **Riparian and wetland communities** **Land cover**: Agriculture	BLM	FP
Fish				
Amargosa Canyon speckled dace	*Rhinichthys osculus* ssp. [1]	**Riparian and wetland communities**	BLM[4]	CSC
Amargosa pupfish	*Cyprinodon nevadensis amargosae*	**Riparian and wetland communities**	BLM[4]	CSC
Mammals				
Amargosa vole	*Microtus californicus scirpensis*	**Grassland communities** **Riparian and wetland communities** **Dune/rocky, barren, and unvegetated communities**: Desert playa, North American warm desert bedrock cliff and outcrop	FE, BLM[4]	SE
Bighorn sheep (Peninsular Ranges distinct population segment [DPS])	*Ovis canadensis nelsoni*	**Dune/rocky, barren, and unvegetated communities**: North American warm desert bedrock cliff and outcrop **Forest/woodland communities**: Western Great Basin montane conifer woodland **Scrub and chaparral communities**: Intermountain dry shrubland and grassland, lower bajada and fan Mojavean–Sonoran desert scrub, Madrean warm semi-desert wash woodland/ scrub	FE, BLM	ST, FP

Table III.7-57
Non-Focus BLM Special-Status Species

Common Name	Scientific Name	Associated General Community Groupings and Vegetation Types/Land Covers[1]	Federal Status[2]	State Status[3]
Cave myotis	*Myotis velifer*	**Dune/rocky, barren, and unvegetated communities**: North American warm desert bedrock cliff and outcrop **Riparian and wetland communities** **Scrub and chaparral communities**: Lower bajada and fan Mojavean–Sonoran desert scrub	BLM	CSC
Fringed myotis	*Myotis thysanodes*	**Forest/woodland communities** **Riparian and wetland communities** **Scrub and chaparral communities**: Avoids desert	BLM	None
Long-eared myotis	*Myotis evotis*	**Forest/woodland communities** **Riparian and wetland communities** **Scrub and chaparral communities**: Avoids desert	BLM	None
Nelson's bighorn sheep	*Ovis canadensis nelsoni*	**Dune/rocky, barren, and unvegetated communities**: North American warm desert bedrock cliff and outcrop **Forest/woodland communities**: Western Great Basin montane conifer woodland **Scrub and chaparral communities**: Intermountain dry shrubland and grassland, lower bajada and fan Mojavean–Sonoran desert scrub, Madrean warm semi-desert wash woodland/ scrub	BLM	FP
Owen's valley vole	*Microtus californicus vallicola*	**Riparian and wetland communities**	BLM	CSC
Spotted bat	*Euderma maculatum*	**Dune/rocky, barren, and unvegetated communities**: Desert playa **Forest/woodland communities** **Grassland communities**: Mediterranean California naturalized annual and perennial grassland **Riparian and wetland communities**: Southwestern North American riparian, flooded and swamp forest/scrubland **Scrub and chaparral communities**: Intermountain dry shrubland and grassland, lower bajada and fan Mojavean–Sonoran desert scrub, shadscale–saltbush cool semi-desert scrub	BLM	CSC

Table III.7-57
Non-Focus BLM Special-Status Species

Common Name	Scientific Name	Associated General Community Groupings and Vegetation Types/Land Covers[1]	Federal Status[2]	State Status[3]
Western mastiff bat	*Eumops perotis californicus*	**Dune/rocky, barren, and unvegetated communities** **Forest/woodland communities** **Riparian and wetland communities** **Scrub and chaparral communities** **Land cover**: Rural	BLM	CSC
Yellow-eared pocket mouse	*Perognathus parvus xanthonotus*	**Scrub and chaparral communities**: Intermountain dry shrubland and grassland	BLM	None
Yuma myotis	*Myotis yumanensis*	**Dune/rocky, barren, and unvegetated communities**: Desert playa, North American warm desert bedrock cliff and outcrop **Scrub and chaparral communities**: Lower bajada and fan Mojavean–Sonoran desert scrub	BLM	None
Plants				
Algodones Dunes sunflower	*Helianthus niveus* ssp. *tephrodes*	**Dune/rocky, barren, and unvegetated communities**: North American warm desert dunes and sand flats **Scrub and chaparral communities**: Lower bajada and fan Mojavean–Sonoran desert scrub	BLM	SE
Amargosa beardtongue	*Penstemon fruticiformis* var. *amargosae*	**Dune/rocky, barren, and unvegetated communities**: North American warm desert bedrock cliff and outcrop **Forest/woodland communities**: Pinyon–juniper woodland **Scrub and chaparral communities**: Lower bajada and fan Mojavean–Sonoran desert scrub, intermountain dry shrubland and grassland	BLM	(CRPR 1B.3)
Amargosa nitrophila	*Nitrophila mohavensis*	**Dune/rocky, barren, and unvegetated communities**: North American warm desert bedrock cliff and outcrop, desert playa	FE	SE (CRPR 1B.2)
Ash Meadows buckwheat	*Eriogonum contiguum*	**CDCA Area outside DRECP Boundary**	BLM	(CRPR 2.3)

Table III.7-57
Non-Focus BLM Special-Status Species

Common Name	Scientific Name	Associated General Community Groupings and Vegetation Types/Land Covers[1]	Federal Status[2]	State Status[3]
Ash Meadows gumplant	*Grindelia fraxinipratensis (=Grindelia fraxino-pratensis)*	**Dune/rocky, barren, and unvegetated communities**: Desert playa **Riparian and wetland communities**: Arid West freshwater emergent marsh **Scrub and chaparral communities**: Lower bajada and fan Mojavean–Sonoran desert scrub, Sonoran–Coloradan semi-desert wash woodland/scrub	FT	(CRPR 1B.2)
Chaparral sand-verbena	*Abronia villosa* var. *aurita*	**Forest/woodland communities**: Californian–Vancouverian montane and foothill forest **Land cover:** Developed	BLM	(CRPR 1B.1)
Charlotte's phacelia	*Phacelia nashiana*	**Dune/rocky, barren, and unvegetated communities**: North American warm desert bedrock cliff and outcrop **Forest/woodland communities**: Western Great Basin montane conifer woodland **Scrub and chaparral communities**: Central and south coastal Californian coastal sage scrub, intermountain dry shrubland and grassland, lower bajada and fan Mojavean–Sonoran desert scrub, Mojavean semi-desert wash scrub	BLM	(CRPR 1B.2)
Coachella Valley milk-vetch	*Astragalus lentiginosus* var. *coachellae*	**Dune/rocky, barren, and unvegetated communities**: North American warm desert bedrock cliff and outcrop **Scrub and chaparral communities**: Lower bajada and fan Mojavean–Sonoran desert scrub	FE	(CRPR 1B.2)
Creamy blazing star	*Mentzelia tridentata*	**Dune/rocky, barren, and unvegetated communities**: North American warm desert bedrock cliff and outcrop **Forest/woodland communities**: Western Great Basin montane conifer woodland **Scrub and chaparral communities**: Intermountain dry shrubland and grassland, lower bajada and fan Mojavean–Sonoran desert scrub	BLM	(CRPR 1B.3)
Cushenbury buckwheat	*Eriogonum ovalifolium* var. *vineum*	**Forest/woodland communities:** Californian montane conifer forest, western Great Basin montane conifer woodland **Grassland communities:** California annual and perennial grassland **Scrub and chaparral communities:** Intermountain dry shrubland and grassland **Land cover:** Rural	FE	(CRPR 1B.1)

Table III.7-57
Non-Focus BLM Special-Status Species

Common Name	Scientific Name	Associated General Community Groupings and Vegetation Types/Land Covers[1]	Federal Status[2]	State Status[3]
Cushenbury milk-vetch	*Astragalus albens*	**Grassland communities**: California annual and perennial grassland **Scrub and chaparral communities**: Intermountain dry shrubland and grassland, Mojave and Great Basin upper bajada and toeslope **Forest/woodland communities**: Western Great Basin montane conifer woodland	FE	(CRPR 1B.1)
Cushenbury oxytheca	*Acanthoscyphus parishii* var. *goodmaniana*	**Grassland communities**: California annual and perennial grassland **Scrub and chaparral communities**: Intermountain dry shrubland and grassland, Mojave and Great Basin upper bajada and toeslope **Forest/woodland communities**: Western Great Basin montane conifer woodland, Californian montane conifer forest	FE	(CRPR 1B.1)
Death Valley sandpaper-plant	*Petalonyx thurberi* ssp. *gilmanii*	**CDCA Area outside DRECP Boundary**	BLM	(CRPR 1B.2)
Dedecker's clover	*Trifolium dedeckerae*	**CDCA Area outside DRECP Boundary**	BLM	(CRPR 1B.3)
Flat-seeded spurge	*Chamaesyce platysperma*	**Scrub and chaparral communities**: Lower bajada and fan Mojavean–Sonoran desert scrub	BLM	(CRPR 1B.2)
Forked buckwheat	*Eriogonum bifurcatum*	**Dune/rocky, barren, and unvegetated communities**: North American warm desert bedrock cliff and outcrop **Scrub and chaparral communities**: Lower bajada and fan Mojavean–Sonoran desert scrub	BLM	(CRPR 1B.2)
Gilman's goldenbush	*Ericameria gilmanii*	**CDCA Area outside DRECP Boundary**	BLM	(CRPR 1B.3)
Hall's daisy	*Erigeron aequifolius*	**CDCA Area outside DRECP Boundary**	BLM	(CRPR 1B.3)
Harwood's eriastrum	*Eriastrum harwoodii*	**Dune/rocky, barren, and unvegetated communities**: Desert playa, North American warm desert dunes and sand flats **Scrub and chaparral communities**: Lower bajada and fan Mojavean–Sonoran desert scrub, Madrean warm semi-desert wash woodland/scrub	BLM	(CRPR 1B.2)

Table III.7-57
Non-Focus BLM Special-Status Species

Common Name	Scientific Name	Associated General Community Groupings and Vegetation Types/Land Covers[1]	Federal Status[2]	State Status[3]
Hoffmann's buckwheat	*Eriogonum hoffmannii* var. *hoffmannii*	**CDCA Area outside DRECP Boundary**	BLM	(CRPR 1B.3)
Inyo blazing star	*Mentzelia inyoensis*	**CDCA Area outside DRECP Boundary**	BLM	(CRPR 1B.3)
Inyo County star-tulip	*Calochortus excavatus*	**Dune/rocky, barren, and unvegetated communities**: North American warm desert bedrock cliff and outcrop **Riparian and wetland communities**: Arid West freshwater emergent marsh, southwestern North American riparian, flooded and swamp forest/scrubland, southwestern North American salt basin and high marsh **Scrub and chaparral communities**: Intermountain dry shrubland and grassland, intermountain west mesic tall sagebrush shrubland and steppe, shadscale–saltbush cool semi-desert scrub	BLM	(CRPR 1B.1)
Inyo rock daisy	*Perityle inyoensis*	**CDCA Area outside the DRECP Boundary**	BLM	(CRPR 1B.2)
Jacumba milk-vetch	*Astragalus douglasii* var. *perstrictus*	**CDCA Area outside DRECP Boundary**	BLM	(CRPR 1B.2)
July gold	*Dedeckera eurekensis*	**CDCA Area outside DRECP Boundary**	BLM	(CRPR 1B.3)
Kelso Creek monkeyflower	*Mimulus shevockii*	**Scrub and chaparral communities**: Intermountain dry shrubland and grassland, intermountain west mesic tall sagebrush shrubland and steppe	BLM	(CRPR 1B.2)
Kern buckwheat	*Eriogonum kennedyi* var. *pinicola*	**Forest/woodland communities**: Californian montane conifer forest, Western Great Basin montane conifer woodland **Scrub and chaparral communities**: Intermountain west mesic tall sagebrush shrubland and steppe	BLM	(CRPR 1B.1)
Kern River evening-primrose	*Camissonia integrifolia*	**CDCA Area outside DRECP Boundary**	BLM	(CRPR 1B.3)

Table III.7-57
Non-Focus BLM Special-Status Species

Common Name	Scientific Name	Associated General Community Groupings and Vegetation Types/Land Covers[1]	Federal Status[2]	State Status[3]
Lane Mountain milk-vetch	*Astragalus jaegerianus*	**Dune/rocky, barren, and unvegetated communities:** North American warm desert bedrock cliff and outcrop **Scrub and chaparral communities:** Intermountain dry shrubland and grassland, lower bajada and fan Mojavean–Sonoran desert scrub, shadscale–saltbush cool semi-desert scrub	FE	(CRPR 1B.1)
Latimer's woodland-gilia	*Saltugilia latimeri*	**CDCA Area outside DRECP Boundary**	BLM	(CRPR 1B.2)
Mountain Springs bush lupine	*Lupinus excubitus* var. *medius*	**CDCA Area outside DRECP Boundary**	BLM	(CRPR 1B.3)
Muir's tarplant	*Carlquistia muirii*	**CDCA Area outside DRECP Boundary**	BLM	(CRPR 1B.3)
Munz's cholla	*Cylindropuntia munzii*	**Scrub and chaparral communities**: Lower bajada and fan Mojavean–Sonoran desert scrub	BLM	(CRPR 1B.3)
Nine Mile Canyon phacelia	*Phacelia novenmillensis*	**CDCA Area outside DRECP Boundary**	BLM	(CRPR 1B.2)
Orcutt's linanthus	*Linanthus orcuttii*	**CDCA Area outside DRECP Boundary**	BLM	(CRPR 1B.3)
Orcutt's woody-aster	*Xylorhiza orcuttii*	**Dune/rocky, barren, and unvegetated communities**: North American warm desert bedrock cliff and outcrop **Scrub and chaparral communities**: Lower bajada and fan Mojavean–Sonoran desert scrub	BLM	(CRPR 1B.2)
Orocopia sage	*Salvia greatae*	**Dune/rocky, barren, and unvegetated communities**: North American warm desert bedrock cliff and outcrop **Scrub and chaparral communities**: Madrean warm semi-desert wash woodland/scrub, shadscale–saltbush cool semi-desert scrub	BLM	(CRPR 1B.3)
Owens Peak lomatium	*Lomatium shevockii*	**CDCA Area outside DRECP Boundary**	BLM	(CRPR 1B.3)

Table III.7-57
Non-Focus BLM Special-Status Species

Common Name	Scientific Name	Associated General Community Groupings and Vegetation Types/Land Covers[1]	Federal Status[2]	State Status[3]
Pale-yellow layia	*Layia heterotricha*	**Scrub and chaparral communities**: Central and south coastal California coastal sage scrub; lower bajada and fan Mojavean–Sonoran desert scrub, intermountain dry shrubland and grassland; intermountain west mesic tall sagebrush **Forest/woodland communities**: Californian broadleaf forest and woodland **Land cover**: Developed	BLM	(CRPR 1B.1)
Palmer's mariposa-lily	*Calochortus palmeri* var. *palmeri*	**CDCA Area outside DRECP Boundary**	BLM	(CRPR 1B.2)
Panamint daisy	*Enceliopsis covillei*	**CDCA Area outside DRECP Boundary**	BLM	(CRPR 1B.2)
Panamint dudleya	*Dudleya saxosa* ssp. *saxosa*	**CDCA Area outside DRECP Boundary**	BLM	(CRPR 1B.3)
Panamint Mountains buckwheat	*Eriogonum microthecum* var. *panamintense*	**CDCA Area outside DRECP Boundary**	BLM	(CRPR 1B.3)
Panamint Mountains lupine	*Lupinus magnificus* var. *magnificus*	**CDCA Area outside DRECP Boundary**	BLM	(CRPR 1B.2)
Parish's alkali grass	*Puccinellia parishii*	**Riparian and wetland communities:** Desert alkali springs and seeps **Land cover**: Rural	BLM	(CRPR 1B.1)
Parish's phacelia	*Phacelia parishii*	**Dune/rocky, barren, and unvegetated communities:** Desert playa, North American warm desert bedrock cliff and outcrop **Scrub and chaparral communities:** Lower bajada and fan Mojavean–Sonoran desert scrub, shadscale–saltbush cool semi-desert scrub **Land cover:** Developed	BLM	(CRPR 1B.1)
Parry's spineflower	*Chorizanthe parryi* var. *parryi*	**Land cover**: Developed	BLM	(CRPR 1B.1)

Table III.7-57
Non-Focus BLM Special-Status Species

Common Name	Scientific Name	Associated General Community Groupings and Vegetation Types/Land Covers[1]	Federal Status[2]	State Status[3]
Pierson's milk-vetch	*Astragalus magdalenae* var. *peirsonii*	**Dune/rocky, barren, and unvegetated communities**: North American warm desert dunes and sand flats **Scrub and chaparral communities**: Lower bajada and fan Mojavean–Sonoran desert scrub	FT	SE
Pinyon Mesa buckwheat	*Eriogonum mensicola*	**CDCA Area outside DRECP Boundary**	BLM	(CRPR 1B.3)
Piute Mountains jewel-flower	*Streptanthus cordatus* var. *piutensis*	**Forest/woodland communities**: Californian montane conifer forest **Scrub and chaparral communities**: Intermountain west mesic tall sagebrush shrubland and steppe	BLM	(CRPR 1B.2)
Recurved larkspur	*Delphinium recurvatum*	**Grassland communities** **Scrub and chaparral communities** **Forest/woodland communities** **Land cover**: Developed	BLM	(CRPR 1B.2)
Red Rock poppy	*Eschscholzia minutiflora* ssp. *twisselmannii*	**Dune/rocky, barren, and unvegetated communities**: North American warm desert bedrock cliff and outcrop **Scrub and chaparral communities**: Lower bajada and fan Mojavean–Sonoran desert scrub, Mojavean semi-desert wash scrub, shadscale–saltbush cool semi-desert scrub	BLM	(CRPR 1B.2)
Red Rock tarplant	*Deinandra arida*	**Dune/rocky, barren, and unvegetated communities**: North American warm desert bedrock cliff and outcrop **Scrub and chaparral communities**: Lower bajada and fan Mojavean–Sonoran desert scrub, Mojavean semi-desert wash scrub, shadscale–saltbush cool semi-desert scrub	BLM	(CRPR 1B.2)
Robison's monardella	*Monardella robisonii*	**Dune/rocky, barren, and unvegetated communities**: North American warm desert bedrock cliff and outcrop **Scrub and chaparral communities**: Intermountain dry shrubland and grassland, lower bajada and fan Mojavean–Sonoran desert scrub	BLM	(CRPR 1B.3)

Table III.7-57
Non-Focus BLM Special-Status Species

Common Name	Scientific Name	Associated General Community Groupings and Vegetation Types/Land Covers[1]	Federal Status[2]	State Status[3]
Rusby's desert-mallow	*Sphaeralcea rusbyi* var. *eremicola*	**Dune/rocky, barren, and unvegetated communities**: North American warm desert bedrock cliff and outcrop **Scrub and chaparral communities**: Intermountain dry shrubland and grassland, lower bajada and fan Mojavean–Sonoran desert scrub, shadscale–saltbush cool semi-desert scrub	BLM	(CRPR 1B.2)
San Bernardino milk-vetch	*Astragalus bernardinus*	**CDCA Area outside DRECP Boundary**	BLM	(CRPR 1B.2)
San Bernardino aster	*Symphyotrichum defoliatum*	**Forest/woodland communities**: Californian–Vancouverian montane and foothill forest	BLM	(CRPR 1B.2)
San Bernardino Mountains dudleya	*Dudleya abramsii* ssp. *affinis*	**Forest/woodland communities**: Western Great Basin montane conifer woodland	BLM	(CRPR 1B.2)
Sand food	*Pholisma sonorae*	**Dune/rocky, barren, and unvegetated communities**: North American warm desert dunes and sand flats **Scrub and chaparral communities**: Lower bajada and fan Mojavean–Sonoran desert scrub	BLM	(CRPR 1B.2)
San Diego button-celery	*Eryngium aristulatum* var. *parishii*	**CDCA Area outside DRECP Boundary**	FE	SE, (CRPR 1B.1)
Sanicle cymopterus	*Cymopterus ripleyi* var. *saniculoides*	**CDCA Area outside DRECP Boundary**	BLM	(CRPR 1B.2)
Scrub lotus	*Acmispon argyraeus* var. *multicaulis*	**Dune/rocky, barren, and unvegetated communities**: North American warm semi-desert cliff, scree, and other rock vegetation **Scrub and chaparral communities**: Intermountain dry shrubland and grassland Mojavean–Sonoran desert scrub, Western North America tall sage shrubland and steppe **Forest/woodland communities**: Intermountain basins pinyon–juniper woodland	BLM	(CRPR 1B.3)

Table III.7-57
Non-Focus BLM Special-Status Species

Common Name	Scientific Name	Associated General Community Groupings and Vegetation Types/Land Covers[1]	Federal Status[2]	State Status[3]
Short-joint beavertail cactus	*Opuntia basilaris* var. *brachyclada*	**Grassland communities**: California annual and perennial grassland **Forest/woodland communities**: Californian broadleaf forest and woodland, Californian montane conifer forest, Western Great Basin montane conifer woodland **Scrub and chaparral communities**: Californian xeric chaparral, central and south coastal Californian coastal sage scrub, intermontane seral shrubland, intermountain dry shrubland and grassland **Land cover:** Agriculture	BLM	(CRPR 1B.2)
Southern jewel-flower	*Streptanthus campestris*	**CDCA Area outside DRECP Boundary**	BLM	(CRPR 1B.3)
Spanish needle onion	*Allium shevockii*	**Forest/woodland communities**: Californian montane conifer forest, Western Great Basin montane conifer woodland **Scrub and chaparral communities**: Intermountain dry shrubland and grassland, intermountain west mesic tall sagebrush shrubland and steppe	BLM	(CRPR 1B.3)
Stephen's beardtongue	*Penstemon stephensii*	**Dune/rocky, barren, and unvegetated communities**: North American warm semi-desert cliff, scree, and other rock vegetation **Scrub and chaparral communities**: Intermountain dry shrubland and grassland, Mojavean–Sonoran desert scrub **Forest/woodland communities**: Intermountain basins pinyon–juniper woodland **Land cover**: Developed	BLM	(CRPR 1B.3)
Sweet-smelling monardella	*Monardella beneolens*	**CDCA Area outside DRECP Boundary**	BLM	(CRPR 1B.3)
Thorne's buckwheat	*Eriogonum thornei*	**Scrub and chaparral communities**: Intermountain west mesic tall sagebrush shrubland and steppe **Dune/rocky, barren, and unvegetated communities**: North American warm desert bedrock cliff and outcrop	BLM	SE (CRPR 1B.2)

Table III.7-57
Non-Focus BLM Special-Status Species

Common Name	Scientific Name	Associated General Community Groupings and Vegetation Types/Land Covers[1]	Federal Status[2]	State Status[3]
Tracy's eriastrum	*Eriastrum tracyi*	**Forest/woodland communities**: Californian broadleaf forest and woodland, Californian montane conifer forest, western Great Basin montane conifer woodland **Scrub and chaparral communities**: Californian xeric chaparral, intermountain dry shrubland and grassland, intermountain west mesic tall sagebrush shrubland and steppe	BLM	(CRPR 1B.2)
White-bracted spineflower	*Chorizanthe xanti* var. *leucotheca*	**CDCA Area outside DRECP Boundary**	BLM	(CRPR 1B.2)
White-margined beardtongue	*Penstemon albomarginatus*	**Dune/rocky, barren, and unvegetated communities:** North American warm desert dunes and sand flats, North American warm desert bedrock cliff and outcrop **Scrub and chaparral communities:** Lower bajada and fan Mojavean–Sonoran desert scrub **Land cover:** Rural	BLM	(CRPR 1B.1)
Wildrose Canyon buckwheat	*Eriogonum eremicola*	**CDCA Area outside DRECP Boundary**	BLM	(CRPR 1B.3)
Wiggins' croton	*Croton wigginsii*	**Dune/rocky, barren, and unvegetated communities**: North American warm desert dunes and sand flats **Scrub and chaparral communities**: Lower bajada and fan Mojavean–Sonoran desert scrub, Madrean warm semi-desert wash woodland/scrub	BLM	(CRPR 1B.2)

Sources: CDFW 2013a and CBI 2013.

1 Bold text refers to General Community Grouping followed by vegetation types in nonbolded text, consistent with Table III.7-11.

2 Federal Status – FE: Federally Endangered; FT: Federally Threatened; FD: Federally Delisted; FS: USFS Sensitive; BLM: Bureau Land Management Sensitive; BCC: USFWS Bird of Conservation Concern; Eagle Act: Bald and Golden Eagle Protection Act.

3 State Status – SE: California Endangered; ST: California Threatened; SC: California Candidate for listing; CSC: California Species of Special Concern; FP: Fully Protected; WBWG: Western Bat Working Group species. California Rare Plant Rank (CRPR, formerly known as the CNPS List) – CRPR 1B: Considered rare, threatened, or endangered in California and elsewhere; CRPR 2: Considered rare, threatened, or endangered in California, but more common elsewhere; CRPR 3: Plants which need more information; CRPR 4: Limited distribution – a Watch List.

4 Indicates BLM Special-Status Species that have associated Conservation and Management Actions (CMAs), detailed in Volume II, Chapter II.3, Section II.3.4.2.

5 Caves, seeps/springs, and dunes, by virtue of the specialized environmental conditions, support several endemic invertebrate species that have adapted to and are restricted to these micro-habitats. The available data evaluated was not species-specific enough to include and itemize each of these species. None of these species are listed by the state or

federal agencies as sensitive. Species encompassed by the general groupings are as follows: Dunes–Algodones sand jewel beetle (*Lepismadora algondones*), Andrew's dune scarab beetle (*Pseudocotalpa andrewsi*), Carlson's dune beetle (*Anomala carlsoni*), Hardy's dune beetle (*Anomala hardyorum*), Kelso Jerusalem cricket (*Ammopelmatus kelsoensis*); Seeps/Springs–Amargosa naucorid bug (*Pelocoris shoshone*), badwater snail (*Assiminea infima*), Death Valley agabus diving beetle (*Agabus rumpii*), Death Valley June beetle (Polyphylla barbata), Grapevine Springs elongate tryonia (*Tryonia margae*), Grapevine Springs squat tryonia (*Tryonia rowlandsi*), Nevares Spring naucorid bug (*Ambrysus funebris*), and Cave–Kokoweef Crystal Cave harvestman (*Texella kokoweef*).

Several of the Non-Focus BLM Special-Status Species found in the LUPA Decision Area are federally listed as threatened or endangered and have designated critical habitat present. Table III.7-58 details these species, including the total acres of critical habitat on BLM-managed lands in the LUPA Decision Area.

Table III.7-58
Designated Critical Habitat Within the LUPA Decision Area for Non-Focus BLM Special-Status Species

Common Name	Scientific Name	Federal Status[1]	State Status[2]	Critical Habitat within the LUPA Decision Area (BLM acres)
Amphibians				
Arroyo toad	*Anaxyrus (Bufo) californicus*	FE	CSC	30
Mammals				
Amargosa vole	*Microtus californicus scirpensis*	FE, BLM[3]	SE	4,000
Bighorn sheep (Peninsular Ranges DPS)	*Ovis canadensis nelsoni*	FE, BLM	ST, FP	7,000
Plants				
Amargosa nitrophila	*Nitrophila mohavensis*	FE	SE, (CRPR 1B.2)	1,000
Ash Meadows gumplant	*Grindelia fraxinipratensis*	FT	(CRPR 1B.2)	300
Cushenbury buckwheat	*Eriogonum ovalifolium* var. *vineum*	FE	(CRPR 1B.1)	400
Cushenbury milk-vetch	*Astragalus albens*	FE	(CRPR 1B.1)	800
Cushenbury oxytheca	*Acanthoscyphus parishii* var. *goodmaniana*	FE	(CRPR 1B.1)	80
Lane Mountain milk-vetch	*Astragalus jaegerianus*	FE	(CRPR 1B.1)	10,000
Pierson's milk-vetch	*Astragalus magdalenae* var. *peirsonii*	FT	SE	12,000

Sources: CDFW 2013a; CBI 2013.

1 Federal Status – FE: Federally Endangered; FT: Federally Threatened; FD: Federally Delisted; FS: USFS Sensitive; BLM: Bureau Land Management Sensitive; BCC: USFWS Bird of Conservation Concern; Eagle Act: Bald and Golden Eagle Protection Act.

2 State Status – SE: California Endangered; ST: California Threatened; SC: California Candidate for listing; CSC: California Species of Special Concern; FP: Fully Protected; WBWG: Western Bat Working Group species. California Rare Plant Rank

(CRPR, formerly known as the CNPS List) – CRPR 1B: Considered rare, threatened, or endangered in California and elsewhere; CRPR 2: Considered rare, threatened, or endangered in California, but more common elsewhere.

[3] Indicates BLM Special-Status Species that have associated CMAs, detailed in Volume II, Chapter II.3, Section II.3.4.2.

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total in the table.

III.7.6.4.1 Summary of Non-Focus BLM Special-Species

The following sections identify Non-Focus BLM Special-Status Species known to occur in each ecoregion subarea as well as the CDCA Area outside the DRECP boundary. The species included are based on the list of Non-Focus BLM Special-Status Species identified in Table III.7-57 for the LUPA Decision Area.

Cadiz Valley and Chocolate Mountains Ecoregion Subarea

Table III.7-59 lists the Non-Focus BLM Special-Status Species within the Cadiz Valley and Chocolate Mountains ecoregion subarea.

Table III.7-59
Non-Focus BLM Special-Status Species Within the Cadiz Valley and Chocolate Mountains Ecoregion Subarea

Common Name	Scientific Name	Federal Status[1]	State Status[2]
Amphibians/Reptiles			
Banded gila monster	*Heloderma suspectum cinctum*	BLM	CSC
Couch's spadefoot	*Scaphiopus couchii*	BLM	CSC
Birds			
Arizona Bell's vireo	*Vireo bellii arizonae*	BLM	SE
Bald eagle	*Haliaeetus leucocephalus*	Eagle Act	SE
Elf owl	*Micrathene whitneyi*	BLM, BCC	SE
Gilded flicker	*Colaptes chrysoides*	BLM, BCC	SE
Le Conte's thrasher	*Toxostoma lecontei*	BLM	CSC
Lucy's warbler	*Oreothlypis luciae*	BCC	CSC
Mammals			
Bighorn sheep (Peninsular Ranges DPS)	*Ovis canadensis nelson*	FE, BLM	ST, FP
Cave myotis	*Myotis velifer*	BLM	CSC
Spotted bat	*Euderma maculatum*	BLM	CSC
Western mastiff bat	*Eumops perotis*	BLM	CSC
Yuma myotis	*Myotis yumanensis*	BLM	None

Table III.7-59
Non-Focus BLM Special-Status Species Within the Cadiz Valley and Chocolate Mountains Ecoregion Subarea

Common Name	Scientific Name	Federal Status[1]	State Status[2]
Plants			
Coachella Valley milk-vetch	*Astragalus lentiginosus* var. *coachellae*	FE	(CRPR 1B.2)
Harwood's eriastrum	*Eriastrum harwoodii*	BLM	(CRPR 1B.2)
Orocopia sage	*Salvia greatae*	BLM	(CRPR 1B.3)

Sources: CDFW 2013a; CBI 2013.
[1] Federal Status – FE: Federally Endangered; FT: Federally Threatened; FD: Federally Delisted; FS: USFS Sensitive; BLM: Bureau Land Management Sensitive; BCC: USFWS Bird of Conservation Concern; Eagle Act: Bald and Golden Eagle Protection Act.
[2] State Status – SE: California Endangered; ST: California Threatened; SC: California Candidate for listing; CSC: California Species of Special Concern; FP: Fully Protected; WBWG: Western Bat Working Group species. California Rare Plant Rank (CRPR, formerly known as the CNPS List) – CRPR 1B: Considered rare, threatened, or endangered in California and elsewhere; CRPR 2: Considered rare, threatened, or endangered in California, but more common elsewhere.

Imperial Borrego Valley Ecoregion Subarea

Table III.7-60 lists the Non-Focus BLM Special-Status Species within the Imperial Borrego Valley ecoregion subarea.

Table III.7-60
Non-Focus BLM Special-Status Species Within the Imperial Borrego Valley Ecoregion Subarea

Common Name	Scientific Name	Federal Status[1]	State Status[2]
Amphibians/Reptiles			
Banded gila monster	*Heloderma suspectum cinctum*	BLM	CSC
Barefoot gecko	*Coleonyx switaki*	BLM	ST
Colorado desert fringe-toed lizard	*Uma notata*	BLM	CSC
Couch's spadefoot	*Scaphiopus couchii*	BLM	CSC
Birds			
Arizona Bell's vireo	*Vireo bellii arizonae*	BLM	SE
Bald eagle	*Haliaeetus leucocephalus*	Eagle Act	SE
Bank swallow	*Riparia riparia*	BLM	ST
Elf owl	*Micrathene whitneyi*	BLM, BCC	SE
Gilded flicker	*Colaptes chrysoides*	BLM, BCC	SE
Le Conte's thrasher	*Toxostoma lecontei*	BLM	CSC
Lucy's warbler	*Oreothlypis luciae*	BLM, BCC	CSC
White-tailed kite	*Elanus leucurus*	BLM	FP

Table III.7-60
Non-Focus BLM Special-Status Species Within the Imperial Borrego Valley Ecoregion Subarea

Common Name	Scientific Name	Federal Status[1]	State Status[2]
Mammals			
Bighorn sheep (Peninsular Ranges DPS)	*Ovis canadensis nelson*	FE, BLM	ST, FP
Cave myotis	*Myotis velifer*	BLM	CSC
Spotted bat	*Euderma maculatum*	BLM	CSC
Western mastiff bat	*Eumops perotis*	BLM	CSC
Yuma myotis	*Myotis yumanensis*	BLM	None
Plants			
Algodones Dunes sunflower	*Helianthus niveus* ssp. *tephrodes*	BLM	SE
Chaparral sand-verbena	*Abronia villosa* var. *aurita*	BLM	(CRPR 1B.1)
Harwood's eriastrum	*Eriastrum harwoodii*	BLM	(CRPR 1B.2)
Orcutt's woody-aster	*Xylorhiza orcuttii*	BLM	(CRPR 1B.2)
Orocopia sage	*Salvia greatae*	BLM	(CRPR 1B.3)
Pierson's milk-vetch	*Astragalus magdalenae* var. *peirsonii*	FT	SE
Sand food	*Pholisma sonorae*	BLM	(CRPR 1B.2)
Wiggins' croton	*Croton wigginsii*	BLM	(CRPR 1B.2)

Sources: CDFW 2013a; CBI 2013.

[1] Federal Status – FE: Federally Endangered; FT: Federally Threatened; FD: Federally Delisted; FS: USFS Sensitive; BLM: Bureau Land Management Sensitive; BCC: USFWS Bird of Conservation Concern; Eagle Act: Bald and Golden Eagle Protection Act.

[2] State Status – SE: California Endangered; ST: California Threatened; SC: California Candidate for listing; CSC: California Species of Special Concern; FP: Fully Protected; WBWG: Western Bat Working Group species. California Rare Plant Rank (CRPR, formerly known as the CNPS List) – CRPR 1B: Considered rare, threatened, or endangered in California and elsewhere; CRPR 2: Considered rare, threatened, or endangered in California, but more common elsewhere.

Kingston and Funeral Mountains Ecoregion Subarea

Table III.7-61 lists the Non-Focus BLM Special-Status Species within the Kingston and Funeral Mountains ecoregion subarea.

Table III.7-61
Non-Focus BLM Special-Status Species Within the Kingston and Funeral Mountains Ecoregion Subarea

Common Name	Scientific Name	Federal Status[1]	State Status[2]
Invertebrates			
Amargosa springsnail	*Pyrgulopsis amargosae*	BLM[3]	CSC
Amphibians/Reptiles			
Banded gila monster	*Heloderma suspectum cinctum*	BLM	CSC
Birds			
Ferruginous hawk	*Buteo regalis*	BLM	WL
Gray vireo	*Vireo vicinior*	BLM, BCC	CSC
Le Conte's thrasher	*Toxostoma lecontei*	BLM	CSC
Fish			
Amargosa speckled dace	*Rhinichthys osculus* ssp.	BLM[3]	CSC
Amargosa pupfish	*Cyprinodon nevadensis amargosae*	BLM[3]	CSC
Mammals			
Amargosa vole	*Microtus californicus scirpensis*	FE, BLM[3]	SE
Bighorn sheep (Peninsular Ranges DPS)	*Ovis canadensis nelson*	FE, BLM	ST, FP
Fringed myotis	*Myotis thysanodes*	BLM	None
Spotted bat	*Euderma maculatum*	BLM	CSC
Western mastiff bat	*Eumops perotis*	BLM	CSC
Plants			
Amargosa beardtongue	*Penstemon fruticiformis* var. *amargosae*	BLM	(CRPR 1B.3)
Amargosa nitrophila	*Nitrophila mohavensis*	FE	SE, (CRPR 1B.2)
Ash Meadows gumplant	*Grindelia fraxino-pratensis*	FT	(CRPR 1B.2)
Forked buckwheat	*Eriogonum bifurcatum*	BLM	(CRPR 1B.2)
Harwood's eriastrum	*Eriastrum harwoodii*	BLM	(CRPR 1B.2)
Parish's phacelia	*Phacelia parishii*	BLM	(CRPR 1B.1)
Rusby's desert-mallow	*Sphaeralcea rusbyi* var. *eremicola*	BLM	(CRPR 1B.2)
Scrub lotus	*Acmispon argyraeus* var. *multicaulis*	BLM	(CRPR 1B.3)
Stephen's beardtongue	*Penstemon stephensii*	BLM	(CRPR 1B.3)

Sources: CDFW 2013a; CBI 2013.

1 Federal Status – FE: Federally Endangered; FT: Federally Threatened; FD: Federally Delisted; FS: USFS Sensitive; BLM: Bureau Land Management Sensitive; BCC: USFWS Bird of Conservation Concern; Eagle Act: Bald and Golden Eagle Protection Act.

2 State Status – SE: California Endangered; ST: California Threatened; SC: California Candidate for listing; CSC: California Species of Special Concern; FP: Fully Protected; WBWG: Western Bat Working Group species. California Rare Plant Rank (CRPR, formerly known as the CNPS List) – CRPR 1B: Considered rare, threatened, or endangered in California and elsewhere; CRPR 2: Considered rare, threatened, or endangered in California, but more common elsewhere.

3 Indicates BLM species that have associated CMAs, detailed in Volume II, Chapter II.3, Section II.3.4.2.

Mojave and Silurian Valley Ecoregion Subarea

Table III.7-62 lists the Non-Focus BLM Special-Status Species within the Mojave and Silurian Valley ecoregion subarea.

Table III.7-62
Non-Focus BLM Special-Status Species Within the Mojave and Silurian Valley Ecoregion Subarea

Common Name	Scientific Name	Federal Status[1]	State Status[2]
Amphibians/Reptiles			
Western pond turtle	*Emys marmorata*	BLM	CSC
Birds			
Bank swallow	*Riparia riparia*	BLM	ST
Le Conte's thrasher	*Toxostoma lecontei*	BLM	CSC
Lucy's warbler	*Oreothlypis luciae*	BLM, BCC	CSC
Fish			
Amargosa speckled dace	*Rhinichthys osculus* ssp.	BLM[3]	CSC
Amargosa pupfish	*Cyprinodon nevadensis amargosae*	BLM[3]	CSC
Mammals			
Bighorn sheep (Peninsular Ranges DPS)	*Ovis canadensis nelson*	FE, BLM	ST, FP
Spotted bat	*Euderma maculatum*	BLM	CSC
Western mastiff bat	*Eumops perotis*	BLM	CSC
Plants			
Amargosa beardtongue	*Penstemon fruticiformis* var. *amargosae*	BLM	(CRPR 1B.3)
Amargosa nitrophila	*Nitrophila mohavensis*	FE	SE, (CRPR 1B.2)
Creamy blazing star	*Mentzelia tridentata*	BLM	(CRPR 1B.3)
Harwood's eriastrum	*Eriastrum harwoodii*	BLM	(CRPR 1B.2)
Lane Mountain milk-vetch	*Astragalus jaegerianus*	FE	(CRPR 1B.1)
Parish's phacelia	*Phacelia parishii*	BLM	(CRPR 1B.1)
Red Rock poppy	*Eschscholzia minutiflora* ssp. *twisselmannii*	BLM	(CRPR 1B.2)

Sources: CDFW 2013a; CBI 2013.

1 Federal Status – FE: Federally Endangered; FT: Federally Threatened; FD: Federally Delisted; FS: USFS Sensitive; BLM: Bureau Land Management Sensitive; BCC: USFWS Bird of Conservation Concern; Eagle Act: Bald and Golden Eagle Protection Act.

2 State Status – SE: California Endangered; ST: California Threatened; SC: California Candidate for listing; CSC: California Species of Special Concern; FP: Fully Protected; WBWG: Western Bat Working Group species. California Rare Plant Rank (CRPR, formerly known as the CNPS List) – CRPR 1B: Considered rare, threatened, or endangered in California and elsewhere; CRPR 2: Considered rare, threatened, or endangered in California, but more common elsewhere.

3 Indicates BLM species that have associated CMAs, detailed in Volume II, Chapter II.3, Section II.3.4.2.

Owens River Valley Ecoregion Subarea

Table III.7-63 lists the Non-Focus BLM Special-Status Species within the Owens River Valley ecoregion subarea.

Table III.7-63
Non-Focus BLM Special-Status Species Within the Owens River Valley Ecoregion Subarea

Common Name	Scientific Name	Federal Status[1]	State Status[2]
Birds			
Bald eagle	*Haliaeetus leucocephalus*	Eagle Act	SE
Bank swallow	*Riparia riparia*	BLM	ST
Le Conte's thrasher	*Toxostoma lecontei*	BLM	CSC
Mammals			
Long-eared myotis	*Myotis evotis*	BLM	None
Owen's valley vole	*Microtus californicus vallicola*	BLM	CSC
Spotted bat	*Euderma maculatum*	BLM	CSC
Western mastiff bat	*Eumops perotis californicus*	BLM	CSC
Yuma myotis	*Myotis yumanensis*	BLM	None
Plants			
Creamy blazing star	*Mentzelia tridentata*	BLM	(CRPR 1B.3)
Inyo County star-tulip	*Calochortus excavatus*	BLM	(CRPR 1B.1)

Sources: CDFW 2013a and CBI 2013.

1 Federal Status – FE: Federally Endangered; FT: Federally Threatened; FD: Federally Delisted; FS: USFS Sensitive; BLM: Bureau Land Management Sensitive; BCC: USFWS Bird of Conservation Concern; Eagle Act: Bald and Golden Eagle Protection Act.

2 State Status – SE: California Endangered; ST: California Threatened; SC: California Candidate for listing; CSC: California Species of Special Concern; FP: Fully Protected; WBWG: Western Bat Working Group species. California Rare Plant Rank (CRPR, formerly known as the CNPS List) – CRPR 1B: Considered rare, threatened, or endangered in California and elsewhere; CRPR 2: Considered rare, threatened, or endangered in California, but more common elsewhere.

Panamint Death Valley Ecoregion Subarea

Table III.7-64 lists the Non-Focus BLM Special-Status Species within the Panamint Death Valley ecoregion subarea.

Table III.7-64
Non-Focus BLM Special-Status Species Within the Panamint Death Valley Ecoregion Subarea

Common Name	Scientific Name	Federal Status[1]	State Status[2]
Birds			
Inyo California towhee	*Melozone* [=*Pipilo*] *crissalis eremophilus*	FT	SE
Le Conte's thrasher	*Toxostoma lecontei*	BLM	CSC
Fish			
Amargosa pupfish	*Cyprinodon nevadensis amargosae*	BLM[3]	CSC
Mammals			
Bighorn sheep (Peninsular Ranges DPS)	*Ovis canadensis nelson*	FE, BLM	ST, FP
Fringed myotis	*Myotis thysanodes*	BLM	None
Spotted bat	*Euderma maculatum*	BLM	CSC
Western mastiff bat	*Eumops perotis californicus*	BLM	CSC
Plants			
Amargosa beardtongue	*Penstemon fruticiformis* var. *amargosae*	BLM	(CRPR 1B.3)
Charlotte's phacelia	*Phacelia nashiana*	BLM	(CRPR 1B.2)
Red Rock poppy	*Eschscholzia minutiflora* ssp. *twisselmannii*	BLM	(CRPR 1B.2)
Red Rock tarplant	*Deinandra arida*	BLM	(CRPR 1B.2)

Sources: CDFW 2013a; CBI 2013.

1 Federal Status – FE: Federally Endangered; FT: Federally Threatened; FD: Federally Delisted; FS: USFS Sensitive; BLM: Bureau Land Management Sensitive; BCC: USFWS Bird of Conservation Concern; Eagle Act: Bald and Golden Eagle Protection Act.

2 State Status – SE: California Endangered; ST: California Threatened; SC: California Candidate for listing; CSC: California Species of Special Concern; FP: Fully Protected; WBWG: Western Bat Working Group species. California Rare Plant Rank (CRPR, formerly known as the CNPS List) – CRPR 1B: Considered rare, threatened, or endangered in California and elsewhere; CRPR 2: Considered rare, threatened, or endangered in California, but more common elsewhere.

3 Indicates BLM species that have associated CMAs, detailed in Volume II, Chapter II.3, Section II.3.4.2.

Pinto Lucerne Valley and Eastern Slopes Ecoregion Subarea

Table III.7-65 lists the Non-Focus BLM Special-Status Species within the Pinto Lucerne Valley and Eastern Slopes ecoregion subarea.

Table III.7-65
Non-Focus BLM Special-Status Species Within the
Pinto Lucerne Valley andEastern Slopes Ecoregion Subarea

Common Name	Scientific Name	Federal Status[1]	State Status[2]
Amphibians/Reptiles			
Arroyo toad	*Anaxyrus (Bufo) californicus*	FE	CSC
Coast horned lizard	*Phrynosoma blainvillii*	BLM	CSC
Birds			
Gray vireo	*Vireo vicinior*	BLM, BCC	CSC
Le Conte's thrasher	*Toxostoma lecontei*	BLM	CSC
Lucy's warbler	*Oreothlypis luciae*	BLM, BCC	CSC
Mammals			
Bighorn sheep (Peninsular Ranges DPS)	*Ovis canadensis nelson*	FE, BLM	ST, FP
Spotted bat	*Euderma maculatum*	BLM	CSC
Western mastiff bat	*Eumops perotis californicus*	BLM	CSC
Plants			
Creamy blazing star	*Mentzelia tridentata*	BLM	(CRPR 1B.3)
Cushenbury buckwheat	*Eriogonum ovalifolium* var. *vineum*	FE	(CRPR 1B.1)
Cushenbury milk-vetch	*Astragalus albens*	FE	(CRPR 1B.1)
Cushenbury oxytheca	*Acanthoscyphus parishii* var. *goodmaniana*	FE	(CRPR 1B.1)
Parish's phacelia	*Phacelia parishii*	BLM	(CRPR 1B.1)
Robison's monardella	*Monardella robisonii*	BLM	(CRPR 1B.3)
San Bernardino Mountains dudleya	*Dudleya abramsii* ssp. *affinis*	BLM	(CRPR 1B.2)

Sources: CDFW 2013a; CBI 2013.

[1] Federal Status – FE: Federally Endangered; FT: Federally Threatened; FD: Federally Delisted; FS: USFS Sensitive; BLM: Bureau Land Management Sensitive; BCC: USFWS Bird of Conservation Concern; Eagle Act: Bald and Golden Eagle Protection Act.

[2] State Status – SE: California Endangered; ST: California Threatened; SC: California Candidate for listing; CSC: California Species of Special Concern; FP: Fully Protected; WBWG: Western Bat Working Group species. California Rare Plant Rank (CRPR, formerly known as the CNPS List) – CRPR 1B: Considered rare, threatened, or endangered in California and elsewhere; CRPR 2: Considered rare, threatened, or endangered in California, but more common elsewhere.

Piute Valley and Sacramento Mountains Ecoregion Subarea

Table III.7-66 lists the Non-Focus BLM Special-Status Species within the Piute Valley and Sacramento Mountains ecoregion subarea.

Table III.7-66
Non-Focus BLM Special-Status Species Within the Piute Valley and Sacramento Mountains Ecoregion Subarea

Common Name	Scientific Name	Federal Status[1]	State Status[2]
Amphibians/Reptiles			
Couch's spadefoot	*Scaphiopus couchii*	BLM	CSC
Birds			
Arizona Bell's vireo	*Vireo bellii arizonae*	BLM	SE
Bald eagle	*Haliaeetus leucocephalus*	Eagle Act	SE
Elf owl	*Micrathene whitneyi*	BLM, BCC	SE
Gilded flicker	*Colaptes chrysoides*	BLM, BCC	SE
Le Conte's thrasher	*Toxostoma lecontei*	BLM	CSC
Lucy's warbler	*Oreothlypis luciae*	BLM, BCC	CSC
Mammals			
Bighorn sheep (Peninsular Ranges DPS)	*Ovis canadensis nelson*	FE, BLM	ST, FP
Spotted bat	*Euderma maculatum*	BLM	CSC
Western mastiff bat	*Eumops perotis californicus*	BLM	CSC
Yuma myotis	*Myotis yumanensis*	BLM	None

Sources: CDFW 2013a; CBI 2013.

1 Federal Status – FE: Federally Endangered; FT: Federally Threatened; FD: Federally Delisted; FS: USFS Sensitive; BLM: Bureau Land Management Sensitive; BCC: USFWS Bird of Conservation Concern; Eagle Act: Bald and Golden Eagle Protection Act.

2 State Status – SE: California Endangered; ST: California Threatened; SC: California Candidate for listing; CSC: California Species of Special Concern; FP: Fully Protected; WBWG: Western Bat Working Group species. California Rare Plant Rank (CRPR, formerly known as the CNPS List) – CRPR 1B: Considered rare, threatened, or endangered in California and elsewhere; CRPR 2: Considered rare, threatened, or endangered in California, but more common elsewhere.

Providence and Bullion Mountains Ecoregion Subarea

Table III.7-67 lists the Non-Focus BLM Special-Status Species within the Providence and Bullion Mountains ecoregion subarea.

Table III.7-67
Non-Focus BLM Special-Status Species Within the Providence and Bullion Mountains Ecoregion Subarea

Common Name	Scientific Name	Federal Status[1]	State Status[2]
Amphibians/Reptiles			
Banded gila monster	*Heloderma suspectum cinctum*	BLM	CSC
Coast horned lizard	*Phrynosoma blainvillii*	BLM	CSC

Table III.7-67
Non-Focus BLM Special-Status Species Within the Providence and Bullion Mountains Ecoregion Subarea

Common Name	Scientific Name	Federal Status[1]	State Status[2]
Birds			
Arizona Bell's vireo	*Vireo bellii arizonae*	BLM	SE
Bald eagle	*Haliaeetus leucocephalus*	Eagle Act	SE
Gray vireo	*Vireo vicinior*	BLM, BCC	CSC
Le Conte's thrasher	*Toxostoma lecontei*	BLM	CSC
Loggerhead shrike	*Lanius ludovicianus*	BCC	CSC
Lucy's warbler	*Oreothlypis luciae*	BLM, BCC	CSC
Mammals			
Bighorn sheep (Peninsular Ranges DPS)	*Ovis canadensis nelson*	FE, BLM	ST, FP
Spotted bat	*Euderma maculatum*	BLM	CSC
Western mastiff bat	*Eumops perotis californicus*	BLM	CSC
Plants			
Harwood's eriastrum	*Eriastrum harwoodii*	BLM	(CRPR 1B.2)
Robison's monardella	*Monardella robisonii*	BLM	(CRPR 1B.3)
Rusby's desert-mallow	*Sphaeralcea rusbyi* var. *eremicola*	BLM	(CRPR 1B.2)
Scrub lotus	*Acmispon argyraeus* var. *multicaulis*	BLM	(CRPR 1B.3)
Stephen's beardtongue	*Penstemon stephensii*	BLM	(CRPR 1B.3)
White-margined beardtongue	*Penstemon albomarginatus*	BLM	(CRPR 1B.1)

Sources: CDFW 2013a; CBI 2013.

[1] Federal Status – FE: Federally Endangered; FT: Federally Threatened; FD: Federally Delisted; FS: USFS Sensitive; BLM: Bureau Land Management Sensitive; BCC: USFWS Bird of Conservation Concern; Eagle Act: Bald and Golden Eagle Protection Act.

[2] State Status – SE: California Endangered; ST: California Threatened; SC: California Candidate for listing; CSC: California Species of Special Concern; FP: Fully Protected; WBWG: Western Bat Working Group species. California Rare Plant Rank (CRPR, formerly known as the CNPS List) – CRPR 1B: Considered rare, threatened, or endangered in California and elsewhere; CRPR 2: Considered rare, threatened, or endangered in California, but more common elsewhere.

West Mojave and Eastern Slopes Ecoregion Subarea

Table III.7-68 lists the Non-Focus BLM Special-Status Species within the West Mojave and Eastern Slopes ecoregion subarea.

Table III.7-68
Non-Focus BLM Special-Status Species Within the West Mojave and Eastern Slopes Ecoregion Subarea

Common Name	Scientific Name	Federal Status[1]	State Status[2]
Amphibians/Reptiles			
Arroyo toad	*Anaxyrus (Bufo) californicus*	FE	CSC
Coast horned lizard	*Phrynosoma blainvillii*	BLM	CSC
Western pond turtle	*Emys marmorata*	BLM	CSC
Birds			
Bald eagle	*Haliaeetus leucocephalus*	Eagle Act	SE
Bank swallow	*Riparia riparia*	BLM	ST
Gray vireo	*Vireo vicinior*	BLM, BCC	CSC
Le Conte's thrasher	*Toxostoma lecontei*	BLM	CSC
White-tailed kite	*Elanus leucurus*	BLM	FP
Mammals			
Spotted bat	*Euderma maculatum*	BLM	CSC
Western mastiff bat	*Eumops perotis californicus*	BLM	CSC
Yellow-eared pocket mouse	*Perognathus parvus xanthonotus*	BLM	None
Yuma myotis	*Myotis yumanensis*	BLM	None
Plants			
Chaparral sand-verbena	*Abronia villosa* var. *aurita*	BLM	(CRPR 1B.1)
Charlotte's phacelia	*Phacelia nashiana*	BLM	(CRPR 1B.2)
Creamy blazing star	*Mentzelia tridentata*	BLM	(CRPR 1B.3)
Kelso Creek monkeyflower	*Mimulus shevockii*	BLM	(CRPR 1B.2)
Kern buckwheat	*Eriogonum kennedyi* var. *pinicola*	BLM	(CRPR 1B.1)
Pale-yellow layia	*Layia heterotricha*	BLM	(CRPR 1B.1)
Parish's phacelia	*Phacelia parishii*	BLM	(CRPR 1B.1)
Red Rock poppy	*Eschscholzia minutiflora* ssp. *twisselmannii*	BLM	(CRPR 1B.2)
Red Rock tarplant	*Deinandra arida*	BLM	(CRPR 1B.2)
Short-joint beavertail cactus	*Opuntia basilaris* var. *brachyclada*	BLM	(CRPR 1B.2)
Spanish needle onion	*Allium shevockii*	BLM	(CRPR 1B.3)
Tracy's eriastrum	*Eriastrum tracyi*	BLM	(CRPR 1B.2)

Sources: CDFW 2013a; CBI 2013.

[1] Federal Status – FE: Federally Endangered; FT: Federally Threatened; FD: Federally Delisted; FS: USFS Sensitive; BLM: Bureau Land Management Sensitive; BCC: USFWS Bird of Conservation Concern; Eagle Act: Bald and Golden Eagle Protection Act.

[2] State Status – SE: California Endangered; ST: California Threatened; SC: California Candidate for listing; CSC: California Species of Special Concern; FP: Fully Protected; WBWG: Western Bat Working Group species. California Rare Plant Rank (CRPR, formerly known as the CNPS List) – CRPR 1B: Considered rare, threatened, or endangered in California and elsewhere; CRPR 2: Considered rare, threatened, or endangered in California, but more common elsewhere.

III.7.7 Invasive Species

III.7.7.1 Invasive Plant Species

Many of the land uses and human-caused impacts discussed in Section II.C.6 of the Draft Framework Conservation Strategy Report (Dudek and ICF 2011), and in Sections III.7.7.1 and III.7.7.2, promote the invasion of the desert native communities by non-native species through various mechanisms. Invasive plant species often compete with native plant species, leading to reduced native seedling germination and establishment, ultimately reducing the ability of vegetation to recover from disturbance or adapt to future climate change. Non-native plants were recorded in the California deserts as early as 1735 based on the presence of red-stemmed filaree (*Erodium cicutarium*) in woodrat middens near Death Valley. Botanist John Frémont made no notes of weeds or other nondesert plants during his travels in the desert regions in 1844, indicating that non-native species were not yet prevalent at the time (Pavlik 2008, as cited in Appendix Q). The early proliferation of non-native species was associated with agriculture and grazing, introducing non-natives such as tumbleweed (*Amaranthus albus*), Russian thistle (*Salsola tragus*), goosefoot (*Chenopodium murale*), and annual beard grass (*Polypogon monspeliensis*). Cheatgrass (*Bromus tectorum*), the seeds of which were commonly included in sources of wheat seed, was widespread in arid western lands by the 1930s (Pavlik 2008, as cited in Appendix Q).

There are currently about 232 taxa (10%) in the California deserts that are non-native (Baldwin et al. 2002, as cited in Appendix Q), of which about 27 are considered to be noxious weeds (Pavlik 2008, as cited in Appendix Q). Several types of modern human activities and land uses in the desert regions can promote invasions of non-native species, including (1) paved and dirt roads and OHV activities that disturb soils and create trails; (2) access roads and edges around utilities and mines; (3) linear disturbances such as transmission lines; (4) military activities; and (5) grazing. Common weeds and non-native grasses associated with these activities and land uses include Russian thistle, tumbleweed, Sahara mustard (*Brassica tournefortii*), London rocket (*Sisymbrium irio*), tansy mustard (*Descurainia* spp.), short-pod mustard (*Hirschfeldia incana*), fiddleneck (*Amsinckia tessellata*), red-stemmed filaree, Mediterranean grass (*Schismus barbatus* and *S. arabicus*), red brome (*Bromus madritensis* ssp. *rubens*), and cheatgrass (in the Great Basin Desert; Brooks and Lair 2009; Pavlik 2008, as cited in Appendix Q). Sahara mustard, in particular, has become one of the most invasive species in the desert landscape (Holt and Barrows 2013).

Invasive plant species are common in desert wetland and riparian communities; approximately 20% of the plant species along the Mojave River are non-native. Most of the invasive species in Mojave Desert wetlands and riparian habitats are low-growing herbaceous species and include sweet clovers (*Melilotus* spp.), pepperweed (*Lepidium*

spp.), dock (*Rumex* spp.), annual beard grass, sow thistle (*Sonchus* spp.), and Bermuda grass (Dudley 2009, as cited in Appendix Q).

One of the most pernicious and widespread invasive species in desert riparian systems is tamarisk (also called saltcedar), which invades arroyos and streambeds (Dudley 2009; Pavlik 2008, as cited in Appendix Q). It is common along the Mojave and Amargosa rivers in the Mojave Desert (Dudley 2009; Pavlik 2008, as cited in Appendix Q) and along the lower Colorado River (Pavlik 2008, as cited in Appendix Q), as well as other scattered areas throughout the LUPA Decision Area. Tamarisk is extremely drought-tolerant and has great reproductive capacity, providing it a competitive advantage over many native riparian species such as cottonwoods and willows.

III.7.7.2 Invasive Wildlife Species

Desert regions support several non-native wildlife species that can degrade native habitats, compete for resources with native species, and increase predation pressure on native species. These include American bullfrog, a voracious omnivore known to prey on native fish species; mosquitofish (*Gambusia affinis*), a predator of native fish species; house sparrow (*Passer domesticus*) and European starling (*Sturnus vulgaris*), which compete with native birds for nest cavities; Eurasian collared-dove; house mouse (*Mus musculus*); burros (*Equus asinus*); horses (*E. caballus*); and domestic dogs, which can be a substantial source of mortality in some areas for species like desert tortoise (Pavlik 2008, as cited in Appendix Q; Boarman 2006). The presence of the house mouse, for example, was negatively correlated with the number of Amargosa voles at study sites, but whether there is direct or indirect interspecific competition (e.g., for resources) or direct behavioral exclusion is unknown (McClenaghan and Montgomery 1998; USFWS 2009f). While the Eurasian collared-dove is rapidly spreading in North America, its potential impact on native species such as mourning dove is unknown (Romagosa 2012).

Other species native to North America but formerly absent from or uncommon in desert areas have increased in abundance in association with human activities and land uses. Predation by common ravens substantially impacts desert tortoise populations. Ravens take advantage of transmission structures for nesting, perching, resting, and foraging. Ravens are also attracted to garbage from landfills and trash containers; water from sewage ponds and municipal areas; and billboards, bridges, and buildings for nesting sites. Coyotes, which prey on adult tortoises, also are attracted to landfills where coyote populations can increase (USFWS 2011c).

Brown-headed cowbirds (*Molothrus ater*), which have increased in Southern California in association with grazing and other agricultural activities, is a brood parasite of several endangered species that nest in the lower Colorado River and other riparian habitats in the LUPA Decision Area. As a brood parasite, it lays eggs in the nests of other species, and its

young are tended by the parasitized species. Species often parasitized by the brown-headed cowbird include southwestern willow flycatcher, least Bell's vireo, and other neotropical migrants (Heath 2008, as cited in Appendix Q).

The red swamp crayfish (*Procambarus clarkii*) was introduced to California in the early 1900s from Louisiana. It is now found throughout Southern California in ponds, slower streams and creeks, and irrigation canals in both freshwater and brackish environments. Red swamp crayfish are omnivorous, feeding on aquatic plants, snails, insects, fish, and amphibian eggs and young (Martinez 2012), and have been found to reduce amphibian populations in California through direct predation, alteration of habitat through burrowing and sedimentation, and competition for habitat. Nonindigenous crayfishes have greatly altered North American lake and stream ecosystems, harmed fisheries, and extirpated many populations of native species (Hyatt n.d.). Within the LUPA Decsion Area, the red swamp crayfish is known to occur along the Colorado, Owens, and Mojave River valleys (USGS 2012), as well as within the irrigation conveyance systems in the agricultural complex of the Imperial Valley.

Argentine ants (*Linepithema humile*) typically invade ecosystems along the fringes of urban or agricultural development, where water is present in an otherwise arid environment. Argentine ants can displace native harvester ants, reducing the availability of native ant prey for horned lizards (Suarez and Case 2002).

Burros and horses trample soils and vegetation, particularly in wetland and riparian areas, and therefore are considered to be a threat to several of the special-status species in the LUPA Decision Area. Burros are identified threats to Sodaville milk-vetch (*Astragalus lentiginosus* var. *sesquimetralis*), and horses are identified threats to Amargosa niterwort (*Nitrophila mohavensis*) and Ash Meadows gumplant (*Grindelia fraxinipratensis*). Burros, originally introduced to the western hemisphere in the fifteenth century by Christopher Columbus, were brought as pack animals to the southwestern United States during the California gold rush in the mid-1800s (GISD 2012). Feral burro populations in the California desert have deleterious and potentially irreversible impacts on native flora and fauna (GISD 2012; Stubbs 1999). Damage has been documented in plant communities, soils, wildlife, and water quality, including habitat for native desert species that are threatened or endangered, such as the desert tortoise and bighorn sheep (GISD 2012; Stubbs 1999). At water sources, burros often compact the soil, foul the water with fecal material, and create water turbidity (Weaver 1974). Feral burros outcompete native species for forage and are destructive to plants, often pulling them out by the roots; some plants have been seriously depleted as much as 4 miles from water (Hansen and Fodor 1971, as cited in Weaver 1974). Within the LUPA Decision Area, burros are found primarily in Imperial and San Bernardino counties along, and to the west of, the Colorado River Valley, and in Inyo County. The National Park Service, however, has

conducted burro removal from their lands in the Mojave Desert, with the goal of removing approximately 1,300 burros from the Mojave National Preserve between 1998 and 2001 (Stubbs 1999). BLM also established a burro removal program under their West Mojave Plan to reduce impacts of burros on their land (BLM 2005). Trampling by horses also degrades desert grasslands, scrub, and chaparral.

III.7.8 Landscape Habitat Linkages and Wildlife Movement Corridors

Natural environments are typically heterogeneous and form a mosaic across a landscape. Terrestrial wildlife species occupy favorable patches within a landscape matrix and may move between these patches through less favorable habitats. Wildlife corridors are linear landscape elements that provide for species movement and dispersal between two or more habitats. However, terrestrial wildlife species are more likely to follow pathways between habitat patches that contain elements of their preferred habitat (Rosenberg et al. 1997, as cited in Appendix Q). Disjunct habitat patches used by terrestrial wildlife to negotiate through landscape mosaics have been likened to "stepping-stones," and some researchers (e.g., Bennett 2003, as cited in Appendix Q) have suggested that in some cases and for some species, stepping-stone habitat is as effective as continuous corridors.

There is a distinction between short-distance individual movements, such as foraging within an organism's home range, long-distance dispersal (one-time emigration and immigration events between populations), and migration (seasonal or periodic movements on local or regional scales). Corridors and habitat linkages may allow for long- or short-distance movements, dispersal, and migration depending on the life history requirements and ability of a particular species to travel through a landscape. Wildlife movement and population connectivity also may be examined at three spatial scales: (1) landscape habitat linkages, (2) wildlife corridors, and (3) wildlife crossings.

Landscape habitat linkages are large open space areas on a landscape scale that contain natural habitat and provide a connection between at least two larger adjacent open spaces or habitat areas. Linkages are defined as providing a large enough area to support a natural habitat mosaic and viable populations of smaller terrestrial species, such as rodents, smaller carnivores (e.g., raccoons, skunks, fox, and weasels), passerine birds, amphibians, reptiles, and invertebrates and allowing for gene flow through diffusion of populations over a period of generations, as well as allowing for dispersal of some species between neighboring habitats. Linkages can form large tracts of natural open space and serve both as resident habitat and as connections to larger core habitat areas.

Wildlife corridors are linear landscape elements that provide for species movement and dispersal between two or more habitats, but do not necessarily have enough habitat for all life history requirements of a species, particularly reproduction (Rosenberg et al. 1995,

1997, as cited in Appendix Q). For this reason, while corridors may provide for dispersal of most species, they may not provide for the diffusion of populations over a longer time scale. The main prerequisite for corridors is that they increase animal movement between habitat patches. The mechanisms related to the efficacy of corridors are varied and species-specific (Soulé and Gilpin 1991, Beier and Loe 1992, Rosenberg et al. 1995, and Haddad and Tewksbury 2005, as cited in Appendix Q).

Wildlife crossings are locations where wildlife must pass through physically constrained environments (e.g., roads, development) during movement within home ranges or during dispersal or migration between core areas of suitable habitat. Such crossings can occur within a landscape habitat linkage or within a wildlife corridor. Development and roads may transect or interrupt an existing natural crossing, creating dangerous or impassable barriers that impede the natural movement of a species and possibly subject it to higher risks of injury and mortality from adverse human interactions, such as increased vehicle collisions at roadways where no safe wildlife passage is provided (Meese et al. 2007, as cited in Appendix Q).

In addition to species-specific information on movement corridors and habitat linkages, potential landscape-level habitat linkages and wildlife movement corridors in the DRECP Plan Area have been identified in the California Desert Connectivity Project (Penrod et al. 2012, as cited in Appendix Q), the California Essential Habitat Connectivity Project (Caltrans 2010, as cited in Appendix Q), the South Coast Missing Linkages Project (Beier et al. 2006; South Coast Wildlands 2008, as cited in Appendix Q), and A Linkage Design for the Joshua Tree–Twentynine Palms Connection (Penrod et al. 2008, as cited in Appendix Q).

The California Desert Connectivity Project is intended to provide a comprehensive and detailed habitat connectivity analysis for the California deserts (Penrod et al. 2012, as cited in Appendix Q). The Connectivity Project included both least-cost corridor habitat permeability models for four Focus Species (American badger, kit fox [*Vulpes macrotis*], bighorn sheep, and Agassiz's desert tortoise) and identification of a Desert Linkage Network using "land facet" methods based on the approach described by Beier and Brost (2010, as cited in Appendix Q). Land facets are "recurring landscape units with uniform topographic and soil attributes" that can be employed as a "coarse-filter" conservation strategy to protect areas with a high diversity (Beier and Brost 2010, as cited in Appendix Q). As applied to the DRECP Plan Area, the land facet method is designed to identify "swaths" of habitat of fairly uniform physical conditions that will interact with uncertain climate changes to maintain habitat for species and species' movement (Penrod et al. 2012, as cited in Appendix Q). Each identified linkage consists of a corridor for each land facet and a corridor for high diversity of land facets and should support movement of species associated with that facet (Penrod et al. 2012, as cited in Appendix Q). The Connectivity Project identified 22 crucial linkage planning areas within the DRECP Plan Area. A pair of landscape blocks that should remain connected

defines each crucial linkage planning area. The landscape blocks identified by Penrod et al. (2012, as cited in Appendix Q) include Sierra Nevada, China Lake North Range, China Lake South Range, Kingston–Mesquite Mountains, Mojave National Preserve, EAFB, Twentynine Palms and Newberry-Rodman, San Gabriel and San Bernardino mountain ranges, Joshua Tree National Park, Stepladder–Turtle Mountains, Whipple Mountains, Palen–McCoy Mountains, Chocolate Mountains, East Mesa, and Picacho. Each of these landscape blocks is linked to another landscape block by one or more linkages that meet certain criteria defined by Penrod et al. (2012, as cited in Appendix Q). Finally, Penrod et al. (2012, as cited in Appendix Q) conducted habitat suitability, patch size, and configuration analyses for 44 Focus Species, including 12 mammals, 8 birds, 9 reptiles, 1 amphibian, 5 insects, and 9 plants, to evaluate the configuration and extent of potentially suitable habitat in the linkage network. Penrod et al. (2012, as cited in Appendix Q) contains a detailed discussion of the linkage network identified by the Connectivity Project.

The California Essential Habitat Connectivity Project is coarser in scale than the California Desert Connectivity Project or South Coast Missing Linkages Project (Spencer et al. 2010, as cited in Appendix Q). The California Essential Habitat Connectivity Project did not use Focus Species to identify areas needing connection; rather, it used indices of environmental integrity and other biological inputs to identify large "Natural Landscape Blocks" and "Essential Connectivity Areas" throughout California. These are particularly useful in identifying important areas to conserve outside of conservation priority areas not already conserved or mapped by other efforts.

The South Coast Missing Linkages Project preceded the California Desert Connectivity Project (Penrod et al. 2012, as cited in Appendix Q), which expanded the geographic area from California's South Coast Ecoregion across California's deserts, as discussed above. The South Coast Missing Linkages Project developed several linkage designs that connected portions of the South Coast Ecoregion with the Mojave and Sonoran deserts, and several of those linkage designs are partly within the DRECP Plan Area (Beier et al. 2006; South Coast Wildlands 2008, as cited in Appendix Q). The California Desert Connectivity Project complements the South Coast Missing Linkages Project, using similar analytical tools. The South Coast Missing Linkages Project information was incorporated into Penrod et al. (2012, as cited in Appendix Q) and noted as a previous linkage design.

A Linkage Design for the Joshua Tree–Twentynine Palms Connection identified the Joshua Tree–Twentynine Palms Connection, which lies in an ecological transition zone between the Mojave and Sonoran deserts (Penrod et al. 2008, as cited in Appendix Q). This linkage connects Joshua Tree National Park with the Marine Corps Air Ground Combat Center at Twentynine Palms. As with the South Coast Missing Linkages Project information, this information on the Joshua Tree–Twentynine Palms Connection was incorporated into Penrod et al. (2012, as cited in Appendix Q) and noted as a previous linkage design.

Figures III.7-26 through III.7-36 show identified habitat connectivity areas within the DRECP Plan Area based on the projects described above, and Table III.7-69 shows the acreage of habitat connectivity areas within each DRECP Plan Area ecoregion subarea based on the Desert Linkage Network data (Penrod et al. 2012, as cited in Appendix Q).

Table III.7-69
Acreage of Landscape Habitat Linkages within the DRECP Plan Area by Ecoregion Subarea

Ecoregion Subarea	Desert Linkage Network (acres)
Cadiz Valley and Chocolate Mountains	905,000
Imperial Borrego Valley	207,000
Kingston and Funeral Mountains	174,000
Mojave and Silurian Valley	861,000
Owens River Valley (southern end)	19,000
Panamint Death Valley	255,000
Pinto Lucerne Valley and Eastern Slopes	327,000
Piute Valley and Sacramento Mountains	161,000
Providence and Bullion Mountains	428,000
West Mojave and Eastern Slopes	880,000
Total	**4,216,000**

Source: Penrod et al. 2012, as cited in Appendix Q.
Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

Cadiz Valley and Chocolate Mountains Ecoregion Subarea

As shown on Figure III.7-27, landscape habitat linkages cover approximately 905,000 acres within the Cadiz Valley and Chocolate Mountains ecoregion subarea. These linkages are primarily located along the desert valleys, providing connectivity between isolated mountain ranges within the ecoregion subarea. Specific linkages in this ecoregion subarea include the following: Chocolate Mountains–Little Picacho, Joshua Tree National Park–Chocolate Mountains, Joshua Tree National Park–Palen McCoy Mountains, Palen McCoy Mountains–Chocolate Mountains, Palen McCoy Mountains–Little Picacho, Palen McCoy Mountains–Whipple Mountains, and Stepladder Turtle Mountains–Palen McCoy Mountains (Penrod et al. 2012).

Imperial Borrego Valley Ecoregion Subarea

As shown on Figure III.7-28, landscape habitat linkages cover approximately 207,000 acres within the Imperial Borrego Valley ecoregion subarea. These linkages are east of the Salton

Sea/El Centro agricultural complex, and provide connectivity between eastern Imperial County deserts, north into the Cadiz Valley. Specific linkages in this ecoregion subarea include the Chocolate Mountains–Little Picacho and Chocolate Mountains–East Mesa linkages (Penrod et al. 2012).

Kingston and Funeral Mountains Ecoregion Subarea

As shown on Figure III.7-29, landscape habitat linkages cover approximately 174,000 acres within the Kingston and Funeral Mountains ecoregion subarea. These linkages provide connectivity through the mountains, to allow movement between the DRECP Plan Area and habitat in Clark County, Nevada. Specific linkages in this ecoregion subarea include the China Lake South Range–Kingston Mesquite Mountains and Kingston Mesquite Mountains–Mojave National Preserve linkages (Penrod et al. 2012).

Mojave and Silurian Valley Ecoregion Subarea

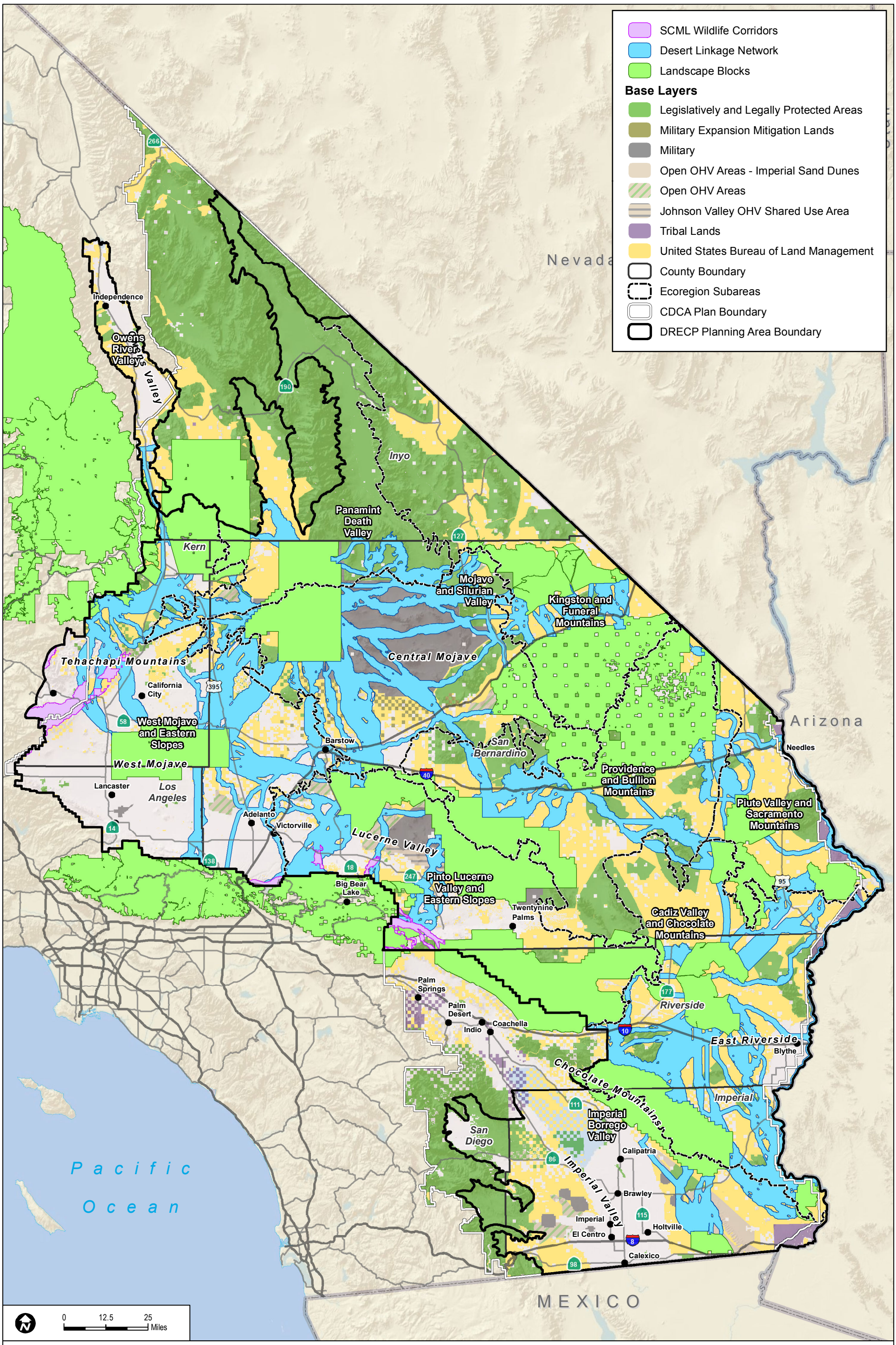
As shown on Figure III.7-30, landscape habitat linkages cover approximately 861,000 acres within the Mojave and Silurian Valley ecoregion subarea. These linkages are located in the valleys, providing connectivity between mountain ranges within the ecoregion subarea. Specific linkages in this ecoregion subarea include the following: China Lake South Range–Kingston Mesquite Mountains, China Lake South Range– EAFB, China Lake South Range–Sierra Nevada, China Lake South Range–Twentynine Palms and Newberry Rodman, EAFB–Sierra Nevada, Mojave National Preserve–Twentynine Palms, and Newberry Rodman (Penrod et al. 2012).

Owens River Valley Ecoregion Subarea

As shown on Figure III.7-31, landscape habitat linkages cover approximately 19,000 acres within the Owens River Valley ecoregion subarea. These linkages are located in the river valley, providing connectivity between the mountain ranges adjacent to ecoregion subarea. Specifically, this ecoregion subarea includes a portion of the China Lake North Range–Sierra Nevada linkage identified by Penrod et al. (2012). Most of the Owens River Valley ecoregion subarea, north of the linkages shown in Figure III.7-31, is not included in landscape habitat linkage analysis and should be assumed to also include linkages.

Panamint Death Valley Ecoregion Subarea

As shown on Figure III.7-32, landscape habitat linkages cover approximately 255,000 acres within the Panamint Death Valley ecoregion subarea. These linkages are located in the valleys, providing connectivity between mountain ranges within the ecoregion subarea. Specific linkages in this ecoregion subarea include the following: China Lake South Range–Kingston Mesquite Mountains, China Lake South Range–Sierra Nevada, EAFB–Sierra Nevada, and China Lake North Range–China Lake South Range (Penrod et al. 2012).

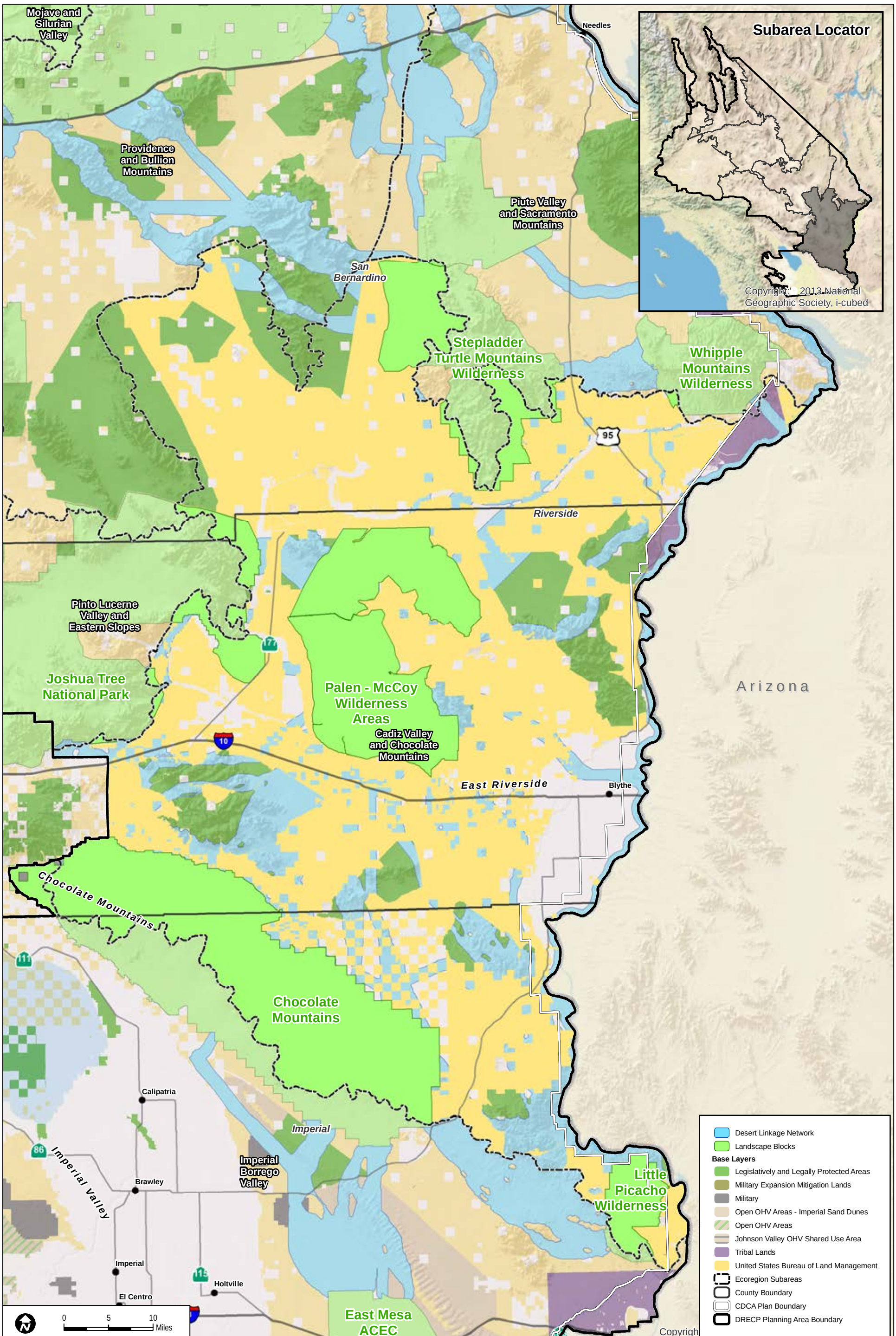


Sources: ESRI (2015); CEC (2013); BLM (2015); CDFW (2013); USFWS (2013); South Coast Wildlands (2012)

FIGURE III.7-26

Habitat Linkages and Wildlife Movement Corridors - Ecoregion Subarea Index Map

INTENTIONALLY LEFT BLANK

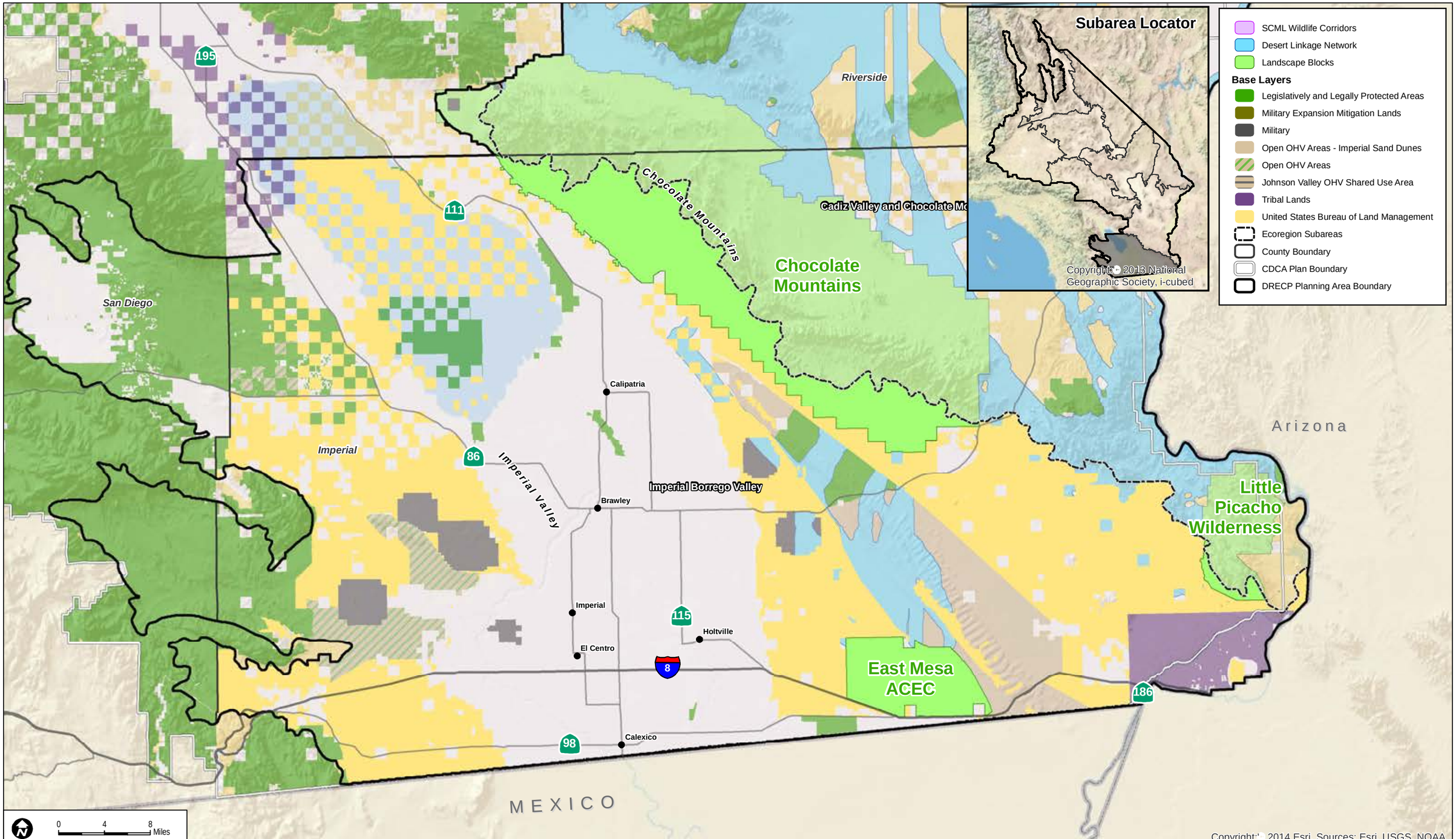


Sources: ESRI (2015); CEC (2013); BLM (2015); CDFW (2013); USFWS (2013); South Coast Wildlands (2012)

FIGURE III.7-27

Habitat Linkages and Wildlife Movement Corridors - Cadiz Valley and Chocolate Mountains Ecoregion Subarea

INTENTIONALLY LEFT BLANK

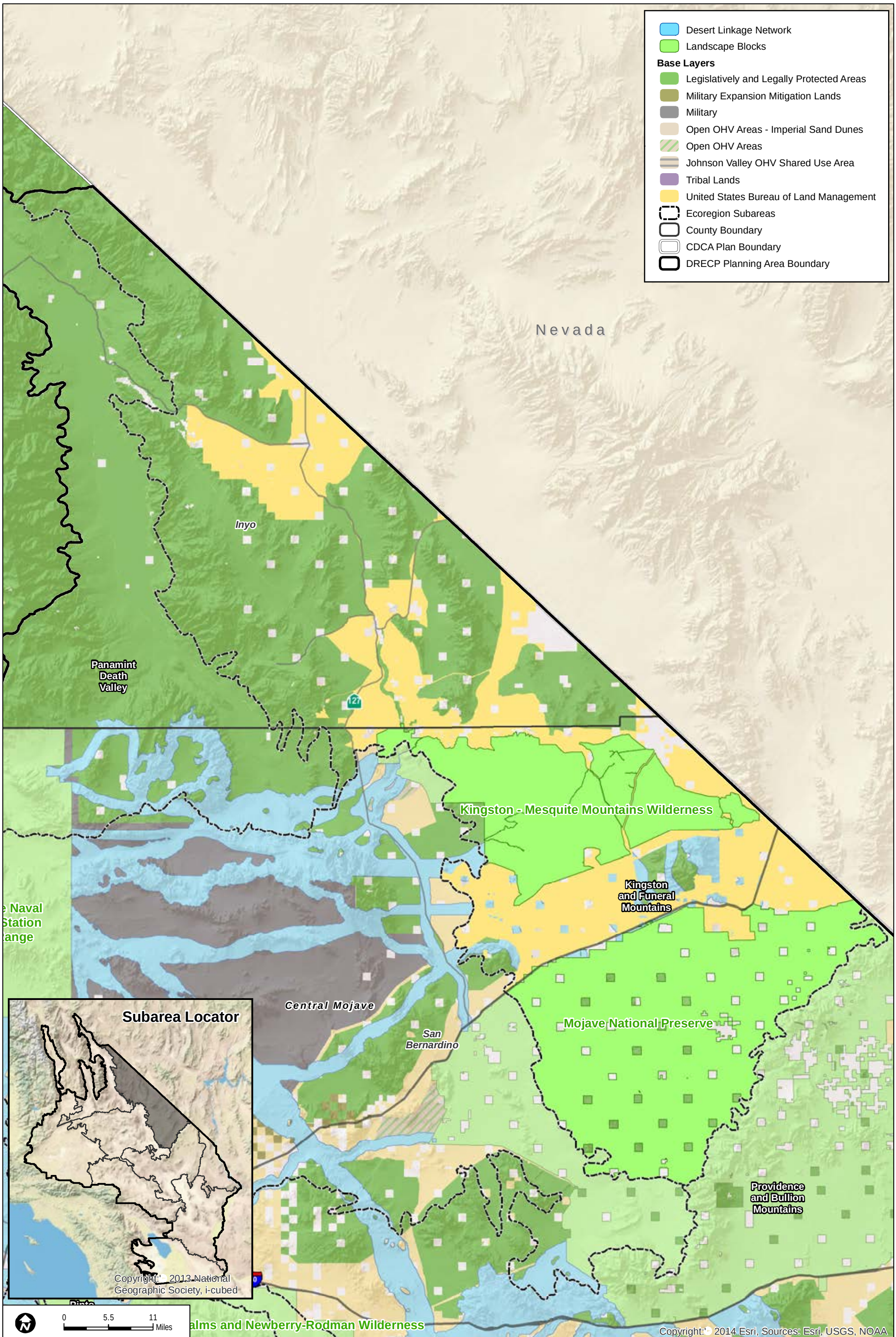


Sources: ESRI (2015); CEC (2013); BLM (2015); CDFW (2013); USFWS (2013); South Coast Wildlands (2012)

FIGURE III.7-28

Habitat Linkages and Wildlife Movement Corridors - Imperial Borrego Valley Ecoregion Subarea

INTENTIONALLY LEFT BLANK

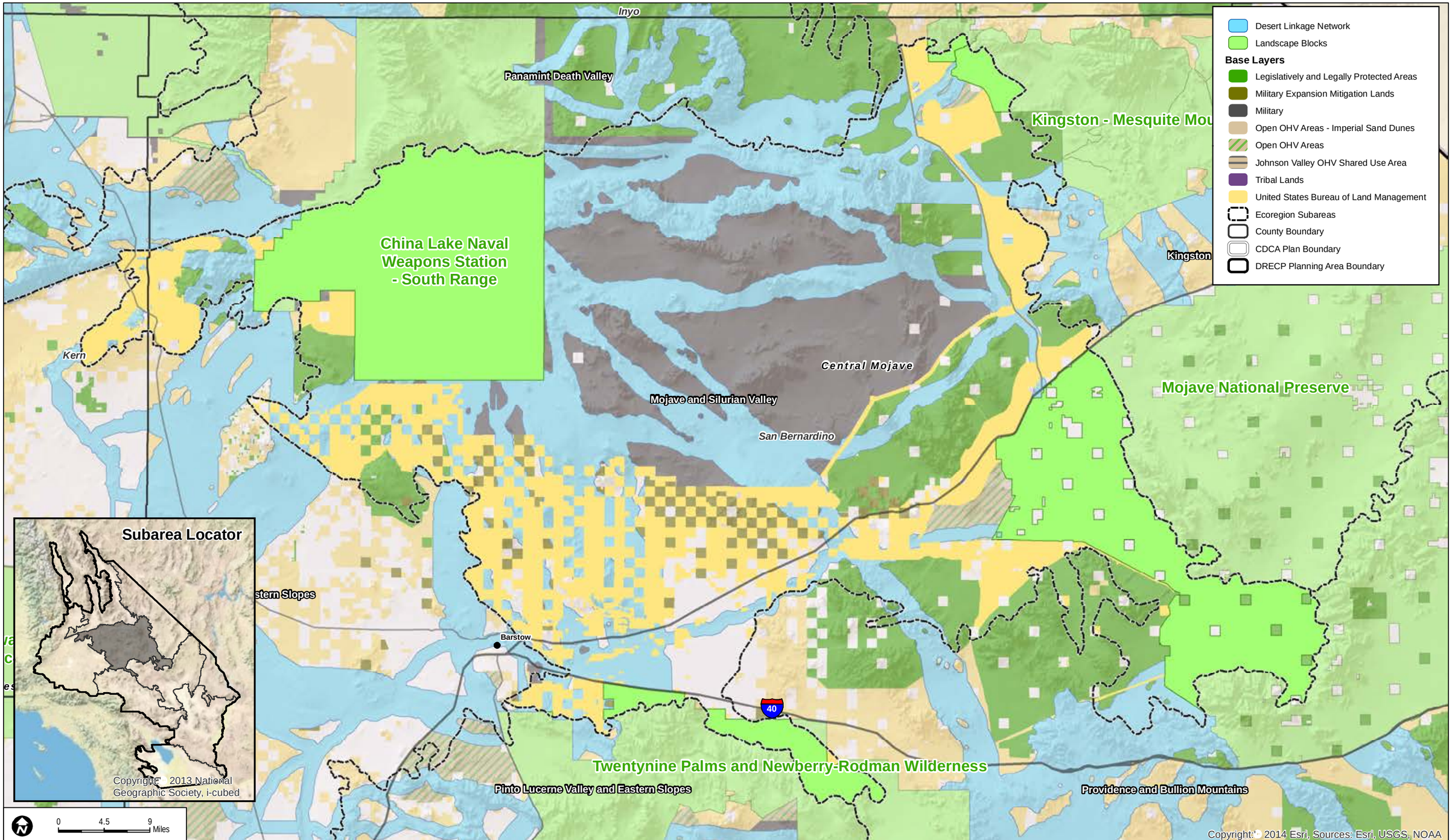


Sources: ESRI (2015); CEC (2013); BLM (2015); CDFW (2013); USFWS (2013); South Coast Wildlands (2012)

FIGURE III.7-29

Habitat Linkages and Wildlife Movement Corridors - Kingston and Funeral Mountains Ecoregion Subarea

INTENTIONALLY LEFT BLANK

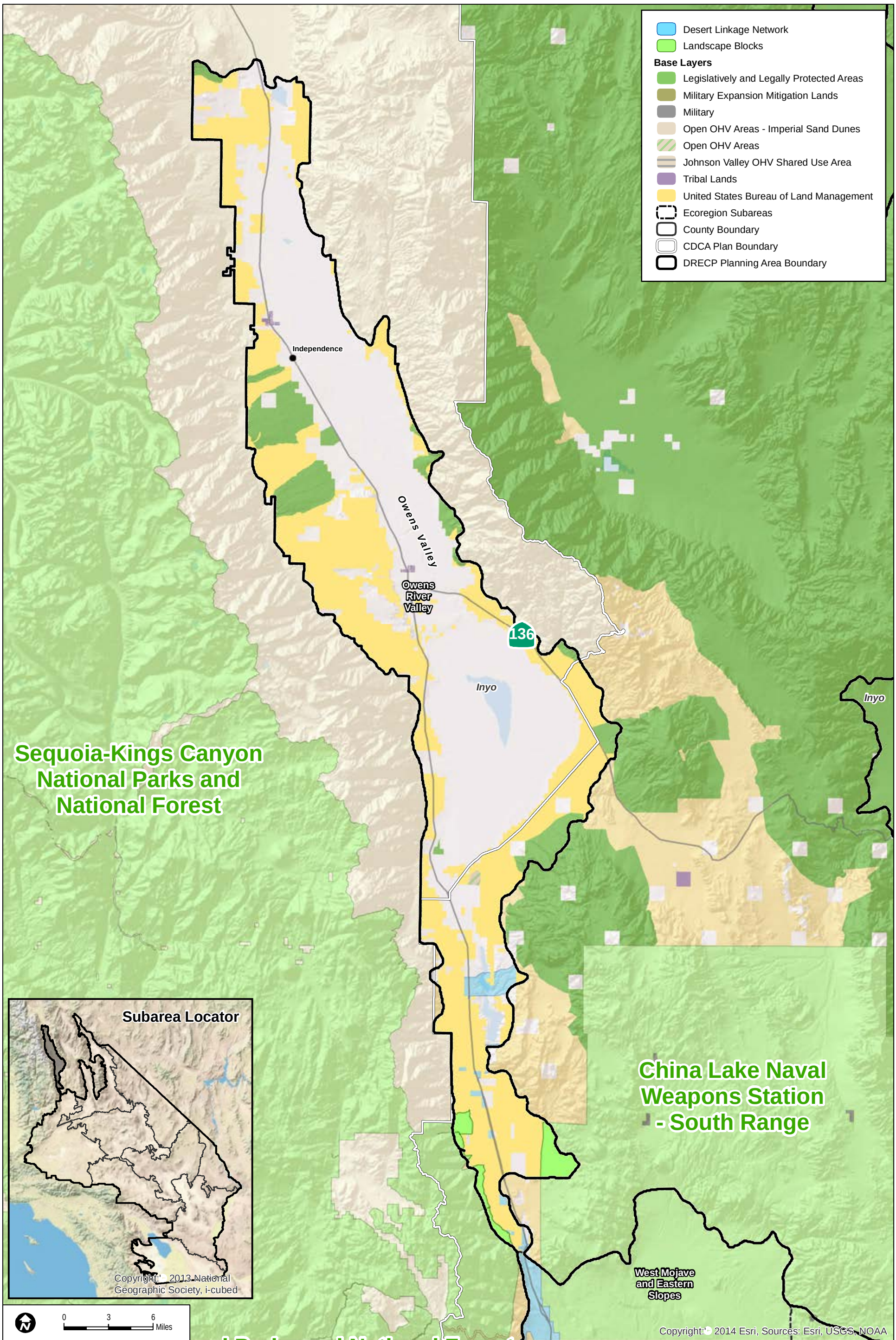


Sources: ESRI (2015); CEC (2013); BLM (2015); CDFW (2013); USFWS (2013); South Coast Wildlands (2012)

FIGURE III.7-30

Habitat Linkages and Wildlife Movement Corridors - Mojave and Silurian Valley Ecoregion Subarea

INTENTIONALLY LEFT BLANK

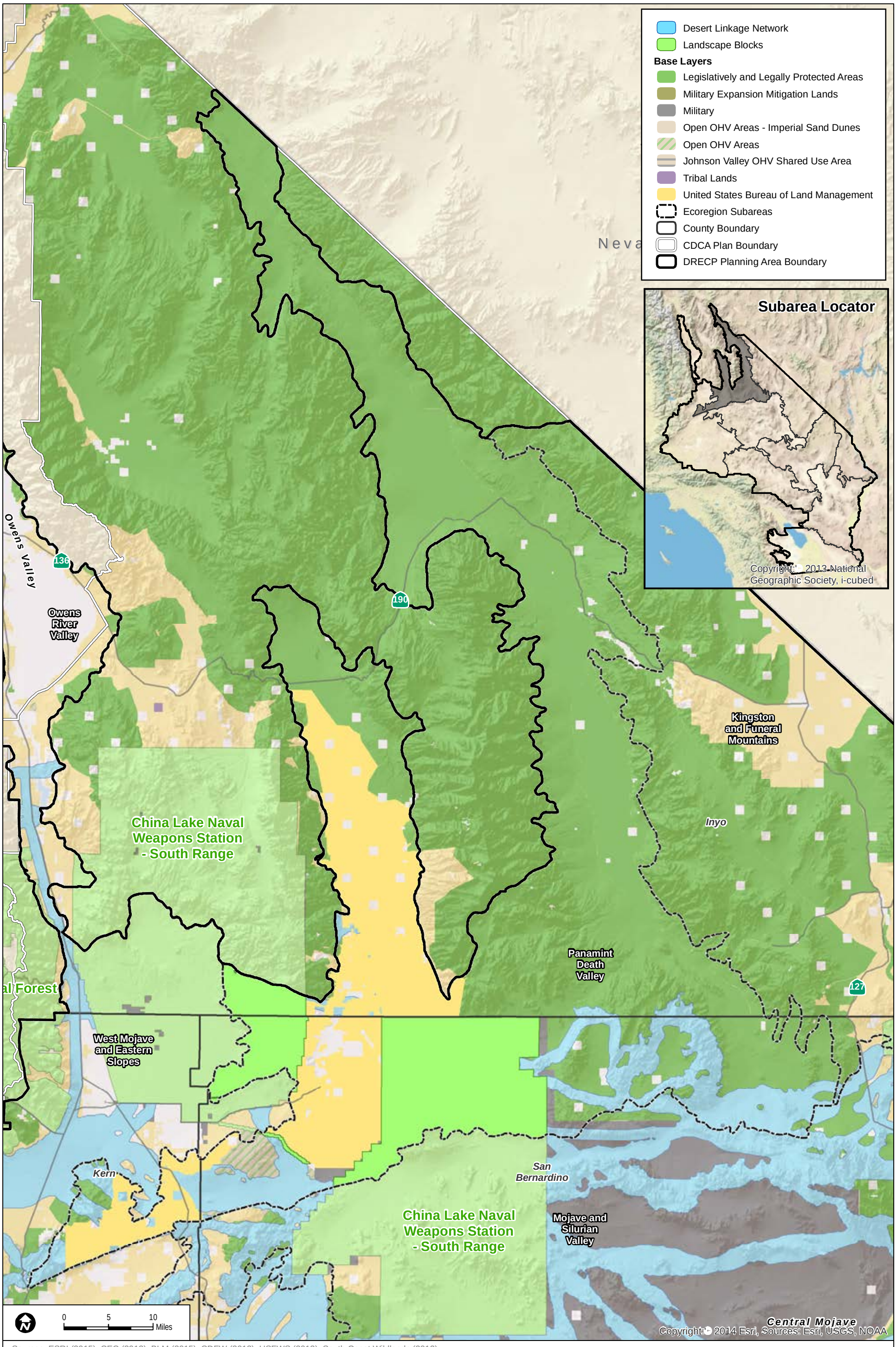


Sources: ESRI (2015); CEC (2013); BLM (2015); CDFW (2013); USFWS (2013); South Coast Wildlands (2012)

FIGURE III.7-31

Habitat Linkages and Wildlife Movement Corridors - Owens River Valley Ecoregion Subarea

INTENTIONALLY LEFT BLANK

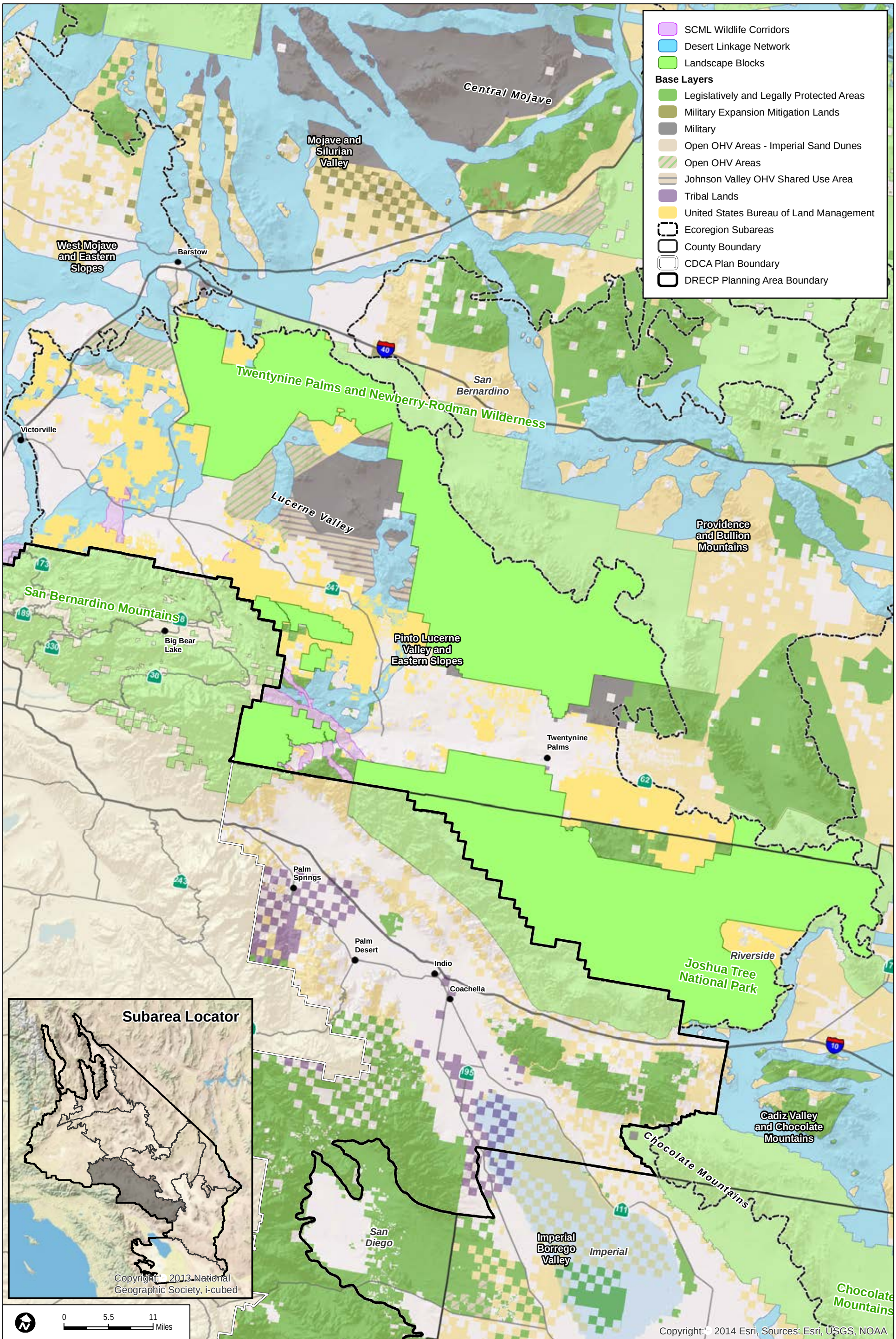


Sources: ESRI (2015); CEC (2013); BLM (2015); CDFW (2013); USFWS (2013); South Coast Wildlands (2012)

FIGURE III.7-32

Habitat Linkages and Wildlife Movement Corridors - Panamint Death Valley Ecoregion Subarea

INTENTIONALLY LEFT BLANK

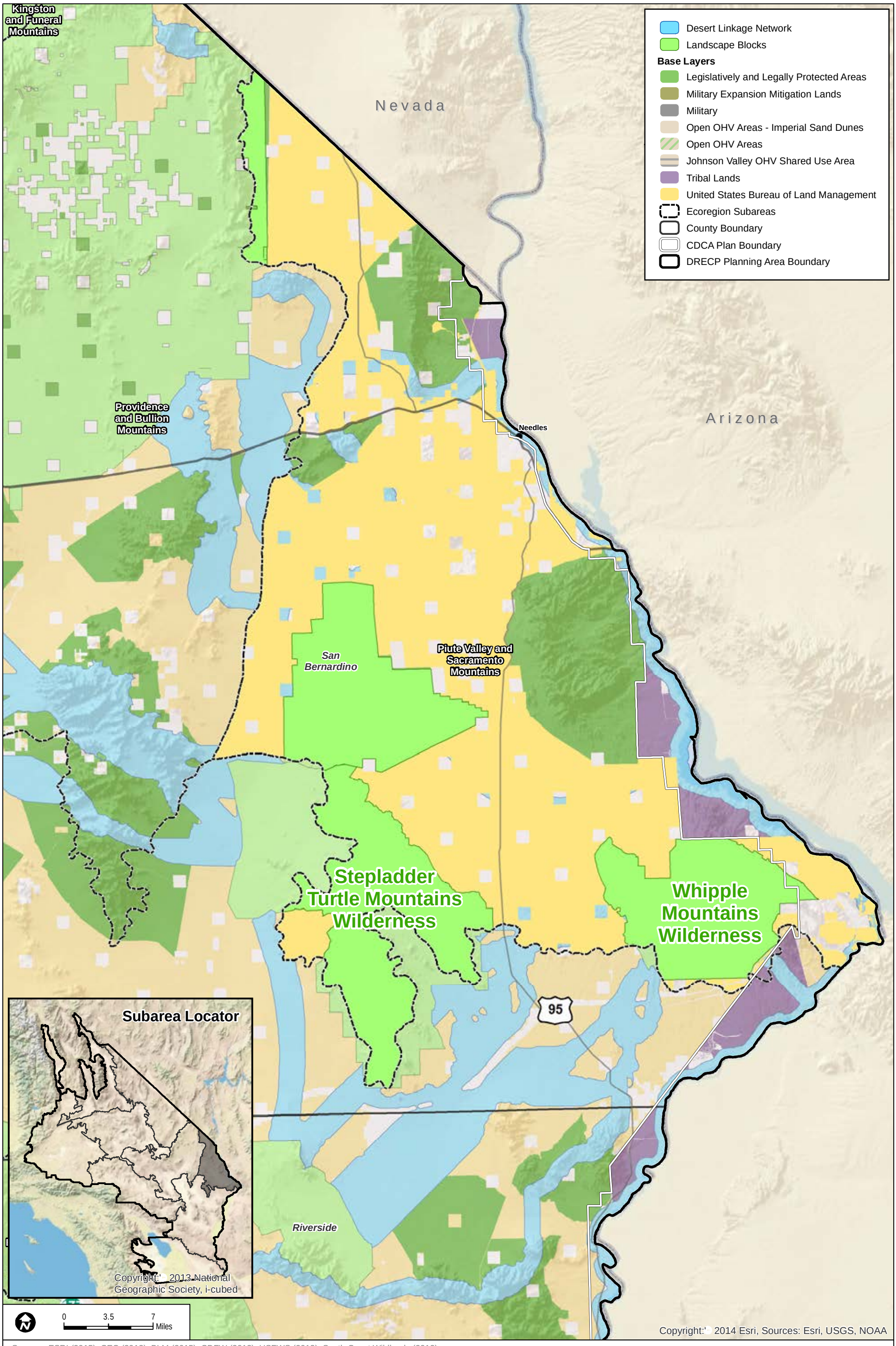


Sources: ESRI (2015); CEC (2013); BLM (2015); CDFW (2013); USFWS (2013); South Coast Wildlands (2012)

FIGURE III.7-33

Habitat Linkages and Wildlife Movement Corridors - Pinto Lucerne Valley and Eastern Slopes Ecoregion Subarea

INTENTIONALLY LEFT BLANK

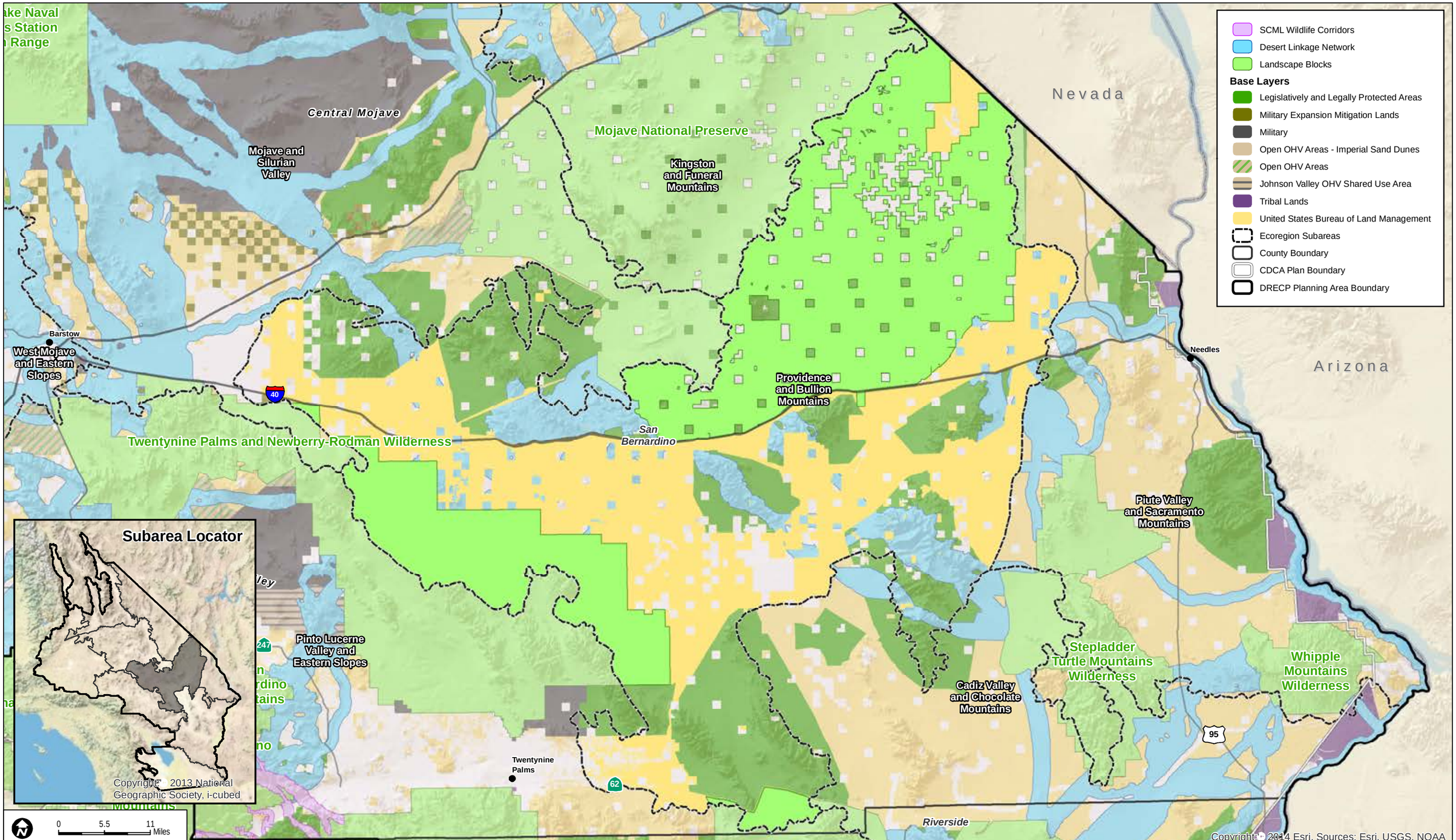


Sources: ESRI (2015); CEC (2013); BLM (2015); CDFW (2013); USFWS (2013); South Coast Wildlands (2012)

FIGURE III.7-34

Habitat Linkages and Wildlife Movement Corridors - Piute Valley and Sacramento Mountains Ecoregion Subarea

INTENTIONALLY LEFT BLANK

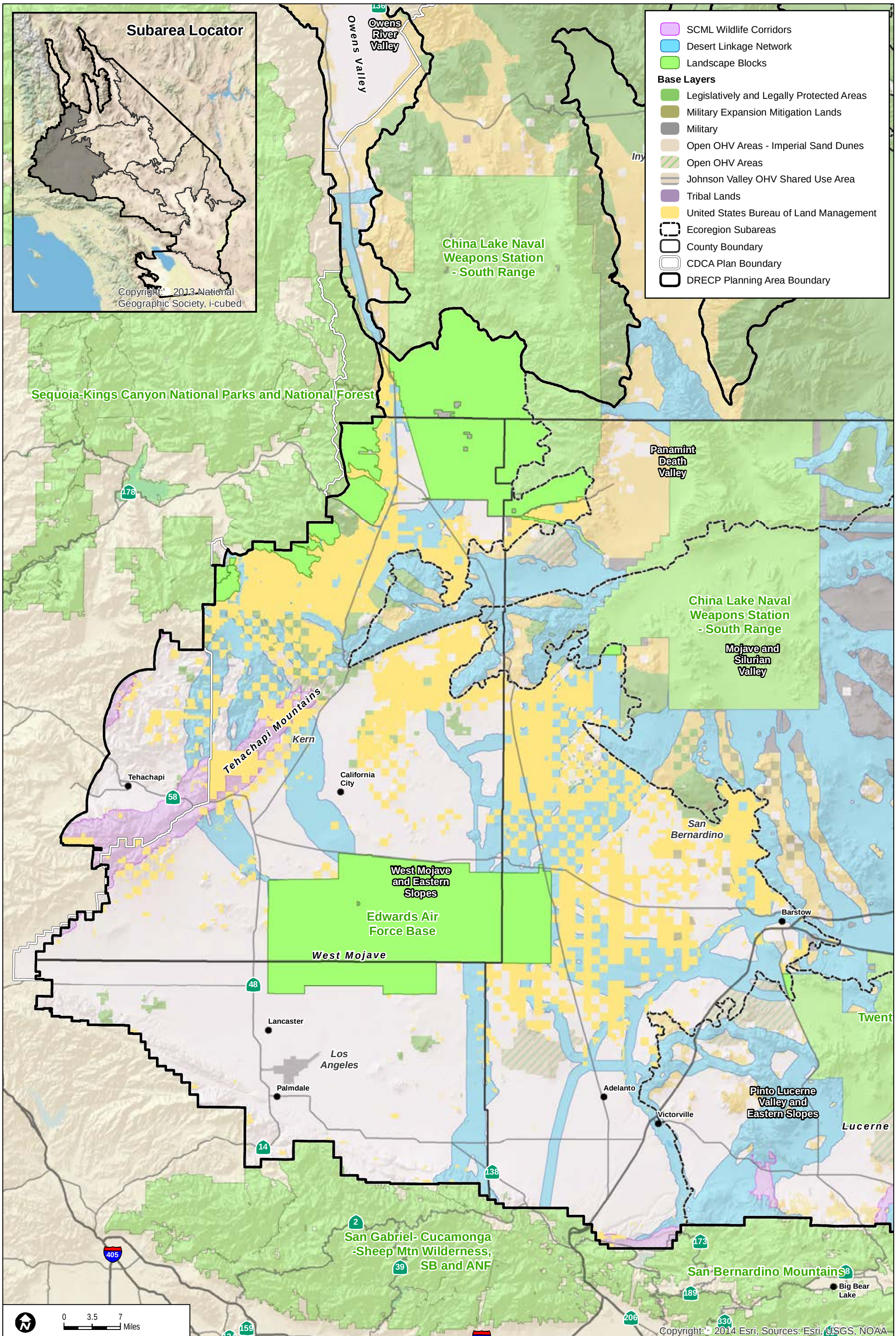


Sources: ESRI (2015); CEC (2013); BLM (2015); CDFW (2013); USFWS (2013); South Coast Wildlands (2012)

FIGURE III.7-35

Habitat Linkages and Wildlife Movement Corridor - Providence and Bullion Mountains Ecoregion Subarea

INTENTIONALLY LEFT BLANK



Sources: ESRI (2015); CEC (2013); BLM (2015); CDFW (2013); USFWS (2013); South Coast Wildlands (2012)

FIGURE III.7-36

Habitat Linkages and Wildlife Movement Corridors - West Mojave and Eastern Slopes Ecoregion Subarea

INTENTIONALLY LEFT BLANK

Pinto Lucerne Valley and Eastern Slopes Ecoregion Subarea

As shown on Figure III.7-33, landscape habitat linkages cover approximately 327,000 acres within the Pinto Lucerne Valley and Eastern Slopes ecoregion subarea. These linkages are primarily located in the valleys, providing connectivity between mountain ranges within the ecoregion subarea. Specific linkages in this ecoregion subarea include the following: China Lake South Range–Twentynine Palms and Newberry Rodman, EAFB–Twentynine Palms and Newberry Rodman, Twentynine Palms and Newberry Rodman–San Bernardino Mountains, and Twentynine Palms and Newberry Rodman–San Gabriel Mountains (Penrod et al. 2012).

Piute Valley and Sacramento Mountains Ecoregion Subarea

As shown on Figure III.7-34, landscape habitat linkages cover approximately 161,000 acres within the Piute Valley and Sacramento Mountains ecoregion subarea. These linkages provide connectivity between the interior corridors and the Colorado River. The linkages are primarily part of the larger Mojave National Preserve–Stepladder Turtle Mountains linkage (Penrod et al. 2012).

Providence and Bullion Mountains Ecoregion Subarea

As shown on Figure III.7-35, landscape habitat linkages cover approximately 428,000 acres within the Providence and Bullion Mountains ecoregion subarea. These linkages are primarily located in the valleys, providing connectivity between mountain ranges within the ecoregion subarea. Specific linkages in this ecoregion subarea include the Mojave National Preserve–Twentynine Palms and Newberry Rodman and Mojave National Preserve–Stepladder Turtle Mountains linkages (Penrod et al. 2012).

West Mojave and Eastern Slopes Ecoregion Subarea

As shown on Figure III.7-36, landscape habitat linkages cover approximately 880,000 acres within the West Mojave and Eastern Slopes ecoregion subarea. These linkages are primarily located in the valleys, providing connectivity between mountain ranges within the ecoregion subarea and linking the Owens River Valley and Antelope Valley to the larger DRECP Plan Area. Specific linkages in this ecoregion subarea include the following: China Lake South Range–EAFB, China Lake South Range–Sierra Nevada, China Lake South Range–Twentynine Palms and Newberry Rodman, EAFB–Sierra Nevada, China Lake North Range–China Lake South Range, EAFB–Twentynine Palms and Newberry Rodman, China Lake North Range–Sierra Nevada, and EAFB–San Gabriel Mountains (Penrod et al. 2012).

III.7.9 Bureau of Land Management Land Use Plan Amendment

Tables III.7-70 through III.7-82 provide a summary of the biological resources in the BLM Land Use Plan Amendment (LUPA) portion of the DRECP Plan Area. The LUPA portion of the DRECP Plan Area includes BLM-administered lands within the DRECP Plan Area also within the California Desert Conservation Area (CDCA) boundary or within the boundary of the BLM Resource Management Plans (RMPs). See the sections earlier in this chapter for a description of these resources.

Table III.7-70
Landforms within the BLM LUPA in the DRECP Plan Area

Landform	Acres
Canyons, deeply incised streams	545,000
Mountain tops, high ridges	620,000
Open slopes	1,645,000
Plains	7,106,000
Total	**9,916,000**

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

Table III.7-71
National Hydrography Dataset Waterbodies within the BLM LUPA in the DRECP Plan Area

NHD Waterbody	Acres
Intermittent lake/pond	1,000
Perennial lake/pond	300
Playa	167,000
Reservoir	10,000
Swamp/marsh	400
Total	**179,000**

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

Table III.7-72
Seeps/Springs within the BLM LUPA in the DRECP Plan Area

Ecoregion Subarea	Count of Seeps/Springs
Cadiz Valley and Chocolate Mountains	5
Imperial Borrego Valley	7
Kingston and Funeral Mountains	45
Mojave and Silurian Valley	11
Owens River Valley	21
Panamint Death Valley	14
Pinto Lucerne Valley and Eastern Slopes	65
Piute Valley and Sacramento Mountains	22
Providence and Bullion Mountains	22
West Mojave and Eastern Slopes	56
Total	**268**

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

Table III.7-73
Major Rivers within the BLM LUPA in the DRECP Plan Area

NHD Major River	Length (feet)
Amargosa River	306,000
Mojave River	147,000
Total	**454,000**

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

Table III.7-74
Regional Geology within the BLM LUPA in the DRECP Plan Area

Parent Material	Acres
Gabbroic	28,000
Granitic	1,276,000
Granitic and metamorphic	75,000
Igneous and metamorphic	270,000
Metavolcanic	214,000
Mixed rock	93,000
Sand dune	444,000

Table III.7-74
Regional Geology within the BLM LUPA in the DRECP Plan Area

Parent Material	Acres
Sedimentary	6,283,000
Sedimentary and metasedimentary	556,000
Volcanic	679,000
Water	500
Total	**9,917,000**

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

Table III.7-75
Dunes and Sand Resources by Ecoregion Subarea within the BLM LUPA in the DRECP Plan Area

Ecoregion Subarea	Total in the DRECP Plan Area
Cadiz Valley and Chocolate Mountains	525,000
Imperial Borrego Valley	224,000
Kingston and Funeral Mountains	44,000
Mojave and Silurian Valley	55,000
Owens River Valley	5,000
Panamint Death Valley	31,000
Pinto Lucerne Valley and Eastern Slopes	19,000
Piute Valley and Sacramento Mountains	60
Providence and Bullion Mountains	187,000
West Mojave and Eastern Slopes	9,000
Total	**1,098,000**

Sources: California Department of Conservation 2000; Dean 1978; and CDFG 2012a.
Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

Table III.7-76
Distribution of Elevation Ranges in the BLM LUPA

Elevation Range (feet AMSL)	Acres
Less than 0	75,000
0–500	805,000

Table III.7-76
Distribution of Elevation Ranges in the BLM LUPA

Elevation Range (feet AMSL)	Acres
500–1,000	1,514,000
1,000–1,500	1,346,000
1,500–2,000	1,315,000
2,000–2,500	1,365,000
2,500–3,000	1,278,000
3,000–3,500	937,000
3,500–4,000	599,000
4,000–4,500	346,000
4,500–5,000	170,000
5,000–5,500	95,000
5,500–6,000	50,000
6,000–6,500	15,000
6,500–7,000	5,000
7,000–7,500	2,000
7,500–8,000	600
8,000–8,500	200
Total	**9,916,000**

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

Table III.7-77
Distribution of Slope Ranges in the BLM LUPA

Slope (degrees)	Acres	% of Total
0–5	5,866,000	59.2%
5–10	1,613,000	16.3%
10–15	665,000	6.7%
15–20	455,000	4.6%
20–25	349,000	3.5%
25–30	271,000	2.7%
30–35	210,000	2.1%
35–40	160,000	1.6%
40–45	117,000	1.2%
45–50	81,000	0.8%

Table III.7-77
Distribution of Slope Ranges in the BLM LUPA

Slope (degrees)	Acres	% of Total
50–100	131,000	1.3%
Above 100	400	0.0%
Total	**9,917,000**	**100.0%**

Source: USGS 2007.
Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

Table III.7-78
Distribution of Aspect in the BLM LUPA

Aspect	Acres	% of Total
Flat	36,000	0.4%
North	1,065,000	10.7%
Northeast	1,546,000	15.6%
East	1,411,000	14.2%
Southeast	1,207,000	12.2%
South	1,171,000	11.8%
Southwest	1,434,000	14.5%
West	1,155,000	11.7%
Northwest	891,000	9.0%
Total	**9,917,000**	**100.0%**

Source: USGS 2007.
Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

Table III.7-79
Summary of Vegetation Types and Other Land Cover in the BLM LUPA

GENERAL VEGETATION GROUPS Vegetation Alliance[1]	Rarity Ranking[2]	Acres[3]
California Forest And Woodland Vegetation Types		**44,000**
Californian broadleaf forest and woodland	**—**	**11,000**
Californian broadleaf forest and woodland[3]	—	11,000
Californian montane conifer forest	**—**	**34,000**
Californian montane conifer forest[3]	—	34,000

Table III.7-79
Summary of Vegetation Types and Other Land Cover in the BLM LUPA

GENERAL VEGETATION GROUPS Vegetation Alliance[1]	Rarity Ranking[2]	Acres[3]
Chaparral And Coastal Scrub (Cismontane Scrub) Vegetation Types		**19,000**
Californian mesic chaparral	**—**	**500**
Californian mesic chaparral[3]	—	300
Cercocarpus montanus	S4	100
Prunus ilicifolia	S3	20
Quercus berberidifolia	S4	<10
Quercus berberidifolia–Adenostoma fasciculatum	S4	50
Californian pre-montane chaparral	**—**	**300**
Californian pre-montane chaparral[3]	—	300
Arctostaphylos glandulosa	S4	10
Californian xeric chaparral	**—**	**5,000**
Californian xeric chaparral[3]	—	3,000
Adenostoma fasciculatum	S5	2,000
Fremontodendron californicum	S4	<10
Central and south coastal California seral scrub	**—**	**20**
Eriodictyon (*crassifolium, trichocalyx*)	S4	20
Central and south coastal Californian coastal sage scrub	**—**	**13,000**
Central and south coastal Californian coastal sage scrub[3]	—	20
Eriogonum fasciculatum	S5	13,000
Western Mojave and Western Sonoran Desert borderland chaparral	**—**	**200**
Western Mojave and Western Sonoran Desert borderland chaparral[3]	—	50
Quercus cornelius-mulleri	S4	100
Quercus john-tuckeri	S4	50
Desert Conifer Woodland Vegetation Types		**50,000**
Great Basin pinyon–juniper woodland	**—**	**50,000**
Great Basin pinyon–juniper woodland[3]	—	39,000
Cercocarpus ledifolius	S4	<10
Juniperus californica (non-LRO)	S4	4,000
Juniperus californica (LRO)	S4	400
Pinus monophylla	S4	6,000
Desert Outcrop and Badland Vegetation Types		**1,219,000**
North American warm desert bedrock cliff and outcrop	**—**	**1,219,000**
North American warm desert bedrock cliff and outcrop[3]	—	1,071,000
Atriplex hymenelytra (non-LRO)	S4	15,000
Atriplex hymenelytra (LRO)	S4	200
Chorizanthe rigida–Geraea canescens	S4	134,000

Table III.7-79
Summary of Vegetation Types and Other Land Cover in the BLM LUPA

GENERAL VEGETATION GROUPS Vegetation Alliance[1]	Rarity Ranking[2]	Acres[3]
Peucephyllum schottii	S3	100
Desert Scrub Vegetation Types		**7,293,000**
Arizonan upland Sonoran desert scrub	**—**	**3,000**
Arizonan upland Sonoran desert scrub[3]	—	2,000
Agave deserti	S3	100
Tetracoccus hallii	S1	<10
Viguiera parishii	S4	1,000
Intermontane deep or well-drained soil scrub	**—**	**70,000**
Ephedra nevadensis (non-LRO)	S4	3,000
Ephedra nevadensis (LRO)	S4	10
Ephedra viridis	S4	11,000
Ericameria teretifolia	S4	3,000
Grayia spinosa	S4	43,000
Krascheninnikovia lanata	S3	5,000
Lycium cooperi	S3?	300
Purshia tridentata	S3	500
Intermontane seral shrubland	**—**	**6,000**
Intermontane seral shrubland[3]	—	800
Encelia (actoni, virginesis)	S3	4,000
Ericameria cooperi	S4?	700
Ericameria nauseosa	S5	200
Gutierrezia sarothrae	S3	90
Intermountain dry shrubland and grassland	**—**	**284,000**
Intermountain dry shrubland and grassland[3]	—	284,000
Intermountain mountain big sagebrush shrubland and steppe	**—**	**24,000**
Intermountain mountain big sagebrush shrubland and steppe[3]	—	22,000
Artemisia tridentata	S5	<10
Intermountain West mesic tall sagebrush shrubland and steppe	—	3,000
Lower bajada and fan Mojavean–Sonoran desert scrub	**—**	**6,398,000**
Lower bajada and fan Mojavean–Sonoran desert scrub[3]	—	4,348,000
Ambrosia dumosa	S5	57,000
Atriplex polycarpa	S4	58,000
Encelia farinosa	S4	50,000
Fouquieria splendens	S3	50
Larrea tridentata	S5	229,000
Larrea tridentata–Ambrosia dumosa	S5	1,405,000

Table III.7-79
Summary of Vegetation Types and Other Land Cover in the BLM LUPA

GENERAL VEGETATION GROUPS Vegetation Alliance[1]	Rarity Ranking[2]	Acres[3]
Larrea tridentata–Encelia farinosa	S4	238,000
Mojave and Great Basin upper bajada and toeslope	**—**	**416,000**
Mojave and Great Basin upper bajada and toeslope[3]	—	302,000
Coleogyne ramosissima (non-LRO)	S4	17,000
Coleogyne ramosissima (LRO)	S4	13,000
Menodora spinescens	S3	100
Salazaria mexicana	S4	30,000
Yucca brevifolia	S3	17,000
Yucca schidigera	S4	38,000
Shadscale–saltbush cool semi-desert scrub	**—**	**105,000**
Shadscale–saltbush cool semi-desert scrub[3]	—	74,000
Atriplex canescens	S4	9,000
Atriplex confertifolia	S4	22,000
Southern Great Basin semi-desert grassland	**—**	**50**
Southern Great Basin semi-desert grassland[3]	—	<10
Achnatherum speciosum	S2	50
Dune Vegetation Types		**237,000**
North American warm desert dunes and sand flats	**—**	**237,000**
North American warm desert dunes and sand flats[3]	—	194,000
Dicoria canescens–Abronia villosa	S3	4,000
Panicum urvilleanum	S1	400
Pleuraphis rigida	S2	3,000
Prosopis glandulosa coppice dunes	S3?	33,000
Wislizenia refracta	S2	3,000
Grassland Vegetation Types		**30,000**
California annual and perennial grassland	**—**	**28,000**
California annual and perennial grassland[3]	—	20,000
Brassica nigra and other mustards	—	1,000
California annual and perennial grassland (native component) Mapping Unit (non-LRO)	—	2,000
California annual and perennial grassland (native component) Mapping Unit (LRO)	—	3,000
Mediterranean California naturalized annual and perennial grassland	—	3,000
California annual forb/grass vegetation	**—**	**1,000**
California annual forb/grass vegetation[3]	—	1,000
Amsinckia (menziesii, tessellata)	S4	200

Table III.7-79
Summary of Vegetation Types and Other Land Cover in the BLM LUPA

GENERAL VEGETATION GROUPS Vegetation Alliance[1]	Rarity Ranking[2]	Acres[3]
Riparian Vegetation Types		**669,000**
Madrean warm semi-desert wash woodland/scrub	**—**	**524,000**
Madrean warm semi-desert wash woodland/scrub[3]	—	524,000
Mojavean semi-desert wash scrub	**—**	**11,000**
Mojavean semi-desert wash scrub[3]	—	300
Ambrosia salsola	S4	7,000
Bebbia juncea	S3?	<10
Brickellia incana	S2?	100
Ephedra californica	S3	2,000
Ericameria paniculata	S3	1,000
Lepidospartum squamatum	S3	1,000
Prunus fasciculata	S3	300
Sonoran–Coloradan semi-desert wash woodland/scrub	**—**	**122,000**
Sonoran–Coloradan semi-desert wash woodland/scrub[3]	—	1,000
Acacia greggii	S4	5,000
Chilopsis linearis	S3	1,000
Hyptis emoryi	S3	3,000
Parkinsonia florida–Olneya tesota	S4	106,000
Pluchea sericea	S3	<10
Prosopis glandulosa	S3	5,000
Psorothamnus spinosus	S3	2,000
Southwestern North American riparian evergreen and deciduous woodland	**—**	**400**
Southwestern North American riparian evergreen and deciduous woodland[3]	—	400
Populus fremontii	S3	30
Salix laevigata	S3	<10
Southwestern North American riparian/wash scrub	**—**	**11,000**
Southwestern North American riparian/wash scrub[3]	—	90
Baccharis sergiloides	S3	<10
Forestiera pubescens	S2	<10
Salix exigua	S4	<10
Salix lasiolepis	S4	<10
Southwestern North American introduced riparian scrub	—	10,000
Tamarix spp.	—	700

Table III.7-79
Summary of Vegetation Types and Other Land Cover in the BLM LUPA

GENERAL VEGETATION GROUPS Vegetation Alliance[1]	Rarity Ranking[2]	Acres[3]
Wetland Vegetation Types		**300,000**
Arid West freshwater emergent marsh	**—**	**10**
Arid West freshwater emergent marsh[3]	—	10
Californian warm temperate marsh/seep	**—**	**<10**
Juncus arcticus (var. *balticus, mexicanus*)	S4	<10
North American warm desert alkaline scrub and herb playa and wet flat	**—**	**151,000**
North American warm desert alkaline scrub and herb playa and wet flat[3]	—	151,000
Open water[4]	**—**	**1,000**
Playa[4]	**—**	**26,000**
Southwestern North American salt basin and high marsh	**—**	**123,000**
Southwestern North American salt basin and high marsh[3]	—	47,000
Allenrolfea occidentalis	S3	1,000
Atriplex lentiformis	S4	10
Atriplex spinifera	S4	60,000
Distichlis spicata	S4	10
Isocoma acradenia	S2?	<10
Suaeda moquinii	S4	14,000
Southwestern North American alkali marsh/seep vegetation	—	20
Lacustrine[4]	**—**	100
Other Land Covers		**56,000**
Agriculture	**—**	6,000
Developed and Disturbed Areas	**—**	47,000
Not Mapped	**—**	3,000
	Total	**9,917,000**

1 Only a portion of the DRECP Plan Area, approximately six million acres of the Mojave and Colorado/Sonoran deserts within Inyo, Kern, Los Angeles, San Bernardino, Riverside, and Imperial counties, has been mapped at the more specific alliance level.

2 State Rankings: S1 = critically imperiled; S2 = imperiled; S3 = vulnerable; S4 = apparently secure; S5 = secure; ? = inexact numeric rank (NatureServe 2012); LRO = Locally Rare Occurrence. Those in bold typeface are considered rare in the context of the DRECP.

3 Where the alliance name is the same as the vegetation group name the vegetation type is undifferentiated and not described at the alliance level.

4 This is a land cover type and not specifically a "vegetation type."

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

Table III.7-80
Focus Species with Occurrences within the BLM LUPA in the DRECP Plan Area

Taxa	Common Name	Scientific Name	Federal Status[1]	State Status[2]
Amphibian/ reptile	Agassiz's desert tortoise	*Gopherus agassizii*	FT	ST
	Flat-tailed horned lizard	*Phrynosoma mcallii*	BLM/FS	SC/CSC
	Mojave fringe-toed lizard	*Uma scoparia*	BLM	CSC
	Tehachapi slender salamander	*Batrachoseps stebbinsi*	BLM/FS	ST
Bird	Bendire's thrasher	*Toxostoma bendirei*	BCC/BLM	CSC
	Burrowing owl	*Athene cunicularia*	BCC/BLM	CSC
	California black rail	*Laterallus jamaicensis coturniculus*	BCC/BLM	ST
	Gila woodpecker	*Melanerpes uropygialis*	BLM/BCC	SE
	Golden eagle	*Aquila chrysaetos*	BLM	FP
	Least Bell's vireo	*Vireo bellii pusillus*	FE/BCC	SE
	Mountain plover	*Charadrius montanus*	BCC/BLM	CSC
	Swainson's hawk	*Buteo swainsoni*	BLM/FS	ST
	Tricolored blackbird	*Agelaius tricolor*	BLM/BCC	SE
	Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	FT/FS/BCC/ BLM	SE
	Willow flycatcher (including southwestern)	*Empidonax traillii (*including *extimus)*	Southwestern: FE	SE
	Yuma Ridgway's rail	*Rallus obsoletus yumanensis*	FE/BCC	ST/FP
Fish	Desert pupfish	*Cyprinodon macularius*	FE	SE
	Mohave tui chub	*Siphateles (Gila) bicolor mohavensis*	FE	SE/FP
Mammal	Desert bighorn sheep	*Ovis canadensis nelsoni*	Desert: BLM	Desert: FP[3]
	California leaf-nosed bat	*Macrotus californicus*	BLM/FS	CSC
	Mohave ground squirrel	*Xerospermophilus mohavensis*	BLM	ST
	Pallid bat	*Antrozous pallidus*	BLM/FS	CSC
	Townsend's big-eared bat	*Corynorhinus townsendii*	BLM/FS	SC/CSC
Plant	Alkali mariposa-lily	*Calochortus striatus*	BLM	(CRPR 1B.2)
	Barstow woolly sunflower	*Eriophyllum mohavense*	BLM	(CRPR 1B.2)

Table III.7-80
Focus Species with Occurrences within the BLM LUPA in the DRECP Plan Area

Taxa	Common Name	Scientific Name	Federal Status[1]	State Status[2]
	Desert cymopterus	*Cymopterus deserticola*	BLM	(CRPR 1B.2)
	Little San Bernardino Mountains linanthus	*Linanthus maculatus*	BLM	(CRPR 1B.2)
	Mojave monkeyflower	*Mimulus mohavensis*	BLM	(CRPR 1B.2)
	Mojave tarplant	*Deinandra mohavensis*	BLM	SE (CRPR 1B.3)
	Owens Valley checkerbloom	*Sidalcea covillei*	BLM	SE (CRPR 1B.1)
	Parish's daisy	*Erigeron parishii*	FT	(CRPR 1B.1)
	Triple-ribbed milk-vetch	*Astragalus tricarinatus*	FE	(CRPR 1B.2)

1 Federal Status – FE: Federally Endangered; FT: Federally Threatened; FS: USFS Sensitive; BLM: Bureau Land Management Sensitive; BCC: USFWS Bird of Conservation Concern.

2 State Status – SE: California Endangered; ST: California Threatened; SC: Candidate for listing; CSC: California Species of Special Concern; FP: Fully Protected. CRPR: California Rare Plant Rank (formerly known as the CNPS List)–CRPR 1B: Considered rare, threatened, or endangered in California and elsewhere; CRPR 2: Considered rare, threatened, or endangered in California, but more common elsewhere.

3 Limited hunting allowed.

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

Table III.7-81
Focus and Planning Species' Modeled Habitat within BLM LUPA

Common Name	Scientific Name	Acres (% of BLM LUPA)
Focus Species		
Amphibians/Reptiles		
Agassiz's desert tortoise	*Gopherus agassizii*	6,043,800 (61%)
Flat-tailed horned lizard	*Phrynosoma mcallii*	534,000 (5%)
Mojave fringe-toed lizard	*Uma scoparia*	748,000 (8%)
Tehachapi slender salamander	*Batrachoseps stebbinsi*	7,000 (0.1%)
Birds		
Bendire's thrasher	*Toxostoma bendirei*	785,000 (8%)
Burrowing owl	*Athene cunicularia*	1,905,000 (19%)
California black rail	*Laterallus jamaicensis coturniculus*	33,000 (0.3%)
California condor	*Gymnogyps californianus*	250,000 (3%)
Gila woodpecker	*Melanerpes uropygialis*	38,000 (0.4%)

Table III.7-81
Focus and Planning Species' Modeled Habitat within BLM LUPA

Common Name	Scientific Name	Acres (% of BLM LUPA)
Golden eagle – foraging	*Aquila chrysaetos*	4,080,000 (41%)
Golden eagle – nesting	*Aquila chrysaetos*	2,466,000 (25%)
Greater sandhill crane	*Grus canadensis tabida*	3,000 (0.03%)
Least Bell's vireo	*Vireo bellii pusillus*	70,000 (1%)
Mountain plover	*Charadrius montanus*	8,000 (0.1%)
Swainson's hawk	*Buteo swainsoni*	116,000 (1%)
Tricolored blackbird	*Agelaius tricolor*	14,000 (0.1%)
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	22,000 (0.2%)
Willow flycatcher (including southwestern)	*Empidonax traillii (*including *extimus*)	46,000 (0.5%)
Yuma Ridgway's rail	*Rallus obsoletus yumanensis*	6,000 (0.1%)
Fish		
Desert pupfish	*Cyprinodon macularius*	500 (0.01%)
Owens pupfish	*Cyprinodon radiosus*	4,000 (0.04%)
Owens tui chub	*Siphateles (Gila) bicolor snyderi*	4,000 (0.04%)
Mammals		
Desert bighorn sheep	*Ovis canadensis nelsoni*	Intermountain: 2,412,000 (24%); Mountain: 3,634,000 (37%)
California leaf-nosed bat	*Macrotus californicus*	4,500,000 (45%)
Mohave ground squirrel	*Xerospermophilus mohavensis*	1,083,000 (11%)
Pallid bat	*Antrozous pallidus*	9,272,000 (93%)
Townsend's big-eared bat	*Corynorhinus townsendii*	7,903,000 (80%)
Plants		
Alkali mariposa-lily	*Calochortus striatus*	2,000 (0.02%)
Bakersfield cactus	*Opuntia basilaris* var. *treleasei*	79,000 (1%)
Barstow woolly sunflower	*Eriophyllum mohavense*	72,000 (1%)
Desert cymopterus	*Cymopterus deserticola*	67,000 (1%)
Little San Bernardino Mountains linanthus	*Linanthus maculatus*	83,000 (1%)
Mojave monkeyflower	*Mimulus mohavensis*	128,000 (1%)
Mojave tarplant	*Deinandra mohavensis*	139,000 (1%)
Owens Valley checkerbloom	*Sidalcea covillei*	55,000 (1%)
Parish's daisy	*Erigeron parishii*	85,000 (1%)
Triple-ribbed milk-vetch	*Astragalus tricarinatus*	4,000 (0.04%)

Table III.7-81
Focus and Planning Species' Modeled Habitat within BLM LUPA

Common Name	Scientific Name	Acres (% of BLM LUPA)
Planning Species		
Mammals		
Burro deer	*Odocoileus hemionus eremicus*	762,000 (8%)
Desert kit fox	*Vulpes macrotis arsipus*	6,690,000 (67%)

Table III.7-82
Acreage of Landscape Habitat Linkages within the BLM LUPA by Ecoregion Subarea

Ecoregion Subarea	Desert Linkage Network (acres)
Cadiz Valley and Chocolate Mountains	709,000
Imperial Borrego Valley	188,000
Kingston and Funeral Mountains	138,000
Mojave and Silurian Valley	379,000
Owens River Valley (southern end)	150,00
Panamint Death Valley	149,000
Pinto Lucerne Valley and Eastern Slopes	201,000
Piute Valley and Sacramento Mountains	111,000
Providence and Bullion Mountains	377,000
West Mojave and Eastern Slopes	401,000
Total	**2,669,000**

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

III.7.9.1 Bureau of Land Management Land Use Plan Amendment Affected Environment for Special-Status Species Not Covered under the DRECP

The BLM LUPA affected environment supports 102 Non-Focus Species, differing by 21 fewer species than the list of Non-Focus Species found in the DRECP Plan Area (Table III.7-57) provided in Section III.7.6.4. Non-Focus Species within the DRECP Plan Area not found within the BLM LUPA lands include white-tailed kite (*Elanus leucurus*), redhead, Tehachapi pocket mouse, Palm Springs pocket mouse (*Perognathus longimembris bangsi*), hoary bat, big free-tailed bat (*Nyctinomops macrotis*), Arizona myotis (*Myotis occultus*), western small-footed myotis, western yellow bat, Cima milk-vetch (*Astragalus cimae* var. *cimae*), flat-seeded spurge (*Chamaesyce platysperma*), Munz's cholla (*Cylindropuntia munzii)*, Sodaville milk-vetch, Parish's alkali grass, Parry's spineflower (*Chorizanthe parryi* var. *parryi*),

Mojave Desert plum (*Prunus eremophila*), San Bernardino aster (*Symphyotrichum defoliatum*), small-flowered bird's beak (*Cordylanthus parviflorus*), recurved larkspur (*Delphinium recurvatum*), Thorne's buckwheat (*Eriogonum thornei*), and Piute Mountains jewel-flower (*Streptanthus cordatus var. piutensis*). Four of the Non-Focus Species are only found on BLM LUPA lands: Shoshone Cave whip-scorpion (*Hubbardia shoshonensis*), Amargosa speckled dace (*Rhinichthys osculus* ssp.), Amargosa springsnail (*Pyrgulopsis amargosae*), and yellow-eared pocket mouse (*Perognathus xanthonotus*).

Several of the non-Focus Species found in the BLM LUPA lands within the DRECP are federally listed as threatened or endangered and have designated critical habitat present within BLM LUPA lands. Table III.7-83 details these species including the total area within the BLM LUPA lands.

Table III.7-83
Designated Critical Habitat Within the BLM LUPA Lands for Non-Focus Species

Common Name	Scientific Name	Federal Status[1]	State Status[2]	Acres of Critical Habitat within the BLM LUPA Lands
Amphibians				
Arroyo toad	*Anaxyrus (Bufo) californicus*	FE	CSC	30
Mammals				
Amargosa vole	*Microtus californicus scirpensis*	FE, BLM[3]	SE	4,000
Bighorn sheep (Peninsular Ranges DPS)	*Ovis canadensis nelsoni*	FE, BLM	ST, FP	7,000
Plants				
Amargosa nitrophila	*Nitrophila mohavensis*	FE	SE, (CRPR 1B.2)	1,000
Ash Meadows gumplant	*Grindelia fraxinipratensis*	FT	(CRPR 1B.2)	300
Cushenbury buckwheat	*Eriogonum ovalifolium* var. *vineum*	FE	(CRPR 1B.1)	400
Cushenbury milk-vetch	*Astragalus albens*	FE	(CRPR 1B.1)	800
Cushenbury oxytheca	*Acanthoscyphus parishii* var. *goodmaniana*	FE	(CRPR 1B.1)	80
Lane Mountain milk-vetch	*Astragalus jaegerianus*	FE	(CRPR 1B.1)	10,000
Pierson's milk-vetch	*Astragalus magdalenae* var. *peirsonii*	FT	SE	12,000

1 Federal Status – FE: Federally Endangered; FT: Federally Threatened; FD: Federally Delisted; FS: USFS Sensitive; BLM: Bureau Land Management Sensitive; BCC: USFWS Bird of Conservation Concern; Eagle Act: Bald and Golden Eagle Protection Act.

2 State Status – SE: California Endangered; ST: California Threatened; SC: California Candidate for listing; CSC: California Species of Special Concern; FP: Fully Protected; WBWG: Western Bat Working Group species. California Rare Plant Rank

(CRPR, formerly known as the CNPS List) – CRPR 1B: Considered rare, threatened, or endangered in California and elsewhere; CRPR 2: Considered rare, threatened, or endangered in California, but more common elsewhere;

[3] Indicates BLM species that have associated CMAs, detailed in Volume II, Chapter II.3, Section II.3.4.2.

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

III.7.10 Biological Resources Outside the DRECP Plan Area

III.7.10.1 Transmission

The California Floristic Province, which encompasses the area west of the deserts and Sierra Nevada–Cascade mountain crests, is one of the top 25 biodiversity hotspots in the world, with over 2,100 endemic plant species and 71 endemic vertebrate species (Myers et al. 2000). A wide variety of listed and special-status species is found outside the DRECP Plan Area, in areas that may be affected by renewable energy transmission projects. Proposed projects outside of the DRECP Plan Area would be subject to additional review under CEQA or NEPA, as applicable.

III.7.10.1.1 Regulatory Setting

The regulatory setting presented in Section III.7.1 also applies to the transmission corridors outside of the DRECP Plan Area. Additionally, several Land Management Plans, HCPs, and other land use plans and policies apply to areas outside of the DRECP Plan Area. Projects located partially within these areas may be subject to the specific requirements of each applicable plan or at a minimum would be reviewed for consistency with applicable plans. Additional regulations may apply to transmission corridors sited outside of the DRECP Plan Area, depending on specific location.

Federal

USFS Land Management Plan: Southern California National Forests

Adopted in 2006, this planning effort updated the joint Land Management Plans for the four Southern California national forests: Angeles, San Bernardino, Los Padres, and Cleveland. The Land Management Plans provide forest-wide strategic direction designed to achieve the desired conditions described for each of the Southern California national forests and emphasize the protection of threatened and endangered species. A proposed amendment to the Land Management Plans is being produced to revise land use zone allocations for select Inventoried Roadless Areas within the four forests and amend Land Management Plan monitoring protocols.

Compliance with the Land Management Plans typically requires the preparation of documents assessing impacts to biological resources, including a Management Indicator Species Report, a Biological Evaluation/Biological Assessment, revegetation and weed management plans, and (where needed) an assessment of impacts to Riparian Conservation Areas. NEPA documents must also consider impacts to species designated as "Sensitive" by the USFS on each forest.

South Coast RMP

The South Coast RMP provides guidance for the management of approximately 300,000 acres of BLM-administered public lands in portions of five Southern California counties: San Diego, Riverside, San Bernardino, Orange, and Los Angeles. The South Coast RMP was completed and signed in 1994. Since that time there have been significant changes in the patterns of urban growth, increased demands on the resources of the public lands, changing policies and emphasis on the management of public lands and local land use planning, and the listing of additional threatened or endangered species. The South Coast RMP currently is being revised.

California Desert Conservation Area Plan (1980, as amended)

Administered by the BLM, the CDCA Plan requires that proposed development projects be compatible with policies that provide for the protection, enhancement, and sustainability of fish and wildlife species, wildlife corridors, riparian and wetland habitats, and native vegetation resources.

Northern and Eastern Colorado Desert Coordinated Management Plan (NECO)

The NECO is a landscape-scale, multiagency planning effort that protects and conserves natural resources while simultaneously balancing human uses of the California portion of the Sonoran Desert ecosystem. The planning area encompasses over five million acres and hosts 60 special-status plant and animal species. NECO amends the 1980 CDCA plan.

Local/Regional

San Diego Multiple Species Conservation Program (MSCP)

The MSCP, approved in 1996, provides a framework for protection of 23 vegetation types and 85 species in southwestern San Diego County. The Multiple Habitat Planning Area was designated within the permanent MSCP preserve and will be assembled through conservation of lands already in public ownership (85,000 acres), purchase of private lands from willing sellers (27,000 acres), and additional contributions through mitigation for development impacts (63,000 acres). The MSCP is to be implemented by the county and 11 cities in the DRECP Plan Area through Subarea Plans.

Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP)

The Western Riverside MSHCP is a comprehensive, multijurisdictional HCP and NCCP focusing on conservation of species and their associated habitats in Western Riverside County. This MSHCP is one of several large, multijurisdictional habitat-planning efforts in Southern California with the overall goal of maintaining biological and ecological diversity within a rapidly urbanizing region. The MSHCP Plan Area encompasses approximately 1.26 million acres (2,000 square miles); it includes all unincorporated Riverside County land west of the crest of the San Jacinto Mountains to the Orange County line, as well as the jurisdictional areas of the cities of Temecula, Murrieta, Lake Elsinore, Canyon Lake, Norco, Corona, Riverside, Moreno Valley, Banning, Beaumont, Calimesa, Perris, Hemet, and San Jacinto.

Coachella Valley MSHCP

The Coachella Valley MSHCP provides a regional vision for balanced growth to meet the requirements of federal and state endangered species laws, while promoting enhanced opportunities for recreation, tourism, development, and job growth. The Coachella Valley MSHCP aims to conserve over 240,000 acres of open space, and protect 27 plant and animal species and 27 vegetation types. The Coachella Valley Association of Governments served as lead agency for plan review and consideration. Participants (permittees) include Riverside County, the cities of Cathedral City, Coachella, Indian Wells, Indio, La Quinta, Palm Desert, Palm Springs, Rancho Mirage as well as the Coachella Valley Water District and Imperial Irrigation District.

San Joaquin County MSHCP

The San Joaquin County MSHCP provides a strategy for balancing the need to conserve open space and the need to convert open space to non-open space uses while protecting the region's agricultural economy; preserving landowner property rights; providing for the long-term management of plant, fish, and wildlife species, especially those that are currently listed, or may be listed in the future, under the ESA or CESA; providing and maintaining multiple-use open spaces which contribute to the quality of life of the residents of San Joaquin County; and accommodating a growing population while minimizing costs to project proponents and society at large.

Kern County Valley Floor HCP

The Kern County Valley Floor HCP is a long-term program designed to conserve federally protected species, state-protected species, and/or other species of concern. It establishes the conditions under which Kern County, the California Division of Oil, Gas, and Geothermal Resources, and other program beneficiaries are seeking authorization

to allow the taking of multiple federally and state-protected species. It includes conservation strategies that will mitigate for the continued operation and development of oil and gas production, water district activities, urban development, and the development and maintenance of public infrastructure.

Clark County MSHCP

The Clark County MSHCP and the resultant USFWS Section 10(a) incidental take permit are designed to allow the incidental take of species covered by the ESA (Clark County 2000) on nonfederal lands. The MSHCP provides for the long-term conservation and recovery of native species of wildlife and plants and their vegetation types, while allowing for regulated development of lands within Clark County. The plan is designed to comply with statutory and regulatory requirements of the ESA and NEPA. The plan represents a county-wide conservation strategy that emphasizes ecosystem-level management of natural resources. The plan supplants earlier species-specific conservation efforts.

III.7.10.1.2 Transmission

The transmission required outside of the DRECP Plan Area would generally fall into four geographic areas: San Diego, Los Angeles, Central Valley, and North Palm Springs–Riverside. An overview of the biological resources in each of these areas is provided in the following discussion.

III.7.10.1.2.1 San Diego Area

The San Diego area corridor exits the DRECP boundary southwest through the Jacumba area, heads northwest through the McCain Valley, southwest, then south around the Cleveland National Forest, and then heads west and northwest through Alpine and urban and suburban areas in the cities of Santee, El Cajon, and San Diego.

Vegetation and Habitats. The southeastern portion of the corridor east of Jacumba is predominately desert scrub and sand habitats composed of Sonoran creosote bush scrub, Sonoran Desert mixed scrub, Sonoran wash scrub, and Sonoran mixed woody scrub. West of Jacumba, the vegetation transitions into semi-desert chaparral.

As the corridor passes northwest through the McCain Valley, south around the southern boundary of the Cleveland National Forest, and northwest through the Cleveland National Forest, chaparral, including northern mixed chaparral, and semi-desert chaparral are the predominant vegetation types. Other vegetation types in the area include sage scrub, grasslands, oak riparian forest, oak woodlands, and riparian forest.

From the existing Suncrest Substation northwest toward the corridor's terminus at the Sycamore Substation, the predominant vegetation types are coastal sage scrub and

chaparral; many areas have burned in recent years and are now in various stages of succession. Other vegetation types include southern coast live oak riparian forest, southern cottonwood–willow riparian forest, mulefat scrub, coast live oak woodland, non-native grassland, vernal pools, and developed areas.

Vegetation along this corridor that is within potentially jurisdictional waters of the state or waters of the United States along includes Sonoran wash scrub, mulefat scrub, southern willow scrub, southern cottonwood–willow riparian forest, southern riparian forest, and southern coast live oak riparian woodland.

Special-Status Species. The desert scrub, chaparral, and other vegetation types along the central and southeastern portions of the corridor may support several special-status plants including, but not limited to Orcutt's brodiaea (*Brodiaea orcutti*), Dunn's mariposa lily (*Calochortus dunnii Purdy*), Dehesa nolina (*Nolina interrata*), San Diego thornmint (*Acanthomintha ilicifolia*), Gander's ragwort (*Packera gander*), peninsular manzanita (*Arctostaphylos peninsularis*), delicate clarkia (*Clarkia delicata*), Tecate tarplant (*Deinandra floribunda*), Baja navarretia (*Navarretia peninsularis*), and southern jewel flower (*Streptanthus campestris*). Special-status animals with potential to occur include, but are not limited to Quino checkerspot butterfly (*Euphydryas editha quino*), barefoot banded gecko (*Coleonyx switaki*), burrowing owl, Swainson's hawk, least Bell's vireo, southwestern willow flycatcher, bald eagle (wintering), coast horned lizard, Bell's sparrow (*Artemisiospiza belli*), Cooper's hawk (*Accipiter cooperii*), golden eagle, rufous-crowned sparrow, yellow warbler, white-tailed kite, San Diego black-tailed jack rabbit (*Lepus californicus* ssp. *bennettii*), and desert bighorn sheep.

Management Indicator Species and their associated habitat type/management issue potentially requiring assessment on the Cleveland National Forest include mountain lion (fragmentation), mule deer (healthy diverse habitats), song sparrow (riparian habitat), and Engelmann oak (*Quercus engelmannii*) (oak regeneration).

The coastal sage scrub and other habitat toward the northwestern portion of the corridor may support coastal California gnatcatcher (*Polioptila californica californica*), least Bell's vireo, northern harrier and yellow warbler, California adolphia (*Adolphia californica*), Del Mar manzanita (*Arctostaphylos glandulosa* ssp. *crassifolia*), summer holly (*Comarostaphylis diversifolia*), San Diego sand aster (*Corethrogyne filaginifolia* var. *incana*), San Diego barrel cactus (*Ferocactus viridescens*), and Nuttall's scrub oak (*Quercus dumosa*). Vernal pools along the alignment may support any of several special-status plants and invertebrates, such as San Diego fairy shrimp (*Branchinecta sandiegonensis*) and San Diego mesa mint (*Pogogyne abramsii*).

Special Management Areas and Designated Critical Habitat

The transmission lines in the San Diego area would be in or near several special management areas outside of the DRECP Plan Area, as shown in Table III.7-84.

Table III.7-84
Special Management Areas and Designated Critical Habitat Outside the DRECP Plan Area – San Diego Area

Special Management Area	Line Segment(s)
Cleveland National Forest	Ocotillo to Suncrest Suncrest to Sycamore
San Diego County MSCP	Ocotillo to Suncrest
San Diego County Multiple Habitat Conservation Open Space Plan	Suncrest to Sycamore
Jacumba Wilderness	Ocotillo to Suncrest
Carrizo Gorge Wilderness	Ocotillo to Suncrest
Hauser Wilderness	Ocotillo to Suncrest
Pine Creek Wilderness	Ocotillo to Suncrest
Anza-Borrego Desert State Park	Ocotillo to Suncrest
Proposed Viejas Mountain Research Natural Area	Suncrest to Sycamore
Viejas Mountain Critical Biological Area	Suncrest to Sycamore
El Capitan Preserve	Suncrest to Sycamore
San Vicente Highlands	Suncrest to Sycamore
Sycamore Canyon Preserve	Suncrest to Sycamore
Designated Critical Habitat	
Quino checkerspot butterfly	Ocotillo to Suncrest
Coastal California gnatcatcher	Suncrest to Sycamore
San Diego thornmint	Suncrest to Sycamore
Areas of Critical Environmental Concern	
Table Mountain	Ocotillo to Suncrest
In-Ko-Pah Mountains	Ocotillo to Suncrest

III.7.10.1.2.2 Los Angeles Area

There are three corridors in the Los Angeles area. The area includes the Los Angeles basin and surrounding areas, including portions of the high desert in Los Angeles and San Bernardino counties and the Angeles and San Bernardino national forests in the San Gabriel Mountains.

Vegetation and Habitats. The Vincent Substation is in the southern portion of the Antelope Valley in Los Angeles County, just north of the northern boundary of the Angeles National Forest (ANF). This area is a transitional zone between the desert vegetation to the north and the montane scrub and woodlands to the south, in the San Gabriel Mountains. Common vegetation types in the desert foothills of the San Gabriel Mountains include Mojave juniper woodland and scrub, California annual grassland, Mojave pinyon woodland, desert wash, big sagebrush scrub, and mixed chaparral.

Steep topography is common farther south in the San Gabriel Mountains. Diverse native shrublands, woodlands, and several prominent riparian corridors occur here. Jurisdictional drainages range from perennial creeks in larger canyons to small intermittent or ephemeral streams, washes, and dry channels on adjacent slopes. The majority of the vegetation within the ANF portion of this corridor is mixed chaparral or chamise chaparral. Canyon oak forest and bigcone Douglas fir—canyon live oak forest are also common. Coastal vegetation types found on the southern slope of the San Gabriel Mountains include southern coast live oak riparian forest and coastal sage scrub. Several riparian vegetation types are located in deeper canyons along rivers or creeks: southern willow scrub, southern sycamore alder riparian woodland, southern cottonwood–willow riparian forest, and southern arroyo willow riparian forest.

South of the ANF, the transmission corridors traverse the southern foothills of the San Gabriel Mountains. The easternmost corridor, following Segment 7 of the Tehachapi Renewable Transmission Project, traverses coastal sage scrub habitat down to the base of the foothills. From this point, the corridor continues south through residential neighborhoods to the San Gabriel River. The corridor parallels the San Gabriel River and the San Gabriel Freeway in a generally southwest direction. The San Gabriel River in this area is surrounded primarily by urban development. It is channelized within concrete banks and the channel bottom is intermittently lined with concrete though several soft-bottom sections support large stands of native vegetation. In some areas, there also are large stands of native vegetation on adjacent uplands.

As the corridor extends southwest, it traverses primarily urban development and highly degraded, ruderal habitats. However, patches of native vegetation, including riparian habitat such as mulefat and southern willow scrub, Riversidean alluvial fan sage scrub, and coastal sage scrub are interspersed among large blocks of development. Within and adjacent to the San Gabriel River corridor, the Santa Fe Dam Floodplain Significant Ecological Area, Whittier Narrows Dam Recreation Area, and Montebello Oil Fields support large stands of native coastal sage and Riversidean alluvial fan sage scrub, as well as smaller ribbons of riparian scrub.

From the southern boundary of the ANF, the western corridor (following Segment 11 of the Tehachapi Renewable Transmission Project), passes through Eaton Canyon and extends south to the existing Mesa Substation through an existing utility corridor. This segment traverses heavily developed areas with major roadways and residential, commercial, and industrial properties. Just north of the Mesa Substation, the segment lies just west of the Whittier Narrows Dam Recreation Area and just northwest of the Montebello Oil Fields.

The eastern most corridor in the Los Angeles area exits the San Bernardino National Forest (SBNF) in the southern foothills of the San Gabriel Mountains and follows the foothills west through the foothill vegetation types of the Inland Empire and San Gabriel Valley. Here the corridor crosses residential developments interspersed with open space supporting coastal sage scrub, California annual grasslands, and both natural and channelized drainages. In the San Dimas area, the route continues away from the foothills in a west–southwest direction through the urbanized San Gabriel Valley in the Los Angeles basin, across habitat similar to those described for the corridors south of the ANF. This area is largely urban, and habitat for special-status species is generally limited and degraded where it does occur.

From a wildlife movement perspective, the San Gabriel Mountains are a large block of continuous open space surrounded by transitional ecotones, including the arid desert regions to the north and the highly developed San Gabriel Valley and Los Angeles basin to the south. As a result, the ANF and SBNF provide expansive habitat for wildlife movement and represent a broad, regional linkage between the San Bernardino Mountains to the east and the Santa Susana and Sierra Madre mountains to the west.

Special-Status Species. The ANF and SBNF portions of these alignments generally support high-quality habitat for plants and wildlife. Listed and special-status species occurring in the San Gabriel Mountains include, but are not limited to, California condor, California spotted owl (*Strix occidentalis occidentalis*), least Bell's vireo, southwestern willow flycatcher, California red-legged frog (*Rana draytonii*), Santa Ana sucker (*Catostomus santaanae*), thread-leaved brodiaea (*Brodiaea filifolia*), slender-horned spineflower (*Dodecahema leptoceras*), and spreading navarretia (*Navarretia fossalis*). The eastern San Gabriel Mountains (in the SBNF) also support Sierra Madre yellow-legged frog (*Rana muscosa*) and bighorn sheep. Swainson's hawk is a noteworthy listed and special-status species occurring outside the DRECP Plan Area, north of the San Gabriel Mountains.

South of the ANF in the Los Angeles basin, remnant or fragmented habitats and riparian corridors are occupied by least Bell's vireo and coastal California gnatcatcher. The southwestern willow flycatcher historically nested in the area, and still occurs in riparian habitats during migration. Listed plants recorded in this area include Braunton's milk-vetch (*Astragalus brauntonii*) and Nevin's barberry (*Berberis nevinii*).

Special Management Areas and Designated Critical Habitat

The transmission corridors in the Los Angeles area would be in or near several special management areas outside of the DRECP Plan Area, as shown in Table III.7-85.

Table III.7-85
Special Management Areas and Designated Critical Habitat Outside the DRECP Plan Area – Los Angeles Area

Special Management Area	Line Segment(s)
Angeles National Forest	Vincent to Mesa Vincent to Lighthipe
San Bernardino National Forest	Station 7 to Station B/Station 8
Designated Critical Habitat	
Sierra Madre yellow-legged frog	Station 7 to Station B/Station 8
Santa Ana sucker	Vincent to Lighthipe Vincent to LADWP Station E
San Bernardino kangaroo rat	Station 7 to Station B/Station 8
Southwestern willow flycatcher	Vincent to Mesa Vincent to Lighthipe Station 7 to Station B/Station 8 Vincent to LADWP Station E
Coastal California gnatcatcher	Vincent to Mesa Vincent to Lighthipe Station 7 to Station B/Station 8
Thread-leaved brodiaea	Station 7 to Station B/Station 8

LADWP = Los Angeles Department of Water and Power

III.7.10.1.2.3 North Palm Springs–Riverside Area

The North Palm Springs–Riverside Area includes part of the Coachella Valley in the Colorado Desert of Riverside County, the Inland Empire area of western Riverside County and southwestern San Bernardino County, and the high desert of San Bernardino County just north of Cajon Pass and the San Gabriel and San Bernardino mountains.

Vegetation and Habitats. Transmission in the North Palm Springs–Riverside Area includes several potential corridors. The portion of the corridor between the DRECP Plan Area (near Chiriaco Summit) and the Devers Substation generally follows the I-10 corridor. This corridor traverses patches of mesquite hummocks, stabilized sand fields, stabilized desert dunes, ephemeral sand fields, dry desert wash woodland, and Sonoran mixed woody and succulent scrub that are interspersed with areas of Sonoran creosote bush scrub. The corridor also crosses scattered agricultural areas, disturbed areas, and developed areas. The route runs just south of Joshua Tree National Park. This alignment crosses the Coachella

Valley National Wildlife Refuge. Due to the proximity to I-10, many areas along this alignment show some degree of human disturbance, including trash dumping and OHV use.

From Desert Center and heading west, the alignment follows the I-10 corridor through the western Colorado Desert in Riverside County to the Vista Substation in the urbanized Inland Empire of San Bernardino County. Native vegetation in the desert portion of the corridor includes Sonoran creosote bush scrub, Sonoran mixed woody and succulent scrub, and brittlebush scrub, saltbush scrub, catclaw acacia, and catclaw acacia/grassland. Disturbed vegetation, consisting of ruderal and non-native grasslands, is also present.

Disturbances to the native habitats between the Devers Substation and Whitewater River include wind farms and scattered residential properties. The Whitewater River, at the location where the alignment would cross, is a deep, cobble-bottomed gorge with steep banks. Sandbar willow is present but sparse, and water is present part of the year. The floodplain of Whitewater River is a sand source and transport corridor for wind-blown sand habitat downstream. It is also an important linkage to other habitat areas located south of I-10. This route would also traverse large desert washes flowing from canyons in the foothills of the San Bernardino Mountains. In the San Gorgonio Pass between Whitewater River and the city of Cabazon, the line would traverse creosote bush scrub, mixed woody and succulent scrub, and desert dry wash woodlands. These areas are also important sand source and transport corridors to habitat south of I-10. The pass is a developed wind resource area, with multiple wind energy developments that constitute the majority of development in this area.

From the Cabazon area through Banning and Beaumont, vegetation in the corridor primarily consists of non-native grasslands, Riversidean sage scrub, chaparral, catclaw scrub, and disturbed areas. The drainages in this area support either a sparse distribution of mixed scalebroom and desert willow or riparian vegetation types. Along the San Gorgonio River, vegetation is sparse scalebroom with scattered desert willows and some coast live oak, sycamore, and cottonwood trees. Just west of the San Gorgonio River, the vegetation is mixed Riversidean sage scrub and chaparral on the undisturbed foothills north of Banning and Beaumont. Farther west, the corridor is dominated by non-native grasslands, developed lands, and other areas disturbed by human activities. These developed and disturbed areas include a patchy distribution of non-native grasslands and ruderal areas that include non-native and weedy plant species.

As the corridor continues west through Calimesa and San Timoteo Canyon, vegetation is a patchy mosaic of chaparral, mixed sage scrub/chaparral/grassland, oak woodland, and non-native grassland. Periodic fires have converted native shrublands to non-native grasslands in some areas. A few areas support scattered oak woodlands, and the San Timoteo Creek supports southern cottonwood–willow riparian forest, southern sycamore–

alder riparian woodland, and southern coast live oak riparian forest. There also are developed lands and agricultural lands along San Timoteo Canyon.

West of San Timoteo Canyon, the corridor traverses hills dominated by non-native grasslands and mixed sage scrub. The alignment crosses several residential developments in this area before reaching the Vista Substation.

From Vista Substation to Rancho Vista Substation, the corridor traverses developed areas, with the exception of the Santa Ana River just west of the Vista Substation and scattered areas supporting non-native annual grasslands, disturbed sage scrub vegetation types, or fallow agricultural fields.

From Rancho Vista Substation to Lugo Substation, the corridor traverses developed areas just west of and parallel to I-15. The route crosses the southern boundary of the SBNF in the vicinity of the easternmost line in the Los Angeles area. It would parallel that line to the Lugo Substation just north of the Cajon Pass.

The corridor from Devers Substation to Valley Substation generally follows the route previously described for Devers to Vista until southwest of Cabazon, where it veers southwest and climbs into the foothills of the San Jacinto Mountains. On the lower slopes, vegetation is dominated by brittlebush scrub and cheesebush; on the higher slopes it transitions to semi-desert chaparral, sage scrub, and chamise chaparral. Farther west, vegetation types on the hills south of Banning and Beaumont, the hills adjacent to Highway 79, and in the Lakeview Mountains include buckwheat scrub, mixed buckwheat–chamise chaparral, saltbush scrub, and scattered patches of Riversidean sage scrub. Non-native grasslands and mixed scrub vegetation types are present through the "Badlands" between Beaumont and the San Jacinto Valley. The route crosses Smith Creek south of Banning, which supports a sparse riparian vegetation. It also crosses the San Jacinto River in the San Jacinto Valley. Numerous small ephemeral drainages are present in the foothills of the San Jacinto Mountains, in the Badlands area, and in the Lakeview Mountains.

This corridor crosses through developed areas at the base of the foothills southwest of Cabazon, east of Old Banning–Idyllwild Road, south of Banning, and north of the Valley Substation. Scattered rural development also occurs in the areas south of Banning and Beaumont and in portions of San Jacinto and Romoland. It crosses agricultural areas in the San Jacinto Valley between Gilman Springs Road and just south of Ramona Expressway and in portions of Romoland, located north of the Valley Substation.

A third corridor would include lines from the IID Midway X Substation to the Devers Substation. The portion of this corridor in Riverside County would be outside of the DRECP boundary. This line would travel northwest through the eastern portion of the Coachella Valley and would run near the northeastern edge of the Salton Sea. Vegetation along this

portion of the route is similar to the area between Desert Center and Devers Substation, and includes desert scrub vegetation types of varying levels of disturbance, annual grasslands, some developed areas, stabilized sand dunes, and ephemeral drainages and desert washes (some supporting sparse desert riparian vegetation). Just north of the DRECP Plan Area boundary, the corridor crosses Dos Palmas Preserve, an oasis of fan palms in a perennial marsh.

An additional corridor would extend from Rancho Vista Substation to Serrano Substation. From the Rancho Vista Substation, this line would travel southwest through developed areas interspersed with active and fallow agriculture in and around Ontario and Chino. West of SR-71, the line would traverse non-native annual grasslands and coastal sage scrub vegetation types of varying levels of disturbance within the Chino Hills. Several canyons support oak woodlands and fragments of riparian habitats. On the south side of the Chino Hills, the route enters mostly residential developed areas. It continues south over SR-91 in primarily developed areas interspersed with parks and small blocks of open space supporting grasslands, coastal sage scrub, some areas of oak woodlands, and a golf course.

Special-Status Species. Listed wildlife species in this region include, but are not limited to, desert tortoise, Coachella Valley fringe-toed lizard, Stephen's kangaroo rat (*Dipodomys stephensi*), San Bernardino kangaroo rat (*Dipodomys merriami parvus*), least Bell's vireo, southwestern willow flycatcher, and coastal California gnatcatcher. Golden eagles nest in the San Bernardino Mountains and foothills, and forage along the foothills and desert floor, and burrowing owls are also known from the region. Listed plants include Mojave tarplant, Coachella Valley milk-vetch, Nevin's barberry, slender-horned spineflower, Munz's onion (*Allium munzii*), San Diego ambrosia (*Ambrosia pumila*), Santa Ana River woollystar (*Eriastrum densifolium* ssp. *sanctorum*), San Jacinto Valley crownscale (*Atriplex coronata* var. *notatior*), and spreading navarretia.

Special Management Areas and Designated Critical Habitat

The transmission lines in the North Palm Springs–Riverside area would be in or near several special management areas outside of the DRECP Plan Area, as shown in Table III.7-86.

Table III.7-86
Special Management Areas and Designated Critical Habitat
Outside the DRECP Plan Area – North Palm Springs–Riverside Area

Special Management Area	Line Segment(s)
CDCA Plan	Desert Center to Devers Devers to Rancho Vista Devers to Valley
NECO	Desert Center to Devers Devers to Rancho Vista Devers to Valley
Coachella Valley MSHCP	Desert Center to Devers Devers to Rancho Vista Devers to Valley
Western Riverside MSHCP	Devers to Rancho Vista Devers to Valley
Coachella Valley National Wildlife Refuge	IID Midway X to Devers
Sonny Bono Salton Sea National Wildlife Refuge	IID Midway X to Devers
San Jacinto Wildlife Area	Devers to Valley
San Jacinto and Santa Rosa Mountains National Monument	Devers to Valley
San Bernardino National Forest	Rancho Vista to Lugo Devers to Valley
Joshua Tree National Park	Desert Center to Devers
Mecca Hills (a Riverside County Natural Area)	Desert Center to Devers
Coachella Valley Preserve	Desert Center to Devers
Indio Hills Palms State Park	IID Midway X to Devers Colorado River to Devers
San Timoteo Canyon State Park	Devers to Rancho Vista
Designated Critical Habitat	
Desert tortoise	Desert Center to Devers IID Midway X to Devers
Coachella Valley fringe-toed lizard	Desert Center to Devers IID Midway X to Devers
San Bernardino kangaroo rat	Devers to Valley Devers to Rancho Vista Rancho Vista to Lugo
Spreading navarretia	Devers to Valley
Santa Ana sucker	Devers to Rancho Vista
Southwestern willow flycatcher	Devers to Rancho Vista
Coastal California gnatcatcher	Devers to Rancho Vista

Table III.7-86
Special Management Areas and Designated Critical Habitat
Outside the DRECP Plan Area – North Palm Springs–Riverside Area

Special Management Area	Line Segment(s)
Areas of Critical Environmental Concern	
Potrero ACEC, South Coast Land Use Plan	Devers to Valley
Whitewater Canyon ACEC	Devers to Rancho Vista
Big Morongo Canyon Preserve/ACEC	Devers to Sub 12
Coachella Valley fringe-toed Lizard ACEC	Desert Center to Devers
Dos Palmas Preserve/ACEC	IID Midway X to Devers

III.7.10.1.2.4 Central Valley Area

The transmission corridor in the Central Valley Area exits the DRECP boundary northwest of Whirlwind Substation near Tehachapi. It extends westward over the Tehachapi Mountains, descends into the southern San Joaquin Valley and travels north in the foothills of the Diablo Mountains before reaching its terminus near Tracy.

Vegetation and Habitats. Outside of the DRECP boundary near Tehachapi, predominant vegetation types include Mojave creosote bush scrub, big sagebrush scrub, rabbitbrush scrub, and desert saltbush scrub. Over the Tehachapi pass, the vegetation transitions to chaparral and areas of southern cottonwood–willow riparian forest. It then descends northwest into the southern San Joaquin Valley, which is almost entirely irrigated agriculture and developed lands. As it extends north along the eastern foothills of the Diablo Mountains north to Tracy, the predominant vegetation type is non-native annual grassland used for grazing. Other vegetation types along this Central Valley alignment may include alkaline meadow, freshwater marsh, Great Valley cottonwood riparian forest, sycamore alluvial woodland, mulefat scrub, and saltbush scrub.

Special-Status Species. The Tehachapi area supports a diversity of special-status species including, but not limited to, burrowing owl, California horned lark (*Eremophila alpestris actia*), Cooper's hawk, golden eagle, Le Conte's thrasher, loggerhead shrike, long-eared owl, merlin, northern harrier, prairie falcon, and Vaux's swift (*Chaetura vauxi*). Desert scrub habitats may support special-status rodents such as yellow-eared pocket mouse, and Tehachapi pocket mouse. Special-status plants with regional potential to occur include white pygmy poppy (*Canbya candida*), golden violet (*Viola aurea*), Kern buckwheat, Charlotte's phacelia, and Bakersfield cactus, Tehachapi (flax-like) monardella (*Monardella linoides* ssp. *oblonga*), pale-yellow layia (*Layia heterotricha*), slender nemacladus (*Nemacladus gracilis*), Mt. Pinos larkspur (*Delphinium parryi* ssp. *purpureum*), adobe yampah (*Perideridia pringlei*), and Piute cypress (*Hesperocyparis nevadensis*).

Areas converted to agriculture such as those in the San Joaquin Valley do not support a high diversity of special-status wildlife, but may provide suitable foraging habitat for raptors including ferruginous hawk, northern harrier, prairie falcon, and Swainson's hawk, as well as species adapted to human disturbance such as burrowing owl. Swainson's hawk, white-tailed kites, and loggerhead shrikes may nest in trees on the valley floor. Western pond turtle (*Emys marmorata*) may occur in drainages between agriculture fields. Tricolored blackbirds may nest in grain fields. Special-status animals potentially occurring along the foothills in grassland habitats include, but are not limited to American badger, blunt-nosed leopard lizard (*Gambelia sila*), California red-legged frog, foothill yellow-legged frog (*Rana boylii*), giant kangaroo rat (*Dipodomys ingens*), Nelson's antelope squirrel (*Ammospermophilus nelson*), San Joaquin kit fox (*Vulpes macrotis mutica*), San Joaquin pocket mouse (*Perognathus inornatus*), San Joaquin whipsnake (*Masticophis flagellum ruddocki*), short-nosed kangaroo rat (*Dipodomys nitratoides brevinasus*), and Tulare grasshopper mouse (*Onychomys torridus tularensis*). Special-status plant species with potential to occur include, but are not limited to, chaparral ragwort (*Senecio aphanactis*), Lost Hills crownscale (*Atriplex vallicola*), Munz's tidy-tips (*Layia munzii*), Panoche pepper grass (*Lepidium jaredii album*), recurved larkspur, round-leaved filaree (*California macrophylla*), San Joaquin woollythreads (*Monolopia congdonii*), and Temblor buckwheat (*Eriogonum temblorense*).

Special Management Areas and Designated Critical Habitat

The transmission lines in the Central Valley area would be in or near several special management areas outside of the DRECP Plan Area, as shown in Table III.7-87.

Table III.7-87
Special Management Areas and Designated Critical Habitat Outside the DRECP Plan Area – Central Valley Area

Special Management Area	Line Segment(s)
San Joaquin County HCP	Los Banos to Tracy
Kern County Valley Floor HCP	Midway to Gates Whirlwind to Midway
Metropolitan Bakersfield HCP	Whirlwind to Midway
Kern Water Bank HCP	Whirlwind to Midway
San Luis Reservoir State Recreation Area	Los Banos to Tracy Gates to Los Banos
Los Banos Wildlife Area	Gates to Los Banos
O'Neill Forebay Wildlife Area	Gates to Los Banos
San Luis Reservoir Wildlife Area	Gates to Los Banos

Table III.7-87
Special Management Areas and Designated
Critical Habitat Outside the DRECP Plan Area – Central Valley Area

Special Management Area	Line Segment(s)
Upper Cottonwood Creek Wildlife Area	Gates to Los Banos
Little Panoche Wildlife Area	Gates to Los Banos
Designated Critical Habitat	
California condor	Whirlwind to Midway
California red-legged frog	Los Banos to Tracy
Areas of Critical Environmental Concern	
Panoche/Coalinga	Gates to Los Banos
Kettleman Hills	Midway to Gates

III.7.10.2 Bureau of Land Management Land Use Plan Amendment

Biological resources found within CDCA Plan Area lands but outside the DRECP Plan Area (i.e., the DRECP boundary) are discussed in the following sections, including vegetation types and other landcovers, special-status species, and landscape habitat linkages and wildlife movement corridors.

The lands outside of the DRECP Plan Area that are found within the CDCA Plan Area are located in two primary regions: north of the DRECP Plan Area, and southwest of the DRECP Plan Area. As seen in Figure I.0-1 (see Volume I, Section I.0.1), the areas north of the DRECP Plan Area are found in Inyo County, primarily east of the Owens Valley within the White Mountain and Inyo Mountain ranges, with a small portion in Sequoia National Forest at the south end of the Sierra Nevada mountain range. The BLM LUPA lands southwest of the DRECP Plan Area include primarily the Coachella Valley in Riverside County, with small portions along the eastern edge of San Diego County and western edge of Imperial County.

III.7.10.2.1 Vegetation Types and Other Landcovers

Table III.7-88 provides the list of vegetation types outside the DRECP Plan Area within BLM LUPA lands.

Table III.7-88
Vegetation Types Outside of the DRECP Plan Area within BLM LUPA Lands

Vegetation Types	North of Plan Area (acres)	Southwest of Plan Area (acres)	Total (acres)
Dune/Rocky, Barren, and Unvegetated Vegetation Types			
Barren	22,300	1,100	23,000
Forest/Woodland Vegetation Types			
Closed-cone pine–cypress	—	300	300
Jeffrey pine	—	30	30
Juniper	—	32,000	32,000
Montane hardwood	—	300	300
Pinyon–juniper	63,000	10,100	73,000
Ponderosa pine	1,400	—	1,400
Sierran mixed conifer	—	100	100
Subalpine conifer	200	—	200
Grassland Vegetation Types			
Annual grassland	—	6,400	6,400
Riparian/Wetland Vegetation Types			
Desert wash/riparian	200	22,000	23,000
Freshwater emergent wetland	1,000	—	1,000
Lacustrine	20	80	100
Scrub and Chaparral Vegetation Types			
Alkali desert scrub	190,000	—	190,000
Chamise–redshank chaparral	—	8,300	8,300
Coastal scrub	—	10	10
Desert scrub	330,000	243,000	573,000
Desert succulent shrub	—	35,000	35,000
Joshua tree	19,000	2,500	21,000
Low sage	3,000	—	3,000
Mixed chaparral	10	13,000	13,000
Sagebrush	48,600	—	48,600
Other Land Covers			
Agricultural crop	400	3,600	4,000
Urban	—	1,400	1,400
Total	**379,000**	**679,000**	**1,058,000**

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the

totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

III.7.10.2.2 Special-Status Species

The species included in Table III.7-89 are those that have federal or state ranking as special-status species, as defined in Section III.7.6.4, that occur outside of the DRECP Plan Area on BLM LUPA lands.

Table III.7-89
Special-Status Species Outside of the DRECP Plan Area on BLM LUPA Lands

Common Name	Scientific Name	Federal Status[1]	State Status[2]	North	SW
Amphibians/Reptiles					
Agassiz's desert tortoise	*Gopherus agassizii*	FT	ST		X
Arroyo toad	*Anaxyrus californicus*	FE	CSC		X
Barefoot gecko	*Coleonyx switaki*	BLM	ST		X
Coast horned lizard	*Phrynosoma blainvillii*	—	CSC		X
Coachella fringe-toed lizard	*Rana muscosa*	FE	SC		X
Couch's spadefoot	*Scaphiopus couchii*	BLM	CSC		X
Rosy boa	*Charina trivirgata*	BLM, FS	—		X
Sierra Madre yellow-legged frog	*Rana muscosa*	FE	SC, CSC		X
Fish					
Desert pupfish	*Cyprinodon macularius*	FE	SE		X
Mohave tui chub	*Siphateles (Gila) bicolor mohavensis*	FE	SE		X
Birds					
Crissal thrasher	*Toxostoma crissale*	BLM, BCC	CSC		X
Gray vireo	*Vireo vicinior*	BLM, BCC	CSC	X	X
Inyo California towhee	*Melozone [=Pipilo] crissalis eremophilus*	FT	SE	X	
Le Conte's thrasher	*Toxostoma lecontei*	BLM	CSC	X	X
Least Bell's vireo	*Vireo bellii pusillus*	FE	SE		X
Loggerhead shrike	*Lanius ludovicianus*	BCC	CSC		X
Long-eared owl	*Asio otus*	BLM	CSC	X	
Southwestern willow flycatcher	*Empidonax extimus traillii*	FE	SE		X
Vermilion flycatcher	*Pyrocephalus rubinus*	—	CSC	X	X

Table III.7-89
Special-Status Species Outside of the DRECP Plan Area on BLM LUPA Lands

Common Name	Scientific Name	Federal Status[1]	State Status[2]	North	SW
Western snowy plover	*Charadrius alexandrinus nivosus*	FT	CSC	X	
Yellow warbler	*Dendroica petechia brewsteri*	BCC	CSC		X
Mammals					
American badger	*Taxidea taxus*	—	CSC	X	X
Big free-tailed bat	*Nyctinomops macrotis*	—	CSC		X
Hoary bat	*Lasiurus cinereus*	—	WBWG	X	
Long-eared myotis	*Myotis evotis*	BLM	—	X	
Nelson's bighorn sheep	*Ovis canadensis nelsoni*	BLM	FP	X	X
Palm Springs pocket mouse	*Perognathus longimembris bangsi*	BLM	CSC		X
Pocketed free-tailed bat	*Nyctinomops femorosaccus*	—	CSC		X
Spotted bat	*Euderma maculatum*	BLM	CSC	X	
Western mastiff bat	*Eumops perotis californicus*	BLM	CSC	X	X
Western small-footed myotis	*Myotis ciliolabrum*	BLM	—	X	
Western yellow bat	*Lasiurus xanthinus*	—	CSC		X
Plants					
Abrams' spurge	*Chamaesyce abramsiana*	—	(CRPR 2.2)		X
Amargosa beardtongue	*Penstemon fruticiformis* var. *amargosae*	BLM	(CRPR 1B.3)	X	
Annual rock-nettle	*Eucnide rupestris*	—	(CRPR 2.2)		X
Arizona pholistoma	*Pholistoma auritum* var. *arizonicum*	—	(CRPR 2.3)		X
Arizona spurge	*Chamaesyce arizonica*	—	(CRPR 2.3)		X
Ash Meadows buckwheat	*Eriogonum contiguum*	BLM	(CRPR 2.3)	X	
Bailey's greasewood	*Sarcobatus baileyi*	—	(CRPR 2.3)	X	
Barneby's phacelia	*Phacelia barnebyana*	—	(CRPR 2.3)	X	
Black bog-rush	*Schoenus nigricans*	—	(CRPR 2.2)	X	
Bristly scaleseed	*Spermolepis echinata*	—	(CRPR 2.3)		X
Brown turbans	*Malperia tenuis*	—	(CRPR 2.3)		X
California ayenia	*Ayenia compacta*	—	(CRPR 2.3)	X	

Table III.7-89
Special-Status Species Outside of the DRECP Plan Area on BLM LUPA Lands

Common Name	Scientific Name	Federal Status[1]	State Status[2]	North	SW
California satintail	*Imperata brevifolia*	—	(CRPR 2.1)	X	
California saw-grass	*Cladium californicum*	—	(CRPR 2.2)		X
Chaparral sand-verbena	*Abronia villosa* var. *aurita*	BLM	(CRPR 1B.1)		X
Charlotte's phacelia	*Phacelia nashiana*	BLM	(CRPR 1B.2)	X	
Chimney Creek nemacladus	*Nemacladus calcaratus*	—	(CRPR 1B.2)	X	
Coachella Valley milk-vetch	*Astragalus lentiginosus* var. *coachellae*	FE	(CRPR 1B.2)		X
Cove's cassia	*Senna covesii*	—	(CRPR 2.2)		X
Creamy blazing star	*Mentzelia tridentata*	BLM	(CRPR 1B.3)	X	
Curly herissantia	*Herissantia crispa*	—	(CRPR 2.3)		X
Cushenbury oxytheca	*Acanthoscyphus parishii* var. *goodmaniana*	FE	(CRPR 1B.1)		X
Death Valley sandpaper-plant	*Petalonyx thurberi* ssp. *gilmanii*	BLM	(CRPR 1B.2)	X	
Dedecker's clover	*Trifolium dedeckerae*	BLM	(CRPR 1B.3)	X	
Desert beauty	*Linanthus bellus*	—	(CRPR 2.3)		X
Desert spike-moss	*Selaginella eremophila*	—	(CRPR 2.2)		X
Dwarf germander	*Teucrium cubense* ssp. *depressum*	—	(CRPR 2.2)		X
Emory's crucifixion-thorn	*Castela emoryi*	—	(CRPR 2.2)		X
Forked buckwheat	*Eriogonum bifurcatum*	BLM	(CRPR 1B.2)	X	
Geyer's milk-vetch	*Astragalus geyeri* var. *geyeri*	—	(CRPR 2.2)	X	
Gilman's buckwheat	*Eriogonum gilmanii*	—	(CRPR 1B.3)	X	
Gilman's cymopterus	*Cymopterus gilmanii*	—	(CRPR 2.3)	X	
Gilman's goldenbush	*Ericameria gilmanii*	BLM	(CRPR 1B.3)	X	
Glandular ditaxis	*Ditaxis claryana*	—	(CRPR 2.2)		X
Greene's rabbitbrush	*Chrysothamnus greenei*	—	(CRPR 2.3)	X	
Hairy stickleaf	*Mentzelia hirsutissima*	—	(CRPR 2.3)		X
Hall's daisy	*Erigeron aequifolius*	BLM	(CRPR 1B.3)	X	
Harwood's milk-vetch	*Astragalus insularis* var. *harwoodii*	—	(CRPR 2.2)		X
Hoffmann's buckwheat	*Eriogonum hoffmannii* var. *hoffmannii*	BLM	(CRPR 1B.3)	X	

Table III.7-89
Special-Status Species Outside of the DRECP Plan Area on BLM LUPA Lands

Common Name	Scientific Name	Federal Status[1]	State Status[2]	North	SW
Holmgren's lupine	*Lupinus holmgrenianus*	—	(CRPR 2.3)	X	
Inflated Cima milk-vetch	*Astragalus cimae* var. *cimae*	—	(CRPR 1B.3)	X	
Intermontane lupine	*Lupinus pusillus* var. *intermontanus*	—	(CRPR 2.3)	X	
Inyo blazing star	*Mentzelia inyoensis*	BLM	(CRPR 1B.3)	X	
Inyo County star-tulip	*Calochortus excavatus*	BLM	(CRPR 1B.1)	X	
Inyo rock daisy	*Perityle inyoensis*	BLM	(CRPR 1B.2)	X	
Jackass-clover	*Wislizenia refracta* ssp. *refracta*	—	(CRPR 2.2)		X
Jacumba milk-vetch	*Astragalus douglasii* var. *perstrictus*	BLM	(CRPR 1B.2)		X
July gold	*Dedeckera eurekensis*	BLM	(CRPR 1B.3)	X	
Kelso Creek monkeyflower	*Mimulus shevockii*	BLM	(CRPR 1B.2)	X	
Kern Plateau bird's-beak	*Cordylanthus eremicus* ssp. *kernensis*	—	(CRPR 1B.3)	X	
Kern River evening-primrose	*Camissonia integrifolia*	BLM	(CRPR 1B.3)	X	
King's eyelash grass	*Blepharidachne kingii*	—	(CRPR 2.3)	X	
Knotted rush	*Juncus nodosus*	—	(CRPR 2.3)	X	
Lancaster milk-vetch	*Astragalus preussii* var. *laxiflorus*	—	(CRPR 1B.1)		X
Las Animas colubrina	*Colubrina californica*	—	(CRPR 2.3)		X
Latimer's woodland-gilia	*Saltugilia latimeri*	BLM	(CRPR 1B.2)		X
Little-leaf elephant tree	*Bursera microphylla*	—	(CRPR 2.3)		X
Long-stem evening-primrose	*Oenothera longissima*	—	(CRPR 2.2)	X	
Mexican hulsea	*Hulsea mexicana*	—	(CRPR 2.3)		X
Mormon needle grass	*Stipa arida [=Achnatherum aridum]*	—	(CRPR 2.3)	X	
Mountain Springs bush lupine	*Lupinus excubitus* var. *medius*	BLM	(CRPR 1B.3)		X
Muir's tarplant	*Carlquistia muirii*	BLM	(CRPR 1B.3)	X	
Nevada oryctes	*Oryctes nevadensis*	—	(CRPR 2.1)	X	

Table III.7-89
Special-Status Species Outside of the DRECP Plan Area on BLM LUPA Lands

Common Name	Scientific Name	Federal Status[1]	State Status[2]	North	SW
Nine Mile Canyon phacelia	*Phacelia novenmillensis*	BLM	(CRPR 1B.2)	X	
Orcutt's linanthus	*Linanthus orcuttii*	BLM	(CRPR 1B.3)		X
Orcutt's woody-aster	*Xylorhiza orcuttii*	BLM	(CRPR 1B.2)		X
Orocopia sage	*Salvia greatae*	BLM	(CRPR 1B.3)		X
Owens Peak lomatium	*Lomatium shevockii*	BLM	(CRPR 1B.3)	X	
Palmer's mariposa-lily	*Calochortus palmeri* var. *palmeri*	BLM	(CRPR 1B.2)	X	X
Panamint daisy	*Enceliopsis covillei*	BLM	(CRPR 1B.2)	X	
Panamint dudleya	*Dudleya saxosa* ssp. *saxosa*	BLM	(CRPR 1B.3)	X	
Panamint Mountains buckwheat	*Eriogonum microthecum* var. *panamintense*	BLM	(CRPR 1B.3)	X	
Panamint Mountains lupine	*Lupinus magnificus* var. *magnificus*	BLM	(CRPR 1B.2)	X	
Panamint rock-goldenrod	*Cuniculotinus gramineus*	—	(CRPR 2.3)	X	
Parish's daisy	*Erigeron parishii*	FT	(CRPR 1B.1)		X
Parish's desert-thorn	*Lycium parishii*	—	(CRPR 2.3)		X
Parry's monkeyflower	*Mimulus parryi*	—	(CRPR 2.3)	X	
Parry's spineflower	*Chorizanthe parryi* var. *parryi*	BLM	(CRPR 1B.1)		X
Pierson's milk-vetch	*Astragalus magdalenae* var. *peirsonii*	FT	SE		X
Pink fairy-duster	*Calliandra eriophylla*	—	(CRPR 2.3)		X
Pinyon Mesa buckwheat	*Eriogonum mensicola*	BLM	(CRPR 1B.3)	X	
Pinyon rockcress	*Boechera dispar*	—	(CRPR 2.3)	X	
Prairie wedge grass	*Sphenopholis obtusata*	—	(CRPR 2.2)	X	X
Pygmy lotus	*Acmispon haydonii*	—	(CRPR 1B.3)		X
Ripley's aliciella	*Aliciella ripleyi*	—	(CRPR 2.3)	X	
Robison's monardella	*Monardella robisonii*	BLM	(CRPR 1B.3)		X
Robbins' nemacladus	*Nemacladus secundiflorus* var. *robbinsii*	—	(CRPR 1B.2)		X
San Bernardino aster	*Symphyotrichum defoliatum*	BLM	(CRPR 1B.2)		X

Table III.7-89
Special-Status Species Outside of the DRECP Plan Area on BLM LUPA Lands

Common Name	Scientific Name	Federal Status[1]	State Status[2]	North	SW
San Bernardino milk-vetch	*Astragalus bernardinus*	BLM	(CRPR 1B.2)		X
San Diego button-celery	*Eryngium aristulatum* var. *parishii*	FE	SE, (CRPR 1B.1)	X	
Sanicle cymopterus	*Cymopterus ripleyi* var. *saniculoides*	BLM	(CRPR 1B.2)	X	
Santa Rosa Mountains leptosiphon	*Leptosiphon floribundus* ssp. *hallii*	—	(CRPR 1B.3)		X
Shockley's milk-vetch	*Astragalus serenoi* var. *shockleyi*	—	(CRPR 2.2)	X	
Shockley's rockcress	*Boechera shockleyi*	—	(CRPR 2.2)	X	X
Slender cottonheads	*Nemacaulis denudata* var. *gracilis*	—	(CRPR 2.2)		X
Slender-leaved ipomopsis	*Ipomopsis tenuifolia*	—	(CRPR 2.3)		X
Southern jewel-flower	*Streptanthus campestris*	BLM	(CRPR 1B.3)		X
Spanish needle onion	*Allium shevockii*	BLM	(CRPR 1B.3)	X	
Spear-leaf matelea	*Matelea parvifolia*	—	(CRPR 2.3)		X
Spiny-hair blazing star	*Mentzelia tricuspis*	—	(CRPR 2.1)		X
Sticky geraea	*Geraea viscida*	—	(CRPR 2.3)		X
Sweet-smelling monardella	*Monardella beneolens*	BLM	(CRPR 1B.3)	X	
Wheeler's dune-broom	*Chaetadelpha wheeleri*	—	(CRPR 2.2)	X	
White-bracted spineflower	*Chorizanthe xanti* var. *leucotheca*	BLM	(CRPR 1B.2)		X
Wildrose Canyon buckwheat	*Eriogonum eremicola*	BLM	(CRPR 1B.3)	X	
Yellow ivesia	*Ivesia arizonica* var. *arizonica*	—	(CRPR 2.3)	X	

Sources: CDFW 2013a and CBI 2013.
North = North of the DRECP Plan Area region; SW = Southwest of the DRECP Plan Area region

[1] Federal Status – FE: Federally Endangered; FT: Federally Threatened; FD: Federally Delisted; FS: USFS Sensitive; BLM: Bureau Land Management Sensitive; BCC: USFWS Bird of Conservation Concern; Eagle Act: Bald and Golden Eagle Protection Act.

[2] State Status – SE: California Endangered; ST: California Threatened; SC: California Candidate for listing; CSC: California Species of Special Concern; FP: Fully Protected; WBWG: Western Bat Working Group species. California Rare Plant Rank (CRPR, formerly known as the CNPS List) - CRPR 1B: Considered rare, threatened, or endangered in California and elsewhere; CRPR 2: Considered rare, threatened, or endangered in California, but more common elsewhere.

Critical Habitat for Special-Status Species

Six special-status species have critical habitat within BLM lands outside the DRECP Plan Area. Table III.7-90 details these species and the total amount of critical habitat present.

Table III.7-90
Critical Habitat for Special-Status Species Within BLM LUPA Lands Outside the DRECP Plan Area

Common Name	Scientific Name	Federal Status[1]	State Status[2]	Acres of Critical Habitat within the BLM LUPA Lands Outside the DRECP Plan Area
Reptiles				
Coachella Valley fringe-toed lizard	*Uma inornata*	FE	SC	12,000
Agassiz's desert tortoise	*Gopherus agassizii*	FT	ST	173,000
Birds				
Inyo California towhee	*Melozone [=Pipilo] crissalis eremophilus*	FT	SE	4,000
Least Bell's vireo	*Vireo bellii pusillus*	FE	SE	600
Mammals				
Bighorn sheep (Peninsular Ranges DPS)	*Ovis canadensis nelsoni*	FE, BLM	ST, FP	317,000
Plants				
Coachella Valley milk-vetch	*Astragalus lentiginosus* var. *coachellae*	FE	(CRPR 1B.2)	10,000

[1] Federal Status – FE: Federally Endangered; FT: Federally Threatened; FS: USFS Sensitive; BLM: Bureau Land Management Sensitive; BCC: USFWS Bird of Conservation Concern.

[2] State Status – SE: California Endangered; ST: California Threatened; CSC: California Species of Special Concern; FP: Fully Protected. CRPR: California Rare Plant Rank (formerly known as the CNPS List)–CRPR 1B: Considered rare, threatened, or endangered in California and elsewhere; CRPR 2: Considered rare, threatened, or endangered in California, but more common elsewhere.

Note: The following general rounding rules were applied to acreage values: values greater than 1,000 were rounded to nearest 1,000; values less than 1,000 and greater than 100 were rounded to the nearest 100; values of 100 or less were rounded to the nearest 10, and therefore totals may not sum due to rounding. In cases where subtotals are provided, the subtotals and the totals are individually rounded. The totals are not a sum of the rounded subtotals; therefore the subtotals may not sum to the total within the table.

III.7.10.2.3 Landscape Habitat Linkages and Wildlife Movement Corridors

Landscape habitat linkages and wildlife movement corridors are present within the north of the DRECP Plan Area and southwest of the DRECP Plan Area regions. While the north–south situated Owens Valley acts as the primary corridor in the north of the DRECP Plan Area region, there are smaller canyons and valleys that generally run northeast–southwest

through the Inyo Mountains that provide linkages for wildlife and habitat between the Owens Valley and lands in Nevada.

The Coachella Valley hosts a number of corridors in the southwest of the DRECP Plan Area region. Coachella Valley itself provides a corridor for wildlife movement toward the Salton Sea and Borrego Valley. Morongo Canyon is a critical corridor that allows for movement between Coachella Valley and Yucca Valley, by providing passage between the San Bernardino Mountains and Joshua Tree National Park. In addition, the San Gorgonio River and associated tributaries provide value as a biological corridor between the San Bernardino Mountains and the San Jacinto Mountains (CVAG 2007).

INTENTIONALLY LEFT BLANK