

Appendix A

California Desert National Conservation Lands Ecoregion Descriptions and Maps

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Appendix A. California Desert National Conservation Lands Description and Maps

A. California Desert National Conservation Lands

A.1 Introduction

Public Law 111-11, the Omnibus Public Lands Management Act of 2009, formally established the National Landscape Conservation System (NLCS), which is made up of BLM lands with nationally significant ecological, cultural and scientific values, and is managed to conserve, protect and restore these values.

Public Law 111-11 states that public land within the California Desert Conservation Area (CDCA) administered by the BLM for conservation purposes is a component of the NLCS. Throughout the DRECP LUPA and this Appendix A, components identified for inclusion in the NLCS as lands within the CDCA administered for conservation purposes will be referred to as the California Desert National Conservation Lands (CDNCL or NCL). For proposed California Desert National Conservation Lands decisions, the BLM considered all public lands within the CDCA boundary, including lands outside of the DRECP Planning Area. Of the 10.8 million acres of BLM-administered public lands within the CDCA, approximately 3.9 million acres are currently designated part of the NLCS. These include Wilderness, Wilderness Study Areas, Wild and Scenic Rivers, National Scenic and Historic Trails, the Santa Rosa and San Jacinto Mountains National Monument and other congressional designations, to include the Mountain Pass Dinosaur-Trackway and the Desert Lilly Sanctuary. These lands, identified for inclusion in the CDNCL by way of the DRECP LUPA do not alter, and are in addition to, the existing components of the NLCS. The DRECP LUPA will not alter the management of these areas.

A.2 Nationally Significant Values and Criteria

The California Desert National Conservation Lands were identified based on having nationally significant ecological, cultural and scientific values as called for under Public Law 111-11 and using the criteria listed below. The BLM identified the footprint for the California Desert National Conservation Lands by determining the conservation value and importance of the lands with nationally significant ecological, cultural and scientific values.

For all alternatives, the BLM considered the following criteria:

- **Ecological**
 - Species habitat – High quality habitat for multiple native species; or critical habitat for a federally listed species

- High level of ecological diversity
- Illustrates a significant natural value or phenomenon that is exemplary in the physiographic region
- **Cultural**
 - Contains a nationally significant prehistoric or historic cultural site that is eligible for the National Register of Historic Places.
 - Contains a nationally significant cultural landscape that provides context and setting for historic properties or is of religious or cultural importance to Indian Tribes.
- **Scientific**
 - Area that has been the focus for significant scientific study or has a natural or cultural value, natural process, or other occurrence of high scientific value for potential future study.

In addition to the criteria above, the BLM weighed different criteria, based on different factors affecting the context of “nationally significant” and “outstanding” resources and values, as well as creating a network that would promote the conservation, protection, and restoration of lands meeting the above the criteria. These criteria were:

- **Development pressure** – Area has natural or cultural values representative of other areas under development pressure, or adjoins DFAs.
- **Landscape intactness** – Relatively undisturbed features, unmodified natural environment of fairly large size, and not impacted by numerous developments (e.g., absence of extensive road network, multiple physical facilities such as communication sites, power lines)
- **Scenic quality** – Higher levels of scenic quality as determined by the BLM Visual Resources Inventory process.
- **BLM jurisdiction** – Primarily large blocks of BLM lands (may include interspersed lands managed by other agencies for conservation purposes).
- **Landscape Linkages** – Habitat and landscape-scale linkages to existing National Conservation Lands and other conservation units such as Wilderness Areas, Wilderness Study Areas, Wild and Scenic Rivers, National Scenic or Historic Trails, etc.

The California Desert National Conservation Lands in the DRECP LUPA emphasize habitat connectivity and cultural-botanical resource locations. The lands contain important wildlife linkages, including critical habitat under the Endangered Species Act (ESA), and other lands with high ecological diversity and integrity. The California Desert National Conservation Lands includes relatively smaller, yet highly significant, landscape units such as significant

cultural and botanical sites that do not link to other protected areas but are still considered to contain nationally significant ecological, cultural, or scientific values. California Desert National Conservation Lands include only areas where BLM has primary jurisdiction, and where the landscape is intact with no large-scale developments. The conservation and management actions (CMAs) allow for a variety of uses as long as they can be managed to be compatible with protecting the California Desert National Conservation Land values. The California Desert National Conservation Lands include existing transmission corridors.

The DRECP LUPA contains 3,956,000 acres of the California Desert National Conservation Lands on BLM-administered lands within the CDCA. .

A.3 Management and Ground Disturbance Caps

The California Desert National Conservation Lands will be managed using CMAs, a 1% ground disturbance cap, the ACEC specific management objectives, and ACEC ground disturbance caps (which range from 0.1% to 1%) as the primary conservation delivery mechanisms. The following describes how the disturbance caps will be managed and implemented for National Conservation Lands. Refer to the LUPA CMAs NLCS-DIST-1 and 2.

Managing ground disturbance in California Desert National Conservation Lands and implementation of the ground disturbance cap:

The following measures describe how the ground disturbance caps will be used, managed and implemented in order to accrue the conservation benefits for California Desert National Conservation Lands, and ACECs, where ground disturbance caps are applied. This information is repeated in the ACEC allocation section, and in the NLCS and ACEC CMAs. Much of the LUPA Decision Area is below target levels (i.e., caps) of ground disturbance, but existing ground disturbance in parts of the LUPA Decision Area are above the target levels. The targeted ground disturbance levels were established as surrogates for thresholds of sensitivity for desert ecosystems, species, and cultural resources. The ground disturbance caps in the California Desert National Conservation Lands are 1.0%. In the ACECs, which through much of the LUPA are subunits of the larger California Desert National Conservation Lands, the ground disturbance caps range from 0.1% to 1.0%. Refer to Appendix B-ACEC Special Unit Management Plans.

Generally, the ground disturbance cap is a limitation on ground-disturbing activities in California Desert National Conservation Lands and ACECs and is expressed as a percentage of total BLM managed California Desert National Conservation Lands and/or ACEC acreage, and cumulatively considers past, present, and future (proposed activity) ground disturbance. Baseline/existing (past plus present) ground disturbance would be determined using the most current imagery and knowledge at the time of an individual activity proposal.

Ground disturbance cap implementation:

Specifically, the ground disturbance cap would be implemented as a limitation and objective using the following process:

- Limitation: If the ground disturbance condition of the California Desert National Conservation Lands and/or ACEC is below the designated ground disturbance cap (see calculation method), the ground disturbance cap is a limitation on ground-disturbing activities within the California Desert National Conservation Lands and/or ACEC, and precludes approval of future discretionary ground disturbing activities (see exceptions below) above the cap.
- Objective, triggering disturbance mitigation: If the ground disturbance condition of the California Desert National Conservation Lands and/or ACEC is at or above its designated cap, the cap functions as an objective, triggering the specific ground disturbance mitigation requirement. Ground disturbance mitigation is unique to ground disturbance cap implementation and a discrete form of compensatory mitigation, separate from other required mitigation in the DRECP LUPA (see Glossary of Terms). The ground disturbance mitigation requirement remains in effect for all (see exceptions below) activities until which time the California Desert National Conservation Lands and/or ACEC drops below the cap, at which time the cap becomes a limitation and the ground disturbance mitigation is no longer a requirement. If ground disturbance mitigation opportunities do not exist in a unit (see below for “unit” of measurement), ground disturbing activities (see exceptions below) will not be allowed in that unit until which time opportunities for ground disturbance mitigation in the unit become available (see types and forms of ground disturbance mitigation below) or the unit recovers and drops below the cap.
- Actions necessary to control the immediate impacts of an emergency that are urgently needed to reduce the risk to life, property, or important natural, cultural, or historic resources, in accordance with 43 Code of Federal Regulations (CFR) 46.150, are an exception to the ground disturbance cap limitation, objective and ground disturbance mitigation requirements. Ground disturbance from emergency actions will count in the ground disturbance calculation for other activities, and also be available for ground disturbance mitigation opportunities and restoration, as appropriate.

Calculating ground disturbance:

Ground disturbance will be calculated on BLM managed land at the time of an individual proposal, by BLM for a BLM initiated action or by a third party for an activity needing BLM approval or authorization, for analysis in the activity-specific National Environmental Policy

Act (NEPA) document. Once BLM approves/accepts or conducts a calculation for a California Desert National Conservation Lands and/or ACEC, that calculation is considered the baseline of past and present disturbance and is valid for 12 months, and can be used by other proposed activities in the same unit. Ground disturbances, that meet the criteria below, would be added into the calculation for the 12 month period without having to revisit the entire calculation. After a 12 month period has passed and a proposed action triggers the disturbance calculation, BLM will examine the existing ground disturbance calculation to determine: 1) if the calculation is still reliable, in which case add in any additional disturbance that has occurred since that calculation; or 2) if the disturbance must be recalculated in its entirety. Once completed for a specific activity, the ground disturbance calculation may be used throughout the activity's environmental analysis. However, the BLM may recalculate the affected unit(s) or portions of the unit(s) if it determines such recalculation is necessary for the BLM's environmental analysis.

Unit of measurement: When calculating the ground disturbance, it is necessary to identify the appropriate unit level at which the disturbance will be calculated. For ground disturbing activities that occur within the California Desert National Conservation Lands, the ground disturbance will be calculated at the smallest unit level. Within an ACEC, the disturbance calculation will be based on the ACEC unit boundary, or the boundary of the disturbance cap area(s), whichever area is smaller. If there is overlap between California Desert National Conservation Lands and an ACEC, the calculation will take place based on the smallest unit. If an activity/project overlaps two or more smaller units, the cap will be calculated, individually, for all affected units.

Ground disturbance includes: The calculation shall include existing ground disturbance in addition to the estimated ground disturbance from the proposed activity (future) determined at the time of the individual proposal:

- Authorized/approved ground disturbing activities – built and not yet built
- BLM identified routes – all routes, trails, etc., authorized and unauthorized, identified in the Ground Transportation Linear Feature (GTLF) and/or other BLM route network database (i.e., BLM local databases that contain the best available data on routes and trails, replacement for GTLF, etc.), following applicable BLM standards and policy for identification of routes (authorized and unauthorized)
- Assumptions may be used to identify the percentage/degree/area/etc. of ground disturbance for a specific authorized/approved activity or activity-type based on:
 - Activity-specific environmental analysis, such as NEPA or ESA Section 7 Biological Assessment

- Known and documented patterns of ground disturbance
- Other documented site-specific factors that limit or play a role in ground disturbance, such as topography, geography, hydrology (e.g. desert washes obliterating authorized routes on a regular basis), historical and predicted patterns of use Any unauthorized disturbance that can be seen at a 1:10,000 scale using the best available aerial imagery
- Ground disturbance from wildfire, animals, or other disturbances that can be seen at a 1:10,000 scale using the best available aerial imagery
- Historic Route 66 maintenance - potential ground disturbance estimates:
 - As part of the ground disturbance calculation, the potential disturbance associated with estimated operations related to the maintenance of Historic Route 66 will automatically be included in the ground disturbance calculation as existing ground disturbance for the units specified below, until which time these estimated acres are no longer necessary due to approved operations:

▪ South Amboy-Mojave California Desert National Conservation Lands	
221 acres	
▪ Bristol Mountains ACEC	92 acres
▪ Chemehuevi ACEC	43 acres
▪ Pisgah ACEC	86 acres
 - Through a collaborative effort, the BLM has participated in the development of a Corridor Management Plan for Historic Route 66 in California. While specific details of the maintenance of this historic route are not detailed in the plan, as a managing party, it is important for BLM to provide a foundation for the future maintenance needs of the Historic Route 66, as conducted by San Bernardino County. To accomplish this it is necessary to account for the potential salable mineral uses in several of the conservation allocations within the LUPA Decision Area along Route 66 for the acquisition and stockpiling of soils, gravels, and rock. Based on the information provided by San Bernardino County in 2015, including acquisition/stockpiling location and anticipated size, BLM calculated the potential area of ground disturbance within the South Amboy-Mojave California Desert National Conservation Land unit and the Bristol Mountain, Chemehuevi and Pisgah ACECs along Historic Route 66. The estimated

ground disturbance acreage includes disturbance associated with potential access to the locations if no current access exists.

- The estimated ground disturbance acres for maintenance of Historic Route 66 in the before mentioned conservation units is not approval of these activities by BLM. Activities associated with the management and maintenance of Historic Route 66 on BLM administered land will follow all applicable laws, regulations and policies.

Exceptions to the disturbance calculation:

- Actions necessary to control the immediate impacts of an emergency that are urgently needed to reduce the risk to life, property, or important natural, cultural, or historic resources, in accordance with 43 CFR 46.150, will not be required to conduct a disturbance calculation. If the actions are ground disturbing, that disturbance will count towards the disturbance cap when next calculated for non-emergency activities.
- Actions that are authorized under a Department of Interior (DOI) or BLM NEPA Categorical Exclusion will not be required to conduct a disturbance calculation; however, these actions are not exempt from the disturbance mitigation requirement if a unit is at or above its cap. Although the BLM is not required to calculate the disturbance cap before approving an activity under a Categorical Exclusion, if the BLM knows an area is at or exceeding the cap, the disturbance mitigation requirements would apply to that activity.
- BLM authorized/approved research or restoration activities that are designed or intended to promote and enhance the nationally significant values for which the California Desert National Conservation Land was designated.
- Actions that are entirely within the footprint of an existing authorized/approved site of ground disturbance that is within the calculation above.
- Livestock grazing permit renewals (however, water developments or other range improvements requiring an Environmental Assessment or Environmental Impact Statement would be subject to the disturbance calculation and any mitigation requirements).

Ground disturbance mitigation:

The purpose of ground disturbance mitigation (disturbance mitigation) is to allow actions to occur in California Desert National Conservation Lands and/or ACEC that is at or above its designated disturbance cap(s), while at the same time providing a restoration mechanism that

will, over time, improve the condition of the unit(s) and take them below their cap. Disturbance mitigation is compensatory. Disturbance mitigation is unique to ground disturbance cap implementation and a discrete form of compensatory mitigation, separate from other required mitigation in the DRECP (see Glossary of Terms).

Disturbance mitigation may only be used for ground disturbance that is otherwise allowed by the LUPA and consistent with the purposes for which the California Desert National Conservation Lands and/or ACEC was designated. Areas used for disturbance mitigation are still considered disturbed until which time they meet the “Ground Disturbance Recovery” criteria in the section below.

Unit for implementing disturbance mitigation: The appropriate unit level for implementing disturbance mitigation is the same as that used for calculating ground disturbance. For ground disturbing activities that occur within the California Desert National Conservation Lands, the ground disturbance will be mitigated at the smallest unit level. Within an ACEC, the disturbance mitigation will be required within the ACEC unit boundary, or the boundary of the disturbance cap area(s), whichever area is smaller. If there is overlap between California Desert National Conservation Lands and an ACEC, the disturbance mitigation will take place in the smallest unit. If an activity/project overlaps two or more smaller units, disturbance mitigation will be required for all units that are at or over their specified disturbance cap.

No disturbance mitigation required: If the calculated ground disturbance for the unit(s) is under the cap:

- No disturbance mitigation required; use activity design features to minimize new ground disturbance and help stay below cap.

Disturbance mitigation required: If the calculated ground disturbance is at or above the unit(s) cap, disturbance mitigation is required:

- Use activity design features to minimize new ground disturbance to the extent practicable.
- For the portion of the proposed activity that is located on land within an area previously disturbed by an authorized/approved action that has been terminated the required disturbance mitigation ratio is 1.5 (1½):1.
- For the portion of the proposed activity that is located on undisturbed land or land disturbed by unauthorized activities, the required disturbance mitigation ratio is 3:1.
- Although the BLM is not required to calculate the ground disturbance cap before approving/authorizing an activity under a Categorical Exclusion, if the BLM knows an

area is at or exceeding the cap, the disturbance mitigation requirements would apply to that activity.

- In the rare circumstance where the BLM authorizes activities on areas restored (e.g., as disturbance or other forms of mitigation), the required disturbance mitigation ratio requirement is doubled, that is, 3:1 or 6:1, respectively.
- If disturbance mitigation opportunities do not exist in a unit, ground-disturbing activities (see exceptions below) will not be allowed in that unit until which time opportunities for disturbance mitigation in the unit become available (see types and forms of disturbance mitigation below) or the unit recovers and drops below the cap.

Exceptions to the disturbance mitigation requirement:

- Any portion of the proposed activity that is located on land previously disturbed by an existing, valid authorized/approved action.
- Livestock grazing permit renewals (however, water developments or other range improvements requiring an Environmental Assessment or Environmental Impact Statement would be subject to the disturbance calculation and any mitigation requirements).
- Land use authorization assignments and renewals with no change in use.
- BLM authorized/approved activities that are designed and implemented to reduce existing ground disturbance, such as ecological, cultural, or habitat restoration or enhancement activities.
- Non-discretionary actions, where BLM has no authority to require compensatory mitigation.

Types and forms of disturbance mitigation:

- Restoration of previously disturbed BLM lands within the boundary of the specific California Desert National Conservation Lands and/or ACEC unit(s) being impacted.
- Acquisition of undisturbed lands within the boundary of the specific California Desert National Conservation Lands and/or ACEC unit being impacted.
- Ground disturbance mitigation can be “nested” (i.e., combined) with other resource mitigation requirements, when appropriate. For example, a parcel restored for desert tortoise habitat mitigation may also satisfy the disturbance mitigation requirement if

the parcel is within the appropriate unit of California Desert National Conservation Lands, ACEC boundary, or smaller disturbance cap unit.

Ground Disturbance Recovery

In general, California Desert National Conservation Lands and/or ACEC ground disturbance recovery will be determined during the decadal ground disturbance threshold ecoregion trend monitoring assessments (see below, and Monitoring and Adaptive Management). California Desert National Conservation Lands and/or ACEC recovery may be assessed at intermediate intervals, in between the decadal assessments, at BLM's discretion based on adequate funding and staffing. Between the decadal assessments, BLM will assume disturbed areas and units (same as used for calculations and mitigation) are not yet recovered until data is presented and BLM determines the area meets one of the two criteria below:

- Field verification that disturbed area(s) are dominated by the establishment of native shrubs, as appropriate for the site, and demonstrated function of ecological processes (e.g., water flow, soil stability).
- Ground disturbance can no longer be seen at the 1:10,000 scale using the best available aerial imagery.

Areas within California Desert National Conservation Lands and/or ACEC(s) may be determined recovered by BLM at any time, once one of the two criteria above are met, prior to the entire unit (of calculation and mitigation) being determined recovered. Areas determined recovered by BLM would be removed from the [next] ground disturbance calculation for that unit.

Ground Disturbance Threshold Ecoregion Trend Monitoring (also refer to LUPA Section III -Monitoring and Adaptive Management)

To monitor the overall general condition and ground disturbance trend of the California Desert National Conservation Lands and ACECs, one ecoregion per year, on a continual rotating basis, will be assessed in relation to a 1% ground disturbance threshold. This monitoring and assessment will begin one year after the signing of the DRECP LUPA Record of Decision (ROD). The ecoregion(s) within the West Mojave Plan Trails and Travel Management Plan (WMRNP) will be monitored and assessed no sooner than 5 years after the signing of the DRECP LUPA ROD. The BLM California State Director will determine the order of the ecoregional trend monitoring.

The results of the trend monitoring, in combination with other pertinent ecological and cultural data, may trigger the adaptive management process, relative to changes, up or down,

of the ground disturbance caps, ground disturbance mitigation requirements, or ground disturbance mitigation ratios (see LUPA Section III-Monitoring and Adaptive Management).

Ground Disturbance Threshold Ecoregion Adaptive Management – Response (also refer to LUPA Section III-Monitoring and Adaptive Management)

The adaptive management framework is specific in relation to the response to the ground disturbance threshold ecoregion monitoring. At no time should the changes made through adaptive management compromise the nationally significant ecological, cultural or scientific values for which a California Desert National Conservation Lands unit was designated, the relevant and important values for which an ACEC was designated, or the overall DRECP LUPA biological and cultural conservation design and strategy.

The monitoring results show the total ground disturbance within the ecoregion is at or below the 1% threshold/cap. The best available data (e.g., species demographic changes, suitable habitat availability, etc.) indicates or illustrates that the resource most sensitive to ground disturbance in that ecoregion for which it was conserved (i.e., biological or cultural) are:

- Trending flat or improving – No changes in management response, no adaptive management, may be needed.
- Declining – Adaptive management is needed, including possible reduction of the disturbance caps in all or portions of the ecoregion, increases in required ground disturbance mitigation, changes to resource specific CMAs, or other management actions to further limit the effects of ground disturbance.

The monitoring results show the total ground disturbance within the ecoregion exceeds the 1% threshold/cap. The best available data (e.g., species demographic changes, suitable habitat availability, etc.) indicates or illustrates that the resource most sensitive to ground disturbance in that ecoregion for which it was conserved (i.e., biological or cultural) are:

- Improving – Then adaptive management may be considered, including increase in the ground disturbance cap in all or portions of the ecoregion, or decrease in the required disturbance mitigation.
- Trending flat or declining – Adaptive management is needed, including possible reduction of the disturbance caps in all or portions of the ecoregion, increases in required disturbance mitigation, changes to resource specific CMAs, or other management actions to further limit the effects of ground disturbance.

A.4 Ecoregion Subarea Descriptions

The vast landscapes of the CDCA have been divided into ecoregion subareas that encompass similar physiography and/or ecological values. Each of these ecoregion subareas includes a unique combination of specific ecological, cultural and scientific values. This Appendix provides maps showing the California Desert National Conservation Lands by ecoregion subarea. The footprint for each subarea is described below. There are 10 ecoregion subareas in the DRECP LUPA.

A.4.1 Basin and Range Subarea

Background Information

The Basin and Range subarea extends from the Nevada state line west to the Sierra Nevada Mountain Range, approximately 85 miles east to west at its widest part, and 130 miles north to south. Elevations range from 1,000 to 12,000 feet; mountains rise abruptly from the desert floor, so that even across short distances, plant communities vary greatly. These include Joshua tree woodland, sagebrush steppe, pinyon-juniper woodland, and cottonwood/willow riparian vegetation; and in the White-Inyo Mountain Range, unique alpine vegetation and subalpine bristlecone and limber pine woodlands. The south end of the subarea gradually transitions to Mojave Desert vegetation dominated by creosote bush and white bursage. Streams, springs, and riparian areas serve as oases in the harsh, arid environment.

These specially designated units play an important conservation role in the subarea. They have already been designated by Congress for conservation purposes, and were not subject to the DRECP decision: White Mountains, Piper Mountains, Sylvania Mountains, Inyo Mountains, Malpais Mesa, Manly Peak, Coso Range, Darwin Falls, Argus Range, Surprise Canyon, El Paso Mountains, Sacatar Trail, and Owens Peak Wilderness Areas; Great Falls Basin Wilderness Study Area; and Cottonwood Creek Wild and Scenic River.

The following areas are not managed by the BLM and are not part of the California Desert National Conservation Lands, but contribute to the habitat conservation goals of the DRECP LUPA: Death Valley National Park and the eastern portion of Red Rock Canyon State Park.

Description of Nationally Significant Landscapes

Ecological Values

The California Desert National Conservation Lands in this ecoregion subarea include some of the largest undeveloped expanses of public lands. The diversity of vegetation alliances

supports diverse wildlife species, including desert tortoise, Mohave ground squirrel, golden eagle, burrowing owl, Sierran tree frog, red-spotted toad, and numerous bird and reptile species. The alternative also includes habitat for sensitive species such as desert bighorn sheep, Inyo slender salamander, and Swainson's hawk; numerous sensitive bat species such as Townsend's big-eared bat associated with old mine features; and potential winter habitat for a Greater sage-grouse population at the southwest extreme of their range. Unusual monarch butterfly over-wintering sites occur in the riparian canyons of the Inyo Mountains. Diverse year-round resident wildlife species of the canyons include ringtails, mountain lions, bobcats, kit foxes, and gray foxes.

The northern half of this subarea includes parts of Deep Springs and Fish Lake Valleys, dominated by shrubs such as *Menadora*, winterfat, and other warm-season shrubs and grasses that receive summer rains. Deep Springs Valley is a high desert valley in the Inyo-White Mountains that contains Deep Springs Lake, a shallow salt lake. Migrating birds flock to the lake and associated springs during the spring and fall. The BLM Sensitive black toad (*Anaxyrus exsul*) is an isolated species restricted to a few wetlands in Deep Springs Valley. This alternative includes black toad habitat north of California State Hwy 168.

To the south are the lower-elevation Eureka and Saline Valleys, where the Great Basin transitions into the Mojave Desert; Panamint Valley and Lake; and the Panamint, Slate, and Argus Mountain Ranges. The valleys have sparsely scattered springs, wetlands, and ephemeral wetlands; and support a high diversity of plant and wildlife species, including endemic species such as alkali fairy shrimp, spring snails, Panamint daisy, Panamint dudleya, and the Panamint alligator lizard. Panamint Valley's unique desert wetland communities such as Warm Sulfur Springs include mesquite bosques, and both freshwater and saltwater marshes that provides habitat for waterfowl, wading birds, amphibians, and other species. Sand dunes are home to endemic invertebrate species, such as a scarab beetle and a weevil, *Trigonoscuta* (as yet unnamed). Greasewood (*Sarcobatus vermiculatus*) communities occur in the saline soil of the playa areas. In California, Utah pickleweed (*Sarcocornia utahensis*) occurs only in this area and in adjacent Death Valley National Park. This alternative also includes another unusual greasewood plant assemblage growing on sand dune hummocks.

The California Desert National Conservation Lands in this subarea include designated critical habitat for the Inyo California Towhee, a federally listed Threatened species found only in isolated riparian areas of the Argus Mountain Range.

The California Desert National Conservation Lands include habitat linkages (and climate refugia) among a number of designated BLM Wilderness Areas, the Inyo National Forest, undeveloped military lands, and Death Valley National Park, with intact ecosystems connecting these large areas. These linkages for wildlife migration are critical to the

conservation of certain species, especially with respect to climate change. These species include the desert tortoise, desert bighorn sheep, and Mohave ground squirrel. California Desert National Conservation Lands in this subarea include four core population centers of the Mohave ground squirrel, which is listed by the State as Threatened and by the BLM as Sensitive.

California Desert National Conservation Lands in this ecoregion subarea include a segment of the Pacific migratory bird flyway. Songbirds, shorebirds, and waterfowl pass through Indian Wells Valley and Rose Valley on their way to breeding grounds. The flyway has stop-over riparian and wetland habitat in the Sierra Nevada canyons and at Little Lake and Haiwee Reservoir. Riparian areas here provide important migratory stop-over habitat for the federally listed Least Bell's Vireo and Southwest Willow Flycatcher. This flyway also provides excellent habitat for Golden Eagles, Prairie Falcons, and other raptors, with nearby cliffs for nesting and the valley floor for foraging. Little Lake Watchable Wildlife Area, close to both water and cliffs, is an exceptional place to view swallows, raptors, and waterfowl.

Another designated Watchable Wildlife Area included in the Basin and Range ecoregion subarea California Desert National Conservation Lands, the Haiwee Deer Winter Range site, offers opportunities to see a different kind of vital seasonal migration: that of the East Monache mule deer herd. As heavy winter snows begin to fall in the mountains, 600-700 deer move down to the valley floor.

Cultural Values

The cultural values of the Basin and Range ecoregion subarea are as diverse as the ecological values and include some of the richest cultural areas in the California desert, including landscapes and sites associated with the earliest prehistoric Native American occupation, and some of the oldest historic mining areas in California. This area falls within the traditional homelands of several tribal groups; sacred sites, traditional cultural places, and areas of religious and cultural significance to these groups are found throughout. Abundant cultural properties include well-known prehistoric and historic archaeological sites and properties of traditional religious and cultural importance to Indian Tribes. There is a high potential for hundreds of cultural sites that have not yet been recorded.

Within California Desert National Conservation Lands, resources listed on the National Register of Historic Places include Fossil Falls Archaeological District, Last Chance Canyon Archaeological District, Saline Valley Salt Tram, and Ayers Rock Petroglyph Site. Many more sites are eligible for listing, including the First Los Angeles Aqueduct, the mining town of Cerro Gordo, the Southern Owens Valley Mortuary Complex, historic White Mountain City, the Manzanar Reservoir and Sand Trap, and the charcoal pits at Conglomerate Mesa.

In the northernmost area of California Desert National Conservation Lands in the Basin and Range subarea and the CDCA, in Fish Lake, Deep Springs, and Eureka Valleys, archaeological research has been limited but has nonetheless identified prehistoric village complexes, lithic scatters, and rock art sites. Historic use has been associated with mining, particularly the towns of White Mountain City at the mouth of Wyman Canyon and Roachville at the mouth of Cottonwood Creek.

Conglomerate Mesa has a unique collection of historic era mining features, particularly associated with early charcoal production for Cerro Gordo and smelters in the Owens Valley. The area is also identified in the ethnographic literature as a traditional pinyon nut gathering location, as evidenced by the presence of brush structures, lithic materials, and ceramics dating to the contact period in the Owens Valley and earlier. The mining history of this area details battles between native groups and charcoal burners who were competing for the pinyon resources. Cerro Gordo was the largest silver producing mine in Inyo County and provided much of the revenue required to build the city of Los Angeles.

The canyons of the eastern Sierra Nevada were a critical part of the Native American seasonal round. Not only did these places have necessary water in the summer, they provided access points to the hunting grounds of the Sierra Nevada crest and sacred areas associated with mountains. They also served as conduits for trade with groups over the mountains in the Central Valley and beyond to the Coast. These sites include many large, prehistoric National Register of Historic Places eligible properties in relatively undisturbed contexts, and have high densities of obsidian and other types of lithic material. The sites in these canyons have the potential to answer some of the most pressing questions in California archaeology, particularly about trade, human adaptation to changing environments, and culture contact and interaction.

The California Desert National Conservation Lands also encompass portions of the footprint of the Los Angeles Aqueduct. The first aqueduct, built by the Los Angeles Department of Water and Power in 1913, redefined the history of Owens, Rose, and Indian Wells Valleys. The First LA Aqueduct has been listed as a Historic Civil Engineering Landmark; and, with all of the associated labor camps along the line, has been recommended eligible for listing on the National Register of Historic Places.

The area between the eastern slope of the Sierra Nevada, the southern shoreline of the Owens Dry Lake, Haiwee Reservoirs, and the Coso Mountain Range has extensive rock art, prehistoric habitation sites, and large scatters of lithic materials from the nearby Sugarloaf Obsidian Source, located on China Lake Naval Air Weapons Station. Prehistoric burial complexes also occur throughout this area. At the Rose Spring archaeological site complex, excavations revealed a well stratified subsurface archaeological deposit which was successfully used to date the introduction of bow and

arrow technology to Eastern California. The bow-and-arrow event, about 1,500 to 1,000 years ago, changed the patterns of prehistory not only in this region but throughout the Great Basin and neighboring southwest.

California Desert National Conservation Lands in this ecoregion subarea includes the Ayers Rock area, which encompasses a complex of prehistoric archaeological resources, the most prominent of which is a monolithic boulder renowned for panels of Native American rock art, specifically, painted polychrome pictographs. Limited excavation in the vicinity has uncovered a variety of cultural material, including basketry, beads, and human remains.

Seven miles from Ayers Rock on the China Lake Naval Air Weapons Station are two of the most important locales in the region: the Coso Hot Springs, a National Register Listed Sacred Site, and the Coso Rock Art District, a National Historic Landmark and World Heritage Site. National Conservation Lands in this alternative encompass much of the land between these sacred sites on Navy lands and resources on BLM lands, thus including a culturally significant landscape.

In the Fossil Falls Archaeological District, cultural research attributes the rock art as a distinctive style termed Coso Representation, associated with local Numic-speaking groups such as the Northern Paiute, Panamint Shoshone, Coso Shoshone, and Kawaiisu. Studies including excavations at the Stahl Site, south of Fossil Falls, have identified cultural components from more than 10,000 years before present. Also included in this alternative's National Conservation Lands is the Last Chance Canyon area, with a portion of the Last Chance Canyon National Register Archaeological District which has an assemblage identifying human occupation in excess of 10,000 years. The area includes open air campsites, extensive house ring complexes, rock shelters, lithic reduction locales, cryptocrystalline quarries, milling complexes, and petroglyphs. Archaeological materials represent aboriginal occupation from the Late Pleistocene to the historic period.

Warm Sulfur Spring in Panamint Valley is a Tribal Cooperative Activity/Special Use Area for traditional practices within the Timbisha Shoshone Homeland. The Timbisha tribe attaches considerable importance to the springs, desert marsh, and mesquite groves of this area.

Historic resources are likewise abundant, many of which are superb examples of sites associated with exploration by the Spanish and Euro-Americans, contact with Native American communities in California, the advancement and development of the Western Frontier, American vernacular architecture, mining landscapes in the West, and the Civilian Conservation Corps. Historic mining features predominate the historic archaeological assemblage, particularly in the Panamint-Argus region, Trona-Searles Lake area and the Darwin region.

Many prehistoric and historic resources in this alternative's National Conservation Lands have not been formally evaluated, but are considered eligible for listing on the National Register of Historic Places. This alternative includes large tracts of lands with historic and cultural landscapes that have long been recognized but have only recently been documented through ongoing research.

This alternative has large tracts of California Desert National Conservation Lands with Native American values including sacred sites, places of religious and ceremonial importance, and areas of traditional use and gathering for the Kawaiisu, Tubatalabal, Chemehuevi, Timbisha-Shoshone, Panamint Shoshone and Owens Valley Paiute-Shoshone. Resource values that have been identified as having particular significance to these cultural groups include those near Owens Dry Lake and Haiwee Reservoir.

Scientific Values

Sensitive terrestrial and aquatic species, many of them endemic to this subarea, and prehistoric and historic cultural resources, are the focus of numerous scientific studies on the California Desert National Conservation Lands in this alternative.

Scientific studies are ongoing in core population areas of the Mohave ground squirrel. The Townsend's big-eared bat is the focus of several studies, as populations of this species are steeply declining; research on maternity colonies has recently been conducted in the White-Inyo Range. California voles have been the subject of surveys in eastern Sierra canyons.

Point Reyes Bird Observatory (PRBO) Conservation Science collects data on migratory birds that use the Pacific migratory bird flyway along the east side of the Sierra Nevada. Researchers are studying Golden Eagles to better understand their home ranges and migratory movements in the southern Sierra front country. Studies also address the Inyo California Towhee.

Researchers are studying the biodiversity of aquatic invertebrates in the Argus Range. Others conduct research on halophytic microbes and viruses in the saline wetlands of the Panamint Lake area. Studies of Joshua trees have been conducted in Fish Lake Valley at the northern extent of their range.

California Desert National Conservation Lands in this ecoregion subarea provide outstanding examples of cultural resource properties with extensive scientific values. Previously excavated sites in the region have stratigraphic sequences of projectile points associated with radiocarbon dates that serve as the basis for the cultural chronology used by archaeologists throughout the region and state today. Archaeological, cultural, and historic research being conducted on these lands is contributing greatly to understanding

human adaptation in a wide range of ecological zones; landscape use and mobility by prehistoric and historic people; and the diversity and interaction spheres of cultural groups in this and surrounding regions.

The Trona Pinnacles were designated by as a National Natural Landmark in 1968 to protect one of the nation's best examples of tufa formation. This unique landscape consists of more than 500 tufa (calcium carbonate) pinnacles rising from the bed of the Searles Dry Lake basin. The tufa spires, some as high as 140 feet, were formed underwater 10,000 to 100,000 years ago when Searles Lake was a link in an interconnected chain of Pleistocene lakes stretching from Mono Lake to Death Valley. Tufa is a porous rock formed as a deposit when springs interact with other bodies of water. As rare geologic features, they offer excellent opportunities for scientific research.

Acreage

There are approximately 377,000 acres of California Desert National Conservation Lands in the Basin and Range subarea.

A.4.2 Coachella Valley

Background Information

The Coachella Valley forms the north half of the Salton Sea Trough, the large basin for ancient Lake Cahuilla. The valley extends northwest to southeast for approximately 45 miles from the southeast San Bernardino Mountains to the Salton Sea, the largest lake in California, and is about 15 miles wide along most of its length. The broad, low-lying valley floor, featuring the Coachella Dunes, comprises the westernmost limits of the Sonoran Desert at the Santa Rosa and San Jacinto mountains. Other mountain ranges bounding the valley are the Little San Bernardino Mountains to the north and the Chocolate Mountains on the east.

Watersheds from the mountain ranges drain into the Salton Sea. The San Andreas Fault crosses the valley from the Chocolate Mountains in the southeast corner and along the centerline of the Little San Bernardino Mountains. Along the San Andreas Fault and subsidiary faults, desert palm oases appear where tectonic movements allow artesian water to surface from deep in the earth.

The Coachella Valley is a major point of entry into the California desert for visitors from the Los Angeles and Riverside–Ontario–San Bernardino metropolitan areas, and many visitors from elsewhere in the United States and from Canada come in the winter for sun, warmth, and recreation. By far the most populous subarea in the DRECP Plan Area and one of the

fastest growing regions in Riverside County, the valley expects to add 500,000 people over the next 10 years. Wind energy production is an important commercial enterprise in San Gorgonio Pass, one of the earliest wind farms established in the United States. The mostly urbanized valley floor and the orderly rows of industrial wind turbines in the pass, contrast strikingly with the abrupt steep slopes of the rugged mountain ranges.

Existing specially designated areas play an important conservation role in the subarea. Since they are already managed by the BLM or other federal and state agencies for conservation purposes, they are not subject to the DRECP decision. All or portions of the following BLM Wilderness Areas are within the subarea: San Gorgonio, Santa Rosa, Mecca Hills and Orocopia Mountains. This subarea also includes the Santa Rosa and San Jacinto Mountains National Monument, the Big Morongo Preserve, and the Coachella Valley Fringed Lizard Preserve.

The following areas are not managed by the BLM, and are not part of the California Desert National Conservation Lands but contribute to the habitat conservation goals of the DRECP: Joshua Tree National Park, Coachella Valley National Wildlife Refuge, Mount San Jacinto State Park, Salton Sea State Recreation Area, Indio Hills State Park, Hidden Palms Ecological Reserve, Magnesia Springs Ecological Reserve, Oasis Springs Ecological Reserve, University of California Deep Canyon Desert Research Center, University of California Oasis de los Osos, Indian Canyons and Whitewater Canyon Preserve.

Description of Nationally Significant Landscapes

Ecological Values

The California Desert National Conservation Lands conserve species indigenous to the Coachella Valley that have special status under either the federal or California Endangered Species Act, or that have been proposed or are candidates for federal listing. The diverse desert landscape of the Coachella Valley provides habitat for dozens of plant and animal species, some found nowhere else in the world. Carbon sequestration is also a benefit provided by vegetation communities and soil biota. The rich endemic flora includes the endangered Coachella Valley milk-vetch at the Coachella Valley Preserve ACEC, and endangered triple-ribbed milk-vetch at Whitewater Canyon ACEC. The California Native Plant Society lists more than 120 rare plants from the Coachella Valley, an indication of the many distinct habitats that occur in the subarea. The BLM has designated 14 plants as special-status species, several of which are found only in the Coachella Valley subarea, including the Mecca aster and Orocopia sage found in designated wilderness and in the Chuckwalla ACEC.

Native animals such as the desert pupfish and Yuma Clapper Rail at Dos Palmas ACEC, and the peninsular population of desert bighorn sheep in the Santa Rosa and San Jacinto National

Monument, are also federally listed endangered species. The Agassiz's desert tortoise in the Chuckwalla ACEC, and the Coachella Valley fringe-toed lizard in the Coachella Valley ACEC are listed as Threatened. Remaining dune ecosystems in the north end of the valley provide habitat for the lizard and other endemic plants and animals. These vital wildlife habitats are encompassed in California Desert National Conservation Lands.

Also included is Big Morongo Canyon Preserve, one of the most important birding areas in California with over 250 recorded bird species and 72 resident breeding species. Nestled among the Little San Bernardino Mountains, the canyon is one of the 10 largest cottonwood and willow riparian habitats in California. Its upstream end lies in the Mojave Desert; downstream, it opens into the Sonoran Desert. The Morongo Fault running through the canyon causes water draining from the surrounding mountains to form Big Morongo Creek, marsh habitat and mesquite thicket. This diverse landscape has been an important part of the Morongo Basin's natural and cultural history.

Whitewater Canyon is included as California Desert National Conservation Lands because it is a unique transitional ecotone where three ecoregions converge: Mojave Desert, Sonoran Desert, and California Coast. The canyon supports dense riparian habitat for endangered, threatened, and sensitive species of flora and fauna. The San Andreas Fault slices across the ancient river and the tectonic plates create an underground dam in the Earth's crust between ten and 60 miles deep at Bonnie Bell, where the river backs up as a massive underground lake. This has created a natural wildlife sanctuary with hundreds of rare old growth Fremont cottonwood trees in a rich riparian habitat, affording an abundance of food, water, shelter and critical habitat for two endangered bird species, southwest willow flycatcher and least Bell's vireo. The canyon has robust populations of desert bighorn sheep, mule deer and black bear and is an important wildlife corridor between the San Bernardino and San Jacinto Mountains. The Big Morongo Canyon Preserve is a Watchable Wildlife site and serves the community as an important site for youth and environmental education programs.

Dos Palmas Preserve has another of the rare riparian areas in the subarea, with extensive palm oases. The site is managed to protect endangered desert pupfish and Yuma Clapper Rail and other sensitive species as part of mitigation efforts for the Coachella Canal. This preserve is included in California Desert National Conservation Lands.

Also included is are portions of the Coachella Valley Preserve, the umbrella designation for a large contiguous complex which includes the Coachella Valley National Wildlife Refuge, the BLM Willow Hole/Edom Hill ACEC, Indio Hills State Park, and Coachella Valley State Ecological Reserve. It has critical habitat for the threatened Coachella Valley fringe-toed lizard and the endangered Coachella Valley milk-vetch, and holds most of the remaining Coachella Dunes, the essential sand source for the habitat of these two species.

California Desert National Conservation Lands in the mountain ranges on the north, in Whitewater Canyon ACEC and Big Morongo ACEC, encompass a major transition zone between the Colorado/Sonoran Desert to the south and the Mojave Desert to the north. These include a long band of wildlife habitat connectivity extending from the Mecca Hills and Orocopia Mountains Wilderness Areas north to the southern boundary of Joshua Tree National Park.

Cultural Values

Native American settlements, trails, and traditional plant gathering sites, along with historic structures and other sites used during early European American settlement, are found throughout the ecoregion subarea. Cultural resources encompassed by California Desert National Conservation Lands include many significant cultural sites which document the lives of prehistoric and historic peoples.

Archaeological research has shown that humans have occupied sites at Whitewater Canyon, Snow Creek, Indian Canyons and other sites represented by California Desert National Conservation Lands in the Coachella Valley for at least 3,000 years. Ancestors of the Agua Caliente Band of Cahuilla Indians settled here centuries ago and developed complex communities at many sites including Palm, Murray, Andreas, Tahquitz, Snow Creek, Whitewater and Chino Canyons. There are many sacred sites and landscape features of great importance to Cahuilla culture. Cahuilla villages were generally located in or near the mouth of canyons in the subarea, and in some instances there were both summer villages at higher elevations and winter villages closer to the valley floor. Many prehistoric cultural sites are in the Santa Rosa and San Jacinto mountains, with others in the valley. Tangible evidence includes ancient trails; traditional mortars and pestles; rock art; and occupation, village and gathering sites. Several sites are listed or nominated for the National Register of Historic Places.

At Dos Palmas Preserve on the shoreline of ancient Lake Cahuilla, native peoples settled and drew on the food resources from the lake. The Preserve has important cultural resources at the sites of former settlements. These are included in California Desert National Conservation Lands.

Recognition as California Desert National Conservation Lands contributes greatly to cooperative management of Coachella Valley's rich cultural resources undertaken jointly by the BLM and the Agua Caliente Band of Cahuilla Indians, Morongo Band of Mission Indians, and Torres-Martinez Band of Desert Cahuilla Indians.

Scientific Values

California Desert National Conservation Lands in the Coachella Valley ecoregion subarea have high scientific and research values. Studies currently underway address many species of plants and animals that are threatened or facing extinction, including the Coachella Valley fringe-toed lizard, Peninsular bighorn sheep, desert pupfish and Agassiz's desert tortoise. These studies provide a wealth of knowledge on the health of the species' populations, their habitats, and landscape-scale ecosystems upon which they depend.

Further studies of groundwater and climate change history are needed to guide future management of the Coachella Valley. Opportunities such as those at Dos Palmas abound for advancing the technologies to efficiently restore and enhance disturbed desert habitats so that they continue to benefit wildlife and to counteract adverse impacts from climate change. The pool of scientific expertise in local Coachella Valley communities, the University of California system, and adjacent metropolitan areas can forge new understanding of sustainable ecosystems and human communities in a hot desert ecosystem. Opportunities for joint landscape research with Joshua Tree National Park concerning the function of habitat connectivity between the Mojave and Sonoran deserts as climate change progresses will inform scientists and managers as they refine conservation planning.

The Coachella Valley has very high seismic activity due to the San Andreas and San Jacinto Faults and proximity of two tectonic plates, and is likely to again be the epicenter of devastating earthquakes. Studies of earth movements are critical. Fault zones run through the Mecca Hills Wilderness and the Coachella Valley Preserve.

Archaeological and cultural research examines humans' ways of adapting to this arid environment, and contributes to better understanding of diverse cultures.

Acreage

There are approximately 72,000 acres of California Desert National Conservation Lands in the Coachella Valley subarea.

A.4.3 Colorado Desert

Background Information

The Colorado Desert is the western extension of the Sonoran Desert, hotter and drier than parts to the east. Bounded on the east by the Colorado River, it reaches across southeastern California to meet the transition zone with the Mojave Desert in the northwest. Watersheds from several mountain ranges drain into the Colorado River. Diverse, intact habitats in this

subarea include upland shrub scrub dominated by creosote, saltbush species, brittle bush, cacti, and ephedra. Dunes such as the Palen Dunes, Rice Dunes, and Chuckwalla Dunes provide habitat for sand-dependent plant species. Subsurface moisture in desert washes supports stands of microphyll woodlands with old-growth stands of blue paloverde and ironwood. Springs provide the only permanent water sources in the subarea away from the Colorado River. Wildlife species found in many parts of the subarea include mule deer, bobcat, kit fox, desert kangaroo rat, cactus mouse, black-tailed jackrabbit, Gambel's quail, American badger, and desert bighorn sheep.

Existing BLM National Conservation Lands play an important conservation role in the subarea. These lands have been designated by Congress for conservation purposes, and they are not subject to the alternatives under this plan. These lands include all or parts of Sheephole Valley, Cadiz Dunes, Old Woman Mountains, Turtle Mountains, Palen-McCoy, Big Maria Mountains, Rice Valley, Riverside Mountains, Chuckwalla Mountains, Indian Pass, Little Chuckwalla Mountains, Little Picacho, Palo Verde Mountains, and Picacho Peak Wilderness Areas. The Congressionally designated Desert Lily Sanctuary is also within the subarea.

The following areas are not managed by the BLM and are not part of the California Desert National Conservation Lands but contribute to the habitat conservation goals of the DRECP: Joshua Tree National Park, Cibola National Wildlife Refuge, Imperial National Wildlife Refuge; Picacho State Recreation Area.

Description of Nationally Significant Landscapes

Ecological Values

California Desert National Conservation Lands in this ecoregion subarea include critical habitat for Agassiz's desert tortoise, a federally listed Threatened species, and habitat for 60 other special-status plants and animals. This ecoregion subarea also encompasses important habitat for desert bighorn sheep, an iconic species with declining numbers, such as habitat for the Chuckwalla and Palo Verde Mountain bighorn sheep herds. The California Desert National Conservation Lands would incorporate important linkages among 14 BLM Wilderness Areas from the Colorado River to Joshua Tree National Park, providing desert habitat connectivity for terrestrial reptiles, mammals, and burrowing owls.

Mountain cliff sites in designated BLM Wilderness Areas in this subarea are important to maintaining robust Golden Eagle populations. The chain of Wilderness Areas lining the Colorado River, together with the linkages included in the California Desert National Conservation Lands in this alternative, provide habitat continuity for eagle foraging.

California Desert National Conservation Lands in this ecoregion subarea include important Sonoran Desert microphyll woodlands. Old-growth microphyll woodlands provide the highest amount of aboveground biomass of any plant community in the Sonoran Desert outside of the Colorado River riparian zone and constitute a reservoir for carbon sequestration. The complex physical structure and cover of the woodlands provide essential habitat for neotropical migratory birds crossing the California deserts to reach nesting sites in the Pacific Coast states and Alaska.

BLM special-status or sensitive species found in the California Desert National Conservation Lands include desert bighorn sheep, mountain lion (“Yuma puma”), seven species of bats, Colorado Valley woodrat, wintering mountain plover, several rare raptor and owl species, seven other bird species, six reptile species, Couch’s spadefoot toad, and 32 special-status plant species. Rare plant species include chaparral sand-verbena (*Abronia villosa* var. *aurita*), Emory’s crucifixion thorn (*Castela emoryi*), Harwood’s eriastrum (*Eriastrum harwoodii*), and Munz’s cholla (*Cylindropuntia munzii*).

Also included in California Desert National Conservation Lands is the Chuckwalla ACEC. The Chuckwalla Bench, a scenic plateau within the ACEC, consists of bajadas, sandy washes and desert pavement located between the Chuckwalla Mountains and the Chocolate Mountains Aerial Gunnery Range. This area is one of the best examples in California of diverse Sonoran Desert plant communities that include creosote, ocotillo, and nine species of cacti. The Chuckwalla ACEC is also critical habitat for the desert tortoise.

Wetlands along the Colorado River (adjacent to the subarea) and ephemeral flowing riparian areas at Corn Springs and Milpitas Wash are important habitats for many BLM special-status species, such as Gila Woodpecker and Lucy’s Warbler, and provide essential stopover habitat for migratory birds.

The Lower Colorado River corridor has the highest biological diversity of bat species in the western United States. Natural caves and abandoned mine sites located in and near the Little Picacho, Palo Verde, Picacho Peak, and Riverside Mountains Wildernesses provide vital habitat for rare bat species of management concern, including California leaf-nosed bat and pallid bat. All of these species have habitat encompassed by California Desert National Conservation Lands.

California Desert National Conservation Lands includes some of the dune habitats at Palen Lake and the southernmost portions of Pinto Wash system, which provide habitat for Mojave fringe-toed lizard and for additional rare plants dependent on dunes and sandy soils: Harwood’s milk-vetch and Palmer’s jackass clover.

Cultural Values

Important prehistoric and traditional cultural sites are abundant in this subarea, and California Desert National Conservation Lands would include well-known sites such as Alligator Rock, Corn Springs, Mule Mountains, and the Indian Pass Area of Traditional Cultural Concern. The Quechan, Mojave, Paiute, and many other Indian tribes and groups have lived in this area for thousands of years. Most landscapes found in these California Desert National Conservation Lands have special cultural significance to these people. Tangible evidence includes ancient trails, geoglyphs, rock art, occupation and village sites and burial sites. Several sites located within these California Desert National Conservation Lands are listed or nominated for the National Register of Historic Places, including Corn Springs and Mule Mountains. Hundreds of other sites that have not yet been recorded are likely to be found throughout the California Desert National Conservation Lands.

Alligator Rock, Corn Springs, Mule Mountains, and Indian Pass all include rock art sites, and have high cultural significance. Corn Spring was a prehistoric occupation site, and the other three are particularly known for their ancient trails and for their spiritual values. Mule Mountains also has unusual historic features associated with the World War II Desert Training Center.

The Historic Bradshaw Trail, traversing this ecoregion subarea's California Desert National Conservation Lands, was established to link the Arizona gold mine camps at La Paz (Ehrenberg) with Los Angeles in the 1860s. Stage stations were set up along the route. Beginning at Dos Palmas in Riverside County, near the Salton Sea, the trail crossed Chuckwalla Valley en route to Bradshaw's Ferry on the Colorado River and on to La Paz. Today, a remnant 65-mile section of the Bradshaw Trail extends from North Shore to Palo Verde near Blythe, California. This historic trail offers spectacular views of the Chuckwalla Bench, Orocopia Mountains, Chuckwalla Mountains, and the Palo Verde Valley, and is a remnant of a formative period in the history of the desert Southwest. The BLM designated the route as a National Back Country Byway in 1992.

Most of the subarea was part of the World War II Desert Training Center, also known as the California-Arizona Maneuver Area. From 1942 to 1944, the deserts of Southern California and Arizona became a center for the largest military combat training exercise of its time. Close to a million American soldiers cycled through a series of twelve primitive base camps—collectively known as Patton Camps—from which they conducted large-scale military maneuvers. Remnants of many of the camps, including Iron Mountain Divisional Camp, Granite Divisional Camp, Camp Clipper, Camp Coxcomb, Camp Young Divisional Camp, and Rice Army Airfield, are encompassed by California Desert National Conservation Lands in this alternative. Artifacts from camp activities include rock alignments marking camp roads and walkways, rock designs of insignias and symbols, and remnants of communication

wire, batteries and other items. Of particular interest are the topographic relief map and outdoor chapel at the Iron Mountain Divisional Camp.

Outstanding scenic values are also among the cultural values represented by California Desert National Conservation Lands in this ecoregion subarea. These are particularly recognized at McCoy Valley and northern Palen Valley.

Scientific Values

The desert tortoise and other threatened, endangered and endemic species, Unusual Plant Assemblages, complex hydrology, and prehistoric and historic resources are the focus of numerous scientific studies on California Desert National Conservation Lands in this ecoregion subarea.

Largely due to the floristic richness of the California Desert National Conservation Lands and their importance for the recovery and conservation of Agassiz's desert tortoise, ecological research values are high. Ongoing studies of desert tortoise in the Chuckwalla Bench and desert bighorn sheep in the Chuckwalla and Little Chuckwalla Mountains Wildernesses are providing important scientific information. Other special-status plants and animals offer research opportunities and would provide a wealth of knowledge on the health of populations of these species, their habitats, and landscape-scale ecosystems upon which they depend.

The Chuckwalla Bench is also the site of many botanical studies, because its flora, with 158 native species, is one of the richest in the Colorado Desert subarea. The Chuckwalla Bench area encompasses nearly all the Chuckwalla-Milpitas Wash watershed, which has the largest extant microphyll woodland in the U.S. portion of the Sonoran Desert.

The BLM-managed Wilderness Areas from Little Picacho to the Chuckwalla Mountains and north to the Palen-McCoy Wilderness form a contiguous landscape traversed by a few paved roads and OHV routes. Landscape continuity encompassed by the National Conservation Lands in this alternative provides an important setting for documenting the impacts, habitat shifts, and changes to biological diversity occasioned by climate change.

Studies of groundwater and climate change are needed to guide future management of important plant and animal habitats on California Desert National Conservation Lands in this alternative. Changes to hydrology due to changes in climate and weather pattern may alter, positively or negatively, the water cycle in the watershed. Already a focus of long-term research for desert tortoise conservation and recovery, this watershed deserves closer study to inform scientists and managers of new ways to manage desert water supplies under changing climate conditions.

The California Desert National Conservation Lands in this alternative have very high seismic activity due to the proximity of two tectonic plates, so studies of earthquakes and earth movement are also critical.

Archaeological and cultural research examines the adaptation of humans in this arid environment, and contributes to better understanding of diverse cultures. The abundant and significant cultural resources encompassed by California Desert National Conservation Lands in this subarea include archaeological sites with important information values that could contribute to our understanding and knowledge of the past.

Acreage

There are approximately 768,000 acres of California Desert National Conservation Lands in the Colorado Desert subarea.

A.4.4 Kingston-Amargosa

Background Information

The Kingston-Amargosa subarea is marked by permanent flowing water and wetlands within one of the driest desert regions on the continent. It includes a broad range of habitat types supporting diverse plant and wildlife species including many special-status species; and several narrowly endemic species, some of which may be new to science. Public lands provide critical habitat connections between a number of designated BLM Wilderness Areas such as the Kingston Range, Nopah Range and Funeral Mountains, as well as Death Valley National Park, and the Mojave National Preserve.

The subarea includes some of the most intact viewsheds in the California desert and is key to preserving the historical integrity of tribally significant landscapes, and cultural landscapes associated with the Old Spanish National Historic Trail.

Nationally significant paleontological resources in the subarea include the Mountain Pass dinosaur trackway, the only known occurrence of fossilized Mesozoic reptile tracks in California and a rare occurrence in the United States. Mountain Pass was designated for protection by Congress and is included in California Desert National Conservation Lands.

Existing BLM National Conservation Lands play an important conservation role in the subarea. They have already been designated by Congress for conservation purposes, and they are not subject to the alternatives under this plan. All or portions of the following Wilderness Areas are within the subarea: Kingston Range, Nopah Range, Resting Spring

Range, Funeral Mountains, Mesquite, Stateline, North Mesquite, Pahrump Valley, Ibex and South Nopah Range Wilderness. Other National Conservation Lands include the foreground viewshed of the Old Spanish National Historic Trail and the Amargosa Wild and Scenic River.

These areas are not managed by the BLM and are part of the California Desert National Conservation Lands but contribute to the habitat conservation goals of the DRECP: Death Valley National Park and the Mojave National Preserve.

Description of Nationally Significant Landscapes

Ecological Values

This alternative would include as California Desert National Conservation Lands the most important wildlife linkages and critical habitat in the subarea, and other lands with ecological sensitivity and natural integrity. These include critical linkages between Wilderness Areas and National Park units and intact landscapes between these large conservation areas. The linkages for wildlife migration are critical to the conservation of species in the East Mojave region, based on their geologic and topographic variability. The migration linkages support both biodiversity and opportunities for adaptation to climate change. Linkages are particularly important for sustaining the genetic integrity for the federally listed Threatened desert tortoise in the southern portion and a significant amount of suitable, intact habitat for desert bighorn sheep, a BLM Special-Status Species, especially in the Shadow Valley and Silurian Valley areas.

Ground and surface water from the surrounding mountains, primarily in Nevada, flow into the Amargosa Wild and Scenic River, which supports the endemic Amargosa pupfish and Amargosa Canyon speckled dace, as well as endemic species of spring snails. Known as the “Jewel of the Mojave,” the Amargosa drains into Badwater in Death Valley, the lowest point in the Western Hemisphere, and supports habitat for the Death Valley pupfish. The Amargosa River corridor boasts riparian communities that include riparian galleries of mesquite bosque and cottonwood; and an exceptionally rich bird life (over 300 species being found in the area), including peregrine falcon, snowy plover, and the listed least Bell’s vireo, leading to its national recognition as an Important Bird Area. This area is home to the only population of the federally listed Amargosa vole; the vole’s entire range is included in this subarea’s California Desert National Conservation Lands.

This subarea also includes the northern segment of the Amargosa River and its populations and the entire range of the federally listed Endangered Amargosa niterwort in California Desert National Conservation Lands.

The Shoshone Caves, near the town of Shoshone, support a unique assemblage of endemic invertebrates. The caves are included in California Desert National Conservation Lands.

Cultural Values

The California Desert National Conservation Lands in this ecoregion subarea include a diversity of nationally significant archaeological and historic sites within California Desert National Conservation Lands. Evidence of the earliest inhabitants includes rock art sites, a prehistoric turquoise mine, flakestone quarries, prehistoric and historic trail systems, rock alignments, sleeping rings and other sites that are associated with successful long-term human occupation of one of the harshest environments in the United States. Sites in the Shadow Valley and Silurian Valley areas are of particular importance. Historic mining areas in both valleys are also included.

Scientific Values

Unique habitat, endemic species and complex hydrology offer many opportunities for scientific research on the California Desert National Conservation Lands in this ecoregion subarea. The endemic Amargosa vole is the subject of long-term demographic, disease and genetics research and offers scientists a unique opportunity to study a relict species from wetter climate periods. The area is currently the focus of validation studies to describe new species including a number of new invertebrates in the Shoshone Caves, as well as the Shoshone whip-scorpion. Other potential species new to science include endemic spring snails in seeps and springs. These lands are also the focus of long-term studies examining the success of habitat restoration for songbirds, including the federally listed least Bell's vireo and southwestern willow flycatcher.

In terms of groundwater supply, the area is part of the vast Death Valley Regional Flow System, which extends from the springs in eastern Death Valley to north of Yucca Mountain and the Nevada National Security Site, and includes Ash Meadows National Wildlife Refuge, Devils Hole, the Spring Mountains, (all in Nevada), and several towns and smaller communities, including Shoshone, Tecopa, and Tecopa Hot Springs; domestic water for all three towns is primarily from springs rather than wells. While the aquifer through which this groundwater flows has received considerable study to the north and east, information is just now being developed for the southern Amargosa and Amargosa Wild and Scenic River. More study is required to understand better the interactions between the spring-fed Amargosa Wild and Scenic River and the regional aquifer, especially in light of climate change.

Acreage

There are approximately 433,000 acres of California Desert National Conservation Lands in the Kingston-Amargosa subarea.

A.4.5 Lake Cahuilla

Background Information

The Lake Cahuilla subarea includes a picturesque mix of scenic physical features surrounding the Imperial Valley. This valley, which is the site of ancient Lake Cahuilla and now includes the Salton Sea, is one of the lowest on Earth. Sonoran Desert habitats share the valley with agricultural, urban and other private lands that are mostly below sea level and bounded by canals that divert Colorado River water from the All-American Canal along the US-Mexico border. Forty feet above sea level is the ancient Lake Cahuilla shoreline, which marks the transition to the natural landforms and landscapes of the valley. The public lands surrounding the basin are characterized by rugged desert mountains, visible remnant shorelines of ancient Lake Cahuilla, and the Coyote Mountains and Yuha Desert with their eroded mudhills and extensive marine fossil deposits.

Low elevation sand hills are habitat for the flat-tailed horned lizard, a BLM Special-Status Species with an active conservation plan. From the southeastern edge of the ancient lakeshore the rolling sand hills increase in elevation through the East Mesa, culminating in the high Imperial Sand Dunes, also known as the Algodones Dunes. Yet further to the east are the rugged peaks of the Cargo Muchacho and Chocolate Mountains, and the Little Picacho, Picacho Peak, and Indian Pass Wilderness Areas, of the Colorado Desert subarea.

The western side of the Imperial Valley is dominated by the Peninsular Mountain Ranges rising steeply from the desert and providing habitat (including designated critical habitat) for the federally listed Endangered Peninsular bighorn sheep.

Existing BLM National Conservation Lands play an important conservation role in the subarea. They have already been designated by Congress for conservation purposes, and they are not subject to the alternatives under this plan. This subarea includes the following Wilderness: Fish Creek Mountains, Coyote Mountains, Jacumba, North Algodones Dunes, Little Picacho (small portion), Picacho (small portion); and the Juan Bautista de Anza National Historic Trail.

These areas are not managed by the BLM and are not part of the California Desert National Conservation Lands but contribute to the habitat conservation goals of the DRECP: Sonny

Bono/Salton Sea National Wildlife Refuge; Imperial State Wildlife Area; Anza-Borrego Desert State Park, including State Wilderness; and the Salton Sea State Recreation Area.

Description of Nationally Significant Landscapes

Ecological Values

The Lake Cahuilla subarea is characterized by extremes in elevation, rainfall, and land uses. The Imperial Valley is also the boundary between two tectonic plates, causing a jumble of diverse geology and soils, which results in a very high level of endemic and rare species and habitats. Three Unusual Plant Assemblages are included in the California Desert National Conservation Lands: Mesquite Thickets, Yuha Desert Crucifixion Thorn, and Munz Cholla.

San Sebastian Marsh and San Felipe Creek, included in the California Desert National Conservation Lands, represent rare occurrences of marsh and perennial stream habitat in a desert environment. The area is designated as an Unusual Plant Assemblage under Mesquite Thickets and other plant assemblages associated with water. The marsh and creek are the only designated critical habitat for the federally listed Endangered desert pupfish in California. The lowland leopard frog may also still occur in San Felipe Creek, which includes a proposed reintroduction site at its only known former breeding location. The flat-tailed horned lizard also occurs here. California Desert National Conservation Lands link the existing ACEC to existing and proposed conservation lands and ACECs to the south and west, including the Fish Creek Mountains Wilderness, Anza-Borrego Desert State Park, and West Mesa ACEC.

The West Mesa conservation lands are contiguous with San Sebastian Marsh/San Felipe Creek. The West Mesa is a transition between the Imperial Valley floor and the Peninsular Ranges. The area is habitat for the flat-tailed horned lizard, a BLM and California special-status species and a covered species under the Lower Colorado River Multi-Species Conservation Program (LCRMSCP). California Desert National Conservation Lands in this subarea would include the lands identified for recovery of the species within the LCRMSCP, and encompass landscape-level habitat values by connecting to the Fish Creek Mountains Wilderness and Anza-Borrego Desert State Park. West Mesa also supports Colorado Desert fringe-toed lizard and bighorn sheep.

Habitat for the flat-tailed horned lizard and other sensitive species is also found in this subarea's California Desert National Conservation Lands in the Yuha Desert, along with important plant communities including Yuha Desert Crucifixion Thorn Unusual Plant Assemblage; and the Ocotillo ACEC, together with rare California fan palms and an important corridor for Peninsular bighorn sheep linking the Yuha Basin, Jacumba Wilderness and Anza-Borrego Desert State Park.

California Desert National Conservation Lands on the east side of the Imperial Valley covers the Chocolate and Cargo Muchacho mountains; the low sand hills of the East Mesa bordering the Imperial Sand Dunes; and the best examples of the Lake Cahuilla shoreline. Lake Cahuilla shoreline lands on both the west and east sides of the valley include widely distributed flat-tailed horned lizard habitat. The East Mesa area, strategically essential to the LCRMSCP, has the largest contiguous area of the flat-tailed horned lizard's range with the highest relative abundance of flat-tailed horned lizard not undergoing significant surface disturbance. The East Mesa Expansion National Conservation Lands links the existing East Mesa ACEC with the remainder of the LCRMSCP essential habitat to the north. An additional block of land separated from the larger unit by Interstate 8 and the All American Canal is also included as California Desert National Conservation Lands.

Bordering the Imperial Sand Dunes on the east are California Desert National Conservation Lands that are part of a large contiguous unit creating an unbroken arc of specially designated landscapes from the lower Colorado River to Joshua Tree National Park and the Mojave Desert. These include intact wildlife corridors extending well beyond this subarea, stretching from the Sonoran Desert to the highest elevations of the Little San Bernardino Mountains and beyond. Important habitat types encompassed include microphyll woodlands, hotspots of biodiversity in the desert, and habitat for special-status or BLM Special-Status Species: Agassiz's desert tortoise, desert bighorn sheep, mountain lion ("Yuma puma"), seven species of bats, Colorado Valley woodrat, Mountain Plover, several raptor and owl species, seven other bird species, six reptile species, Couch's spadefoot toad, and 32 special-status plant species. Vegetation types include Sonoran Desert scrub, Mojave Desert scrub, desert dry wash woodland, playas, sand dunes, and desert washes. Desert pavement and biological soil crusts are important soil resources.

Cultural Values

The Lake Cahuilla subarea is culturally important in California history and to Native American tribes of the region. Because the ancient lake once filled the valley, widely distributed parcels of California Desert National Conservation Lands in this alternative include segments of the ancient Lake Cahuilla lakeshore on both the west and east sides of the valley, with extensive cultural resources from thousands of years of human occupation. In addition to shoreline occupation sites and traditional uses, these areas include trails, rock art, ceremonial sites and burials. The Kumeyaay, Quechan, Cocopah, Mojave, Paiute, and many other far ranging Indian tribes and groups have lived in the region for generations and most of the landscapes found in this subarea have special cultural significance to these peoples. The California Desert National Conservation Lands encompass several sites that are listed in, nominated for listing, or eligible for listing in the National Register of Historic Places, including San Sebastian Marsh, most of Yuha Basin, Singer Geoglyphs, Pilot Knob, and others such as the Ocotillo area where sites ranging from ancient to recent are set in a spectacularly

scenic ethnographic landscape of traditional significance to many local tribes. While these sites have been identified, are designated as ACECs and receive public visitation, hundreds or even thousands of unknown sites are likely located throughout the unit.

Many important events in European and American history occurred in this subarea. The Juan Bautista de Anza National Historic Trail commemorates the epic expedition of the 1770s that helped colonize Upper California; the unaltered landscapes of the trail route are among the last in California that give visitors a sense of the colonists' accomplishment. The California Desert National Conservation Lands include segments of the trail at San Sebastian Marsh, Yuha Basin, and connecting Fish Springs to Anza-Borrego Desert State Park, along with well-known camp sites of the Anza expedition at San Sebastian Marsh and Yuha Well.

In the Yuha Basin, this subarea also includes portions of the Southern Immigrant Trail/Butterfield Overland Stage Route, which was the main road into California during the mid-19th century. Thousands of soldiers, traders, settlers, and gold seekers crossed the southwest on this trail, particularly during the California Gold Rush. Many sections of the original trail and much of the historic landscape still exist.

Also included as California Desert National Conservation Lands, are the gold mines and ghost town of Tumco in the Cargo Muchacho Mountains, representing the early 20th century mining history of the United States. Tumco is a popular visitor destination with many photogenic ruins. The entire subarea was also part of the World War II Desert Training Center, although most vestiges of the training camps have been vandalized or removed; none of the training camps are included in this alternative.

Scientific Values

Due to the importance of this area for the recovery and conservation of so many species, ecological research values are high. Because of the extensive habitat linkage, California Desert National Conservation Lands offer unparalleled opportunities to study wildlife movement and connections between diverse habitats. Ongoing studies of desert tortoise, bighorn sheep, and other special-status plants and animals provide a wealth of knowledge on the health of these species, habitats, and ecosystems.

Studies of groundwater and climate change affecting conservation lands are needed to help guide future management. The area has very high seismic activity due to the proximity of two tectonic plates, so studies of earthquake and earth movements are critical.

Archaeological and cultural research about the adaptation of humans in this arid environment contributes to better understanding of diverse cultures. Since the area is rich in cultural resources, California Desert National Conservation Lands include lands that are

important to cooperative study, management and preservation of these resources by the BLM and Native American tribes. Many of the prehistoric archaeological sites have been listed, nominated, or are eligible for listing in the National Register of Historic Places due to their scientific research values and potential.

California Desert National Conservation Lands in this subarea also offer opportunities for paleontological research. The Yuha Basin, well known for fossil deposits, is composed of eroded badlands with portions of the Imperial Formation exposing ancient oyster shell beds and other marine fossils.

The cultural and paleontological resources discovered and studied within this unit are often associated with nationally known scientists, such as archaeologist Malcolm Rogers, and institutions including the San Diego Natural History Museum and the San Diego Museum of Man.

Acreage

There are approximately 428,000 acres of California Desert National Conservation Lands in the Lake Cahuilla subarea.

A.4.6 Mojave and Silurian Valley

Background Information

The Mojave and Silurian Valley subarea lies within the east and central Mojave Desert, with Barstow just outside its southwest corner; from there it extends beyond Soda Lake in the east and the Salt Creek Hills to the northeast. It includes the alluvial plain of the Silurian Valley, from where the Amargosa River drains it on the north, south to the South Avawatz Mountains. Water and wind erosion, and the subsequent deposition of sediments across the landscape, strongly shape the major landforms: very gently to moderately sloping alluvial fans and nearly level basin floors, with a few protruding hills. The broad valley floors have areas of sand dunes, some steeply sloping; and dry lake beds, with large playas at Soda Lake, Silver Lake, and Silurian Lake. Scattered, isolated mountain blocks are mostly less than 1,000 feet in elevation but range to over 5,250 feet.

Springs and perennial water sources are uncommon. Mean annual precipitation is about 4 to 6 inches, nearly all falling as rain during the cool winter months. Summer temperatures often exceed 100°F. The timing of spring plant growth varies with temperatures and the quantity and intensity of precipitation, bringing a wide variety of annual wildflowers in good rainfall years. The most widespread vegetation community is creosote bush scrub. Other common plant communities include saltbush on basin

floors, iodine bush and saltgrass on wet basin-fill and lacustrine deposits, and desert sand-verbena on stabilized dunes.

Existing BLM National Conservation Lands play an important conservation role in the subarea. They have already been designated by Congress for conservation purposes, and they are part of the California Desert National Conservation Lands. All or portions of the following are within the subarea: Black Mountains, Golden Valley, Grass Valley, Hollow Hills, Kingston Range, Newberry Mountains and Rodman Mountain Wildernesses; and Avawatz Mountains, Cady Mountains, Soda Mountains, and South Avawatz Mountains Wilderness Study Areas.

The Mojave National Preserve is not managed by the BLM and is not part of the California Desert National Conservation Lands, but contributes to the habitat conservation goals of the DRECP.

Description of Nationally Significant Landscapes

Ecological Values

California Desert National Conservation Lands in this subarea include critical habitat for the federally listed desert tortoise in six dispersed parts of the Superior-Cronese ACEC. The public lands that surround the Black Mountain Wilderness and lie within the Superior-Cronese ACEC have critical habitat for desert tortoise and known habitat for Mohave ground squirrel, LeConte's thrasher, and Barstow woolly sunflower. The Superior-Cronese area includes the largest of only eight known population of Parish's phacelia, most of which have not been located since pre-1980. These lands are foraging habitat for golden eagles and prairie falcons nesting nearby. Parts of the adjacent Fremont-Cramer ACEC that lie within this subarea have the same ecological values and are also included.

Desert tortoise habitat at the north end of the Ord-Rodman ACEC is also included in the California Desert National Conservation Lands, along with important habitat for the Mojave monkeyflower.

The California Desert National Conservation Lands of Coolgardie Mesa encompass populations of the narrow endemic Lane Mountain milk-vetch, a federally listed endangered species, and Barstow woolly sunflower. The area is surrounded by the Superior-Cronese ACEC and lies approximately nine miles north of Barstow, adjacent to Rainbow Basin and Owl Canyon which are also included. Coolgardie Mesa also has key habitats for Mohave ground squirrel and burrowing owl.

Mojave fringe-toed lizard habitats at the delta of the Mojave River, the Silurian Valley, and a part of Coyote Lake are part of the California Desert National Conservation Lands. Also included are populations of Parish's phacelia in the vicinity of Coyote Lake.

Along with Mojave fringe-toed lizard habitat, the California Desert National Conservation Lands in the Silurian Valley also provide nesting habitat for golden eagles, have been recognized as important migration habitat for several sensitive species of bats, and are crossed by important migration corridors for bighorn sheep.

In Afton Canyon the Mojave River flows aboveground year-round and supports riparian woodlands with an unusual riparian plant community. It hosts many rare bird species, and the canyon cliffs are home to nesting raptors. The Salt Creek Hills area is also included as California Desert National Conservation Lands because of extensive riparian habitat, important for birds; and BLM Sensitive plant species. California Desert National Conservation Lands encompass the Salt Creek ACEC, where riparian vegetation constitutes a rare habitat within the Mojave Desert and an important source of food, shelter, and nesting space for birds.

California Desert National Conservation Lands encompass large landscapes and provide habitat connectivity for terrestrial dwelling reptiles, mammals and Burrowing Owls. Important areas of habitat connectivity are between Rodman Mountains Wilderness and the Cady Mountains Wilderness Study Area (outside the subarea); between the Mojave National Preserve and Death Valley National Park through the west side of Hollow Hills Wilderness, the west side of the Kingston Range Wilderness, and the Avawatz Mountains Wilderness Study Area; and the Pilot Knob area connecting Golden Valley Wilderness and Grass Valley Wilderness.

Cultural Values

Important prehistoric and traditional cultural sites are abundant in this subarea. California Desert National Conservation Lands include well-known sites such as Afton Canyon, Inscription Canyon, Christmas Canyon and Calico Early Man site.

Humans in the Afton Canyon area left a record in the form of stone tools and pottery, some of it estimated to be over 8,000 years old. The first European to document a visit to Afton Canyon was Father Francisco Garces, a Spanish missionary, who came through in 1776 and called the area Painted Pass.

California Desert National Conservation Lands include an area surrounding the Black Mountain Wilderness, including Inscription Canyon that was listed in 2000 on the National Register of Historic Places as the Black Mountain Rock Art District. Extraordinary cultural resources include extensive assemblages of petroglyphs, significant to the religious and

spiritual concerns of Native Americans; along with lithic workshops, locations suitable for surface occupation sites and game hunting, and a major transportation corridor used by prehistoric people. Part of the Black Mountain Rock Art District is within the designated Wilderness; this alternative would expand on the area of the Rock Art District that is included in California Desert National Conservation Lands, adding Inscription Canyon, more petroglyph sites, and additional examples of all of the cultural values described.

Also among prehistoric sites listed on the National Register of Historic Places is the Calico Early Man Site, where amateur archaeologists first discovered what appeared to be primitive stone tools in 1942. Since then it has been intensively studied by scientists including famed archaeologist-paleontologist Dr. Louis Leakey, and classified as a stone tool workshop, quarry and camp site. Scientific controversy surrounds the issue of whether thousands of rocks closely resembling prehistoric tools – both on the surface and as deep as 26 feet below the surface – were actually shaped by humans or by geologic forces, because the excavated subsurface objects are many times older than currently well-accepted dates for the first human entry into the Americas. This site is part of the National Conservation Lands in this alternative.

The existing Christmas Canyon ACEC is included as California Desert National Conservation Lands. The ACEC was designated to protect archaeological resources associated with prehistoric reduction of lithic resources, particularly at a large chert quarry, and prehistoric and early historic sites associated with the collection and processing of edible plants. Approximately 72 cultural resource properties have been identified within the Canyon.

The Mojave Road or Mojave Trail is a historic route and present day dirt road across the Mojave Desert. The route, linking watering holes between the Colorado River and San Bernardino, was used by Native Americans and later served Spanish missionaries, explorers, foreign colonizers and settlers from the 18th to 19th centuries. Today, this rough road stretches 140 miles from the site of the old Fort Mohave (on the west bank of the Colorado River, roughly 10 miles southwest of Bullhead City, Arizona) to the site of the old Camp Cady (on the west bank of the Mojave River, roughly 12 miles northeast of Newberry Springs, California). A segment located in the subarea and passing through Afton Canyon is included in California Desert National Conservation Lands.

The Old Spanish Trail was a historic trade route which connected the settlements near Santa Fe, New Mexico with those of Los Angeles and Southern California. The segment of the trail across the Mojave Desert was considered one of the most arduous and difficult for pioneers to navigate. The Trail saw extensive use by pack trains from about 1830 until the mid-1850s. Part of this trail passes through the Manix ACEC and Afton Canyon areas, both of which are part of the California Desert National Conservation Lands, along with the Salt

Creek area. Salt Creek is along the Old Spanish Trail route, and the creek itself is described in several historic travel accounts. Salt Creek was along the Mormon Trail, which is important to the western expansion of the United States, and was the first known Mormon mining operation in California. The mining district and other Salt Creek sites meet the criteria for inclusion in the National Register of Historic Places.

Silurian Valley ACEC and Silurian Valley Corridor are included as California Desert National Conservation Lands under this alternative, with many culturally significant prehistoric and historic features. Three prehistoric sites recently recorded within the Silurian Valley appear to be Paleoindian sites possibly dating as far back as 12,000 years. Sites of this age are rare in the Americas. Representing the period of transition between the Pleistocene and Holocene periods, the sites may contribute to a better understanding of how humans have adapted to climate change in the past. These sites meet criteria for eligibility to the National Register of Historic Places.

The Silurian Valley is within the congressionally designated Old Spanish Trail corridor. Through the years, the Silurian Valley has seen little development and the historic landscape dating back to the Old Spanish Trail period is largely intact, with the exception of the construction and paving of State Highway 127, which for the most part follows the course of the Old Spanish Trail/Mormon Road/Salt Lake Road/Santa Fe Trail. This area has been identified as having an exceptional recreational value for a driving experience to view the landscape as it was during the period of trail usage. The historic setting meets criteria for inclusion in the National Register of Historic Places.

The Tonopah and Tidewater Railroad served as an important transportation link between the isolated mining communities of the Mojave Desert for 35 years. It originally stretched for 200 miles through remote reaches of the Mojave Desert to transport borax to market and link to the Nevada gold fields; portions are now used as a hiking trail. The nine-mile segment of the rail line that passes through the Silurian Valley conveys the difficult nature of early railroad development in the desert southwest during the historic period. This segment exhibits structural elements not seen along any of the other recorded segments of the rail line to date, including culverts, platforms, furrows, and other associated features, and meets eligibility criteria for the National Register of Historic Places.

The Tonopah and Tidewater Railroad played an important role in western expansion of the United States, making it possible for large-scale mining and settlement in the Death Valley region. The town site of Riggs, with associated mining features, is within the Silurian Valley and meets eligibility criteria for the National Register of Historic Places. Because of the association of the Tonopah and Tidewater Railroad with the local mining

in the area and the town site of Riggs, and associated mining, these collectively meet criteria for eligibility as a National Register of Historic Places district.

The Los Angeles Department of Water and Power Boulder Transmission Line, which crosses the Silurian Valley, was built in 1933 to service construction of Hoover Dam and transport power to Los Angeles, and is listed on the National Register of Historic Places.

Scientific Values

Scientific values associated with all of the ecological and cultural values described above are high, offering valuable research opportunities. Unique habitats, rare endemic plant and animal species, and the Mojave River at Afton Canyon are the focus of many ecological studies on California Desert National Conservation Lands in this subarea.

The Calico Early Man Site has been extensively studied for over 70 years, providing important information to contribute to our knowledge and understanding of the past.

Paleontological research is also underway. Ongoing studies of rock formations and fossil beds at Rainbow Basin and the Manix area have provided scientists with valuable information about life during the middle Miocene epoch, between 12 and 16 million years ago.

Acreage

There are approximately 271,000 acres of California Desert National Conservation Lands in the Mojave and Silurian Valley subarea.

A.4.7 Pinto, Lucerne Valley, and Eastern Slopes

Background Information

Lands of this subarea span diverse landscapes of the south-central Mojave Desert and the San Bernardino Mountains, from 1,000 feet to over 6,000 feet in elevation. The subarea includes most of Joshua Tree National Park, the north and east facing slopes of the San Bernardino Mountains, and desert ranges of the southern Mojave Desert.

The subarea's central portion includes the vast Twentynine Palms Marine Corps Air Ground Combat Center and the growing communities of the Morongo Basin and Lucerne Valley. These are essentially surrounded by public lands that are important to maintaining a variety of sensitive natural resources.

Existing BLM National Conservation Lands play an important conservation role in the subarea. They have already been designated by Congress for conservation purposes, and they are not subject to the alternatives under this plan: Wilderness – Pinto Mountains, San Gorgonio, Bighorn Mountains, Cleghorn Lakes (portion), Rodman Mountains, Newberry Mountains; and National Trails System – Pacific Crest National Scenic Trail.

Joshua Tree National Park is managed by the National Park Service and is not part of the California Desert National Conservation Lands, but contributes to the habitat conservation goals of the DRECP.

Description of Nationally Significant Landscapes

Ecological Values

California Desert National Conservation Lands are grouped into three clusters, in the northeast, west central, and west parts of the subarea. Each cluster would weave together some of the most diverse and threatened habitats in the California desert. This diversity is represented in a national park, 10 ACECs, and two Unusual Plant Assemblages: Pipes Canyon Huge Joshua Trees and Ord Mountain Jojoba Assemblage.

California Desert National Conservation Lands in the northeast part of the subarea connect the Newberry and Rodman Mountains Wilderness Areas with the Ord Mountains complex which supports a high concentration of breeding sites for golden eagles and prairie falcons. These lands also encompass areas important for wildlife habitat connectivity between these Wilderness Areas, and important habitat for Agassiz's desert tortoise, Mojave monkeyflower, and other sensitive species.

The west central part of the subarea is the transitional landscape between the San Bernardino Mountains and the Mojave Desert and sits on the edge of the urban interface with the Los Angeles metropolitan area. The California Desert National Conservation Lands in the Bighorn Mountains and Pipes Canyon areas form a wildlife connectivity corridor between Johnson Valley and Twentynine Palms, within the DRECP Plan Area, and National Forest lands outside the DRECP Plan Area.

California Desert National Conservation Lands also include Juniper Flats, with habitat for the coast horned lizard and the gray vireo, both BLM Sensitive; and the Carbonate Endemic Plant Research Natural Area ACEC, which supports an unusual geologic, soil, and plant association and contains habitat for threatened and endangered species.

In the southeastern part of the subarea, California Desert National Conservation Lands provide habitat for the Mojave fringe-toed lizard, Agassiz's desert tortoise, and other sensitive species in a region increasingly fragmented by development, private lands, and

military uses. This includes the lands known as the “saddle” of Joshua Tree National Park, or the Pinto Mountains, which have high biological and cultural values and are proposed as additions to the National Park.

Cultural Values

As a region of transition between desert and coast, this subarea has a rich human history from prehistoric times to recent events, encompassing significant cultural resources. California Desert National Conservation Lands in this alternative encompass important remnants of Native American habitation, trails, and spiritual sites.

The Pipes Canyon area has numerous prehistoric resources that would meet criteria for inclusion to the National Register of Historic Places as contributing elements of an Eligible District; and has the greatest concentration of known National Register eligible sites within the area administered by BLM’s Barstow Field Office. The Juniper Flats Cultural Area encompasses numerous rock shelters and village sites that meet the criteria for National Register of Historic Places listing; and, being located in a transition area between the mountains and Mojave Desert, can contribute to understanding local peoples’ migration patterns. The Bighorn Mountains Wilderness, Juniper Flats ACEC, and surrounding public lands also have special significance to modern local residents for their scenic and historic values.

Late 19th and early 20th century mining and ranching facilities are found throughout the subarea, particularly the Dale Mining District in the Joshua Tree National Park “saddle.” The historic WWII Desert Training Center boundary overlaps this subarea on the east, and vestiges of the DTC would be included in the California Desert National Conservation Lands.

Scientific Values

California Desert National Conservation Lands in this alternative have significant scientific value, given the diverse landscapes which link the San Bernardino Mountains with the Mojave Desert and Joshua Tree National Park. Unique soils, extremes in elevation, ancient plant clones, widespread cultural resources, and the proximity to urban Southern California all contribute to this area being a world class natural laboratory. The area is already the focus of numerous research projects and most regional universities use the proposed National Conservation Lands for teaching and study.

Acreage

There are approximately 296,000 acres of California Desert National Conservation Lands in the Pinto, Lucerne Valley, and Eastern Slopes.

A.4.8 Piute Valley and Sacramento Mountains

Background Information

The remote Piute Valley and Sacramento Mountains subarea spans the transition zone between the Mojave and Sonoran Deserts. With some of the most intact and scenic landscapes in the California deserts, the subarea encompasses visual extremes: many distinct rugged mountains ranges, each with its own character; large washes, steep canyons, and expansive piedmont plains. The vistas of Piute Valley provide a nearly 360-degree panorama of mountains; and the grand-scale Chemehuevi Wash system, with washes within washes, collects the flash flood waters from mountains to the west en route to the Colorado River.

Needles, the largest city in the subarea, is located in the Mohave Valley straddling the California, Arizona and Nevada borders at the southern edge of the Mojave Desert, on the western banks of the Colorado River. Communities just outside the subarea include Bullhead City, Lake Havasu City, and Parker in Arizona, and Laughlin in Nevada. Las Vegas is 110 miles to the north. Interstate 40 and U.S. Highway 95 are the conduits for bringing visitors to the subarea.

Six BLM Wilderness Areas, overlapping with six ACECs, are currently part of the subarea. The Chemehuevi Mountains National Conservation Lands link the subarea's wildernesses to other BLM wildernesses west of the Sacramento Mountains and to the Mojave National Preserve. A Congressionally protected wild burro population frequents the Chemehuevi Wash region, favoring the BLM public lands closest to the Colorado River.

Existing BLM National Conservation Lands play an important conservation role in the subarea. They have already been designated by Congress for conservation purposes, and they are not included in the California Desert National Conservation Lands. All or portions of the following Wilderness Areas are within the subarea: Bigelow Cholla Garden, Chemehuevi Mountains, Dead Mountains, Stepladder Mountains, Turtle Mountains, and Whipple Mountains Wilderness Areas.

These areas are not managed by the BLM and are not part of the California Desert National Conservation Lands, but contribute to the habitat conservation goals of the DRECP: Mojave National Preserve and Havasu National Wildlife Refuge.

Description of Nationally Significant Landscapes

Ecological Values

This subarea includes California Desert National Conservation Lands around and connecting all six Wilderness Areas. The Piute Valley provides important habitat connectivity between the Dead Mountains Wilderness and the Piute Range in the Mojave National Preserve to the west; and the Newberry Mountains in Nevada to the northeast.

California Desert National Conservation Lands include the watershed draining through Chemehuevi Wash to the Colorado River, except for the lower Wash as it narrows toward the Colorado River between the Chemehuevi Mountains and Whipple Mountains Wilderness; and lands in the Homer Wash, a large Mojave Desert wash system in Ward Valley running from the westernmost point of the Bigelow Cholla Garden Wilderness south to the west side of the Stepladder Mountains Wilderness.

The Whipple Mountains are particularly important for their vegetation. Recent botanical studies have uncovered species previously unknown in California but typical of the Upper Sonoran Zone further east across the Colorado River in Arizona.

In the Mojave Desert zone of this subarea, the Bigelow Cholla Garden Wilderness is included in existing National Conservation Lands. The wilderness hosts the largest population of teddybear (Bigelow) chollas, in an Unusual Plant Assemblage. California Desert National Conservation Lands would encompass more teddybear cholla stands in the Chemehuevi Valley and the Sacramento Mountains.

The Chemehuevi Valley provides critical habitat for desert tortoise and other Mojave and Sonoran Desert animal and plant species. Chemehuevi Wash, which drains the center of the valley, is home to the northernmost Sonoran Desert microphyll woodland in California; massive old-growth blue palo verde trees; and a carefully documented Unusual Plant Assemblage of thriving Emory's crucifixion thorn shrubs.

Sonoran Desert microphyll woodlands in washes provide cover and food for migratory land birds traveling on the Colorado River Flyway. California Desert National Conservation Lands in the northernmost headwaters of the Vidal Wash system and the core of Chemehuevi Wash are important microphyll woodland habitats for nesting birds, including rare species such as long-eared owl, Arizona Bell's vireo, Crissal and Bendire's thrashers, and Lucy's warbler. The woodlands provide good winter habitat for raptors, mountain bluebirds, and many sparrow species.

California Desert National Conservation Lands include in upland areas with extensive habitat for declining species such as burrowing owl, loggerhead shrike, and American badger. Cliffs and ledges provide nesting habitat for golden eagles and prairie falcons.

Important linkages providing habitat connectivity for wildlife are included. Habitat corridors connect the major Chemehuevi and Fenner-Paiute desert tortoise population centers to other centers to the west. Desert bighorn sheep benefit from the intact landscape connectivity among large, mountainous wilderness areas included in California Desert National Conservation Lands.

Bats find maternity and hibernation habitat in abandoned mines, mainly located in existing designated Wilderness and in California Desert National Conservation Lands in the Sacramento Mountains; and with food sources nearby along the Colorado River and throughout the subarea. California Desert National Conservation Lands include important foraging habitat for BLM Sensitive bat species: fringed myotis, Yuma myotis, California leaf-nosed bat, and the site of a pallid bat colony in the Sacramento Mountains.

Important special-status plant populations included in California Desert National Conservation Lands: Kofa Mountain bearberry (*Berberis harrisoniana*), glandular ditaxis (*Ditaxis claryana*), wand-like fleabane daisy (*Erigeron oxyphyllus*), Graham's fishhook cactus (*Mammillaria grahamii* var. *grahamii*), spiny-hair blazing star (*Mentzelia tricuspidis*), Arizona pholistoma (*Pholistoma auritum* var. *arizonicum*), and narrow-leaved psorothamnus (*Psorothamnus fremontii* var. *attenuatus*).

Cultural Values

Lands draining to the Colorado River have long been important to native peoples, with numerous cultural sites significant to the Colorado River Tribes and other Native American groups. California Desert National Conservation Lands include ancient petroglyphs, pictographs, trails, and stonework sites, and bear witness to the lives of the first peoples.

Ancestors of the Fort Mojave Indian Tribe lived in the Mojave Valley area for thousands of years prior to the European exploration of the area. In the Mojave language they call themselves the "Pipa Aha Macav," meaning "people who live along the river." To the south along the river at the mouth of Chemehuevi Wash are the lands of the Chemehuevi Indian Tribe. Tribe members, Nuwu (the People), are descendants of nomadic residents of the eastern Mojave Desert mountains and canyons and the Colorado River shoreline. The southeast edge of the subarea borders the north end of the Colorado Indian Tribes reservation, where members of the Chemehuevi, Mojave, Hopi, and Navajo tribes reside. Significant cultural and historic resources in California Desert National Conservation Lands include many prehistoric and historic sites associated with, but not adjacent to, the

Colorado River. These lands encompass cultural sites, including trails, sacred sites and petroglyphs, significant to federally recognized tribes and other Native American groups.

The Sacramento Mountains have many prehistoric sites and features, most notably remnants of a northeast-southwest trending trail system that traverses the range, with associated sites and artifacts indicating seasonal and continuous usage. The trail continues to have high cultural significance, especially to the Fort Mohave Indian Tribe who have a name for the trail and still actively visit sites along it. Historic sites are also found in the Sacramento Mountains, with those in the south associated with mining; and in the north, with the World War II Desert Training Center. Sites on the west side of the Sacramento Mountains are included as California Desert National Conservation Lands.

California Desert National Conservation Lands include lands within the proposed Mojave Trails National Monument. The portions of the historic Mojave Road (Mojave Trail) and the Old Spanish National Historic Trail from the Nevada state line to the eastern boundary of the Mojave National Preserve would be part of the National Conservation Lands. The Mojave Trail was used prehistorically by Native Americans, and historically by explorers and pioneer immigrants.

A segment of historic U.S. Route 66, the major route from the 1920s through the 1960s for immigrants moving to California from the Midwest, is located within the subarea. This entire segment is part of the California Desert National Conservation Lands.

A portion of the subarea was part of the World War II Desert Training Center, also known as the California-Arizona Maneuver Area. From 1942 to 1944, the deserts of Southern California and Arizona became a combat training center for the largest military training exercise of its time. Close to a million American soldiers cycled through a series of twelve primitive base camps – collectively known as Patton Camps – from which they conducted large-scale military maneuvers. One camp in this subarea, Camp Ibis, was at its height home to several Armored Divisions, each numbering over 20,000 troops. A series of roads and rock-outlined trails remain, along with insignia and scattered paraphernalia, wires, buttons and canteens. The largest remaining structure is a concrete reservoir to the northeast of the old Division Headquarters. Camp Ibis and its environs are part of the California Desert National Conservation Lands.

Scientific Values

The Chemehuevi Wash system is about 15 miles wide where it crosses Highway 95, draining from six blocks of mountains: the Turtle Mountains in the southwest, Stepladder Mountains on the west, Sacramento Mountains on the north, Chemehuevi Mountains on the northeast, and Whipple Mountains on the southeast. Unique geological, biotic, and cultural features make the Chemehuevi Wash watershed a valued resource for multidisciplinary

scientific inquiry. To the west, Homer Wash running through Ward Valley is a larger-scale Mojave Desert wash system that provides a contrast in processes between the Sonoran and Mojave Deserts.

Due to the importance of the California Desert National Conservation Lands for recovery and conservation of desert tortoise, other special-status animal and plant species, and unique vegetation alliances, scientific and research values are high. The continuum of intact Mojave Desert habitats encompassed by National Conservation Lands, including riparian areas, springs, Joshua tree woodlands, and big galleta shrub-steppe offers abundant research opportunities. Plant communities at the limits of their range, such as the Whipple Mountains' saguaro cactus population, are of unique value to scientists studying the ecological factors that define their extent.

The Teddybear Cholla (*Opuntia bigelovii*) Research Natural Area, included as California Desert National Conservation Lands, supports the northernmost population of teddybear cholla in the subarea. Bisected by Interstate Highway 40, the area lies on a gently sloping Quaternary alluvial plain on the west side of the Sacramento Mountains and is an outstanding example of stands of cholla within a creosote bush scrub community. The University of California manages the adjacent Sacramento Mountains Reserve as a center for ecological research. Geologists have also worked extensively in this area.

Many archaeological and anthropological studies are being conducted by scientists from the University of California and other academic institutions. These important studies contribute to better knowledge and appreciation of how humans have adapted to the harsh desert environment.

Acreage

There are approximately 417,000 acres of California Desert National Conservation Lands in the Piute Valley and Sacramento Mountains.

A.4.9 South Mojave-Amboy

Background Information

This central part of the Mojave Desert encompasses some the most iconic features of the CDCA. The Old Woman and Providence Mountains provide a dramatic backdrop to the intervening valleys and mountain ranges. The subarea includes some of the most diverse geologic features of the Mojave Desert, such as volcanic cinder cones and lava flows (Amboy and Pisgah Craters), limestone formations (Mitchell Caverns), and some of the tallest sand dunes in the nation (Kelso Dunes). The Marble Mountain Range contains one of

the classic Cambrian trilobite fossil sites of the United States. The Marble Mountain Fossil Beds lie in a beautiful shale formation that is 60 feet thick and over 550 million years old. While some of these features are protected, similar geologic resources are found throughout the subarea and are vulnerable to impacts from mining and other development. A large portion of the Mojave National Preserve is located in the northern part of the subarea, and historic U.S. Route 66 extends across the entire subarea.

Existing BLM National Conservation Lands play an important conservation role in the subarea. They have already been designated by Congress for conservation purposes, and they are not part of the California Desert National Conservation Lands: all of the Clipper Mountains, Piute Mountains and Trilobite Wildernesses; parts of the Bigelow Cholla Garden, Bristol Mountains, Cleghorn Lakes, Kelso Dunes, Old Woman Mountains and Sheephole Valley Wildernesses; and part of the Cady Mountains Wilderness Study Area.

These areas are not managed by the BLM and are not part of the California Desert National Conservation Lands: Joshua Tree National Park (very small part), Mojave National Preserve (part), Providence Mountains State Recreation Area/Mitchell Caverns Natural Preserve.

Description of Nationally Significant Landscapes

Ecological Values

The subarea has some of the best-quality habitat for Agassiz's desert tortoise in the southeast Mojave Desert, with a third of the Chemehuevi ACEC within the subarea. The BLM established this ACEC to conserve critical Agassiz's desert tortoise habitat. California Desert National Conservation Lands in this subarea link the Ord-Rodman ACEC with the Chemehuevi ACEC across the Amboy-Cadiz Valley area. The transitional ecosystem attracts a variety of birds including sensitive species such as burrowing owl, loggerhead shrike, and Bendire's thrasher as well as desert raptors such as prairie falcon.

California Desert National Conservation Lands also encompass specialized dune habitat for Mojave fringe-toed lizards; and roosting habitat for BLM Sensitive bat species: Townsend's big-eared bat, pallid bat, California leaf-nosed bat and Western small-footed myotis.

Many rare and sensitive plants with highly localized ranges are included in California Desert National Conservation Lands: small-flowered androstephium (*Androstephium breviflorum*), Emory's crucifixion-thorn (*Castela emoryi*), Clokey's cryptantha (*Cryptantha clokeyi*), Arizona cymopterus (*Cymopterus multinervatus*), glandular ditaxis (*Ditaxis claryana*), Harwood's eriastrum (*Eriastrum harwoodii*), Orocopia Mountains spurge (*Euphorbia jaegeri*), knotted rush (*Juncus nodosus*), Darlington's blazing-star (*Mentzelia puberula*), Robison's monardella (*Monardella robisonii*), white-margined beardtongue

(*Penstemon albomarginatus*), desert beardtongue (*P. pseudospectabilis* ssp. *pseudospectabilis*), Stephens' beardtongue (*P. stephensii*), and lobed ground-cherry (*Physalis lobata*).

Between the Clipper Mountains and the Trilobite Wilderness Areas is Bonanza Spring, one of the few natural watering areas for wildlife in the Mojave Desert. California Desert National Conservation Lands would include this reliable and critical water source for bighorn sheep and other species that traverse this vast, arid landscape.

California Desert National Conservation Lands also include an unusual invertebrate assemblage associated with lava tubes in and around the Pisgah Crater; some species may not yet be described by science.

This alternative provides connectivity among all Wilderness Areas, and links the Mojave National Preserve to Joshua Tree National Park to the south, with California Desert National Conservation Lands.

Cultural Values

The California Desert National Conservation Lands in this subarea is rich in cultural resources. Recently an important geoglyph has been discovered here, only the second site of this specific type known; this site meets criteria for eligibility to the National Register of Historic Places. Many other culturally significant sites and landscapes are important to local and regional tribes. Outstanding Native American prehistoric resources include an obsidian source in the Castle Mountains area that provided material found throughout the Mojave Desert.

Significant trails and travel corridors used for thousands of years crisscross the area. Native American trade routes were subsequently used by Spanish, Mexican, and American explorers, soldiers, miners, and traders. U.S. Route 66, one of the earliest and most revered cross country motor routes, traverses the middle of the subarea and is still enjoyed by motorists today. The Mojave Trails National Monument encompasses these along with outstanding scenic values; most of the National Monument is included in this alternative's National Conservation Lands.

Amboy Crater is visible from a great distance as a prominent landscape feature and served as a landmark for Native Americans and early explorers, guides and immigrants. It is today recognized as a National Natural Landmark with outstanding historic and scenic values.

Remnants of the railroad, ranching and mining history of the old West are scattered throughout the National Conservation Lands in this alternative, including the historic Barnwell railroad grade (now inactive), the historic town of Hart, and the Hart and Viceroy

mines in the Castle Peak area. Also included in California Desert National Conservation Lands are remnants of the Tonopah and Tidewater railroad (inactive), and the Atchinson, Topeka and Santa Fe railroads (still active). Bonanza Spring was used as a water source along U.S. Route 66 and provided water for historic railroad steam engines. These contribute to a rich legacy of western-American and mining history.

Much of the World War II California-Arizona Maneuver Area and Desert Training Center lies within this subarea; its associated camps and maneuver areas are some of the last tangible remnants of World War II in the continental United States. These sites are scattered across this subarea, may be eligible for the National Register of Historic Places, and are included as California Desert National Conservation Lands.

The scenic view from Hart Mountain looks out over adjacent and contiguous wilderness, including views of many of the highest peaks in the Mojave Desert. The remote nature of this area offers present-day residents and visitors the opportunity to enjoy increasingly rare natural soundscapes.

Scientific Values

Due to the importance of areas included as California Desert National Conservation Lands for the recovery and conservation of desert tortoise and other species, ecological research opportunities abound. With its extensive habitat linkages, this unit offers unparalleled opportunities to study wildlife movement and connections between diverse habitats. Ongoing studies of desert tortoise, bighorn sheep and other special-status plants and animals provide a wealth of knowledge on the health of these species' populations, habitats and ecosystems. The subarea also offers opportunities to study groundwater and climate change to help guide future management.

The paleontological resources of the area, such as the Marble Mountains fossil beds, contribute to understanding earth's history. California Desert National Conservation Lands also have some of the best examples of volcanism in the California desert, important both for research and as accessible natural laboratories for students and the general public. Amboy Crater National Natural Landmark provides an outstanding educational example of a symmetrical volcanic cinder cone and, along with the Pisgah area, often serves as a Mars analog for studying soil erosion and deposition processes and for testing scientific techniques and equipment including Mars rovers.

With its rich cultural resources, this subunit provides abundant opportunities for studies of humans' prehistoric and historic ways of adapting to this arid environment, and contributes to better understanding of diverse cultures. Research is promoted by cooperative management of these resources by the BLM and Native American tribes.

Acreage

There are approximately 638,000 acres of National Conservation Lands in the South Mojave-Amboy subarea.

A.4.10 Western Desert and Eastern Slope

Background Information

Elevations within the Western Desert and Eastern Slope subarea vary from about 2,000 feet to more than 8,000 feet. Mountains rise abruptly from the desert floor, creating dramatic changes in climatic conditions over short distances. The area's great diversity of vegetation communities reflects these changes in moisture and temperature. With increasing elevation, the area transitions from Mojave Desert creosote scrub through Joshua tree woodland to pinyon/juniper and oak/pine assemblages. Joshua trees may be found in close association with singleleaf pinyon pine, juniper, gray pine, Jeffrey pine, and canyon live oak, blending Mojave and Sierran associations and resulting in a high level of biodiversity. When the area has received sufficient moisture, colorful wildflower displays are some of the most spectacular in the West Mojave Desert.

The subarea provides habitat for diverse wildlife species, including black bear, coyote, badger, mountain lion, bobcat, and important game species such as mule deer, Chukar, Mountain Quail and California Quail. Perennial streams flow through several of the canyons in the Piute Mountains and the Eastern Sierra and provide aquatic and riparian habitats, which are rare in Southern California. These riparian areas provide essential migration stop-over habitats for neotropical migratory birds, as well as nesting habitat for both migrant and resident bird species. The subarea also has high-quality habitat for raptors, and for a number of special-status animals and plants.

The cultural values of the subarea are as diverse as the ecological values and include a range of cultural resource property types from prehistoric lithic scatters to ethnographic villages and historic mining features. This area falls within the traditional homelands of the Kawaiisu, Serrano, Kitanemuk, Tubatalabal, Chemehuevi, and Western Shoshone tribal groups; places of traditional cultural importance are found throughout.

Existing BLM National Conservation Lands play an important conservation role in the subarea. They have already been designated by Congress for conservation purposes, and they are not included in California Desert National Conservation Lands: Pacific Crest National Scenic Trail; Kiavah, Black Mountain, Grass Valley, Golden Valley, El Paso

Mountains (southwest portion), Owens Peak (south portion), Bright Star, El Paso Mountains, and Sacatar Trail Wilderness Areas.

These areas are not managed by the BLM and are not included in the California Desert National Conservation Lands, but contribute to the habitat conservation goals of the DRECP: Red Rock Canyon State Park, Audubon's California Kelso Creek Sanctuary and Kern River Preserve.

Description of Nationally Significant Landscapes

Ecological Values

California Desert National Conservation Lands incorporate important habitat linkages between the El Paso Mountains Wilderness and the Kiavah Wilderness for all wildlife. These are particularly important for sustaining populations of Mohave ground squirrel, a State-listed species, along with small portions of two other core population centers included in the Fremont Valley area.

The Desert Tortoise Research Natural Area and the Western Rand Mountains, which constitute part of the Fremont-Kramer unit of designated desert tortoise critical habitat, are included as California Desert National Conservation Lands.

California Desert National Conservation Lands in this subarea include north-south and east-west linkages across the subarea, encompassing stopover sites and habitat connectivity for the Pacific migratory bird flyway along the eastern flank of the Sierra. The National Audubon Society has nominated the riparian areas in the Sierra canyons as Important Bird Areas.

Kelso Valley and the Piute Mountains have scattered springs that are essential components of migratory and breeding bird habitat in the southern Sierra Nevada forests; and the California Audubon Kern River Preserve, the largest contiguous cottonwood riparian forest in California. California Desert National Conservation Lands in this alternative include Butterbrecht Canyon and Spring, where birders come from all over the world to see fantastically high numbers of birds during spring migration. It is designated as a Globally Important Bird Area by the American Bird Conservancy, a renowned organization dedicated to world-wide bird conservation. Also included in California Desert National Conservation Lands is Kelso Valley Bendire's thrasher habitat, consisting of areas with blackbrush, junipers, Wiggins' cholla and Joshua trees. Bendire's thrasher is a California Species of Special Concern and a BLM Special-Status Species.

This subarea supports high densities of golden eagles for Southern California because canyon cliffs and adjacent valleys offer exceptional habitats for nesting and foraging. California Desert National Conservation Lands include Golden Eagle nesting sites on the

cliffs on either side of Kelso Valley and other Sierra Nevada canyons, linking together a broad foraging area between the Sierra Nevada front and the El Paso Mountains Wilderness. California Desert National Conservation Lands also include habitat for California condor as the species expands into its former range.

California Desert National Conservation Lands include the southern Sierra peak of Middle Knob, which is exceptional habitat for raptors and provides unique soil conditions for sensitive plant species; and highly Unusual Plant Assemblages in the Piute Mountains where Joshua trees mingle with Jeffrey pines.

Riparian areas that adjoin drainages in Sequoia National Forest provide a preferred habitat of the Tehachapi slender salamander, riparian areas with fallen logs. This salamander is a State-listed Threatened species found only in isolated areas of the Piute and Tehachapi Mountains.

Rare plant populations and habitats encompassed by California Desert National Conservation Lands include, in the Piute Mountains, a population of the BLM special-status species Palmer's mariposa lily (*Calochortus palmeri* var. *palmeri*) with its showy pink blossoms; in Kelso Valley, the entire known range of the beautiful, minute Kelso Creek monkey flower (*Mimulus shevockii*); and the unusual botanical diversity of Short Canyon with rare endemic plants such as Charlotte phacelia (*Phacelia nashiana*), Latimer's woodland gilia (*Saltugilia latimeri*), and state-listed Endangered Mojave tarplant (*Deinandra mohavensis*)

California Desert National Conservation Lands also include quality habitat for burrowing owl and Townsend's big-eared bat, both BLM Special-Status Species.

Cultural Values

Prehistoric cultural resource properties found throughout this subarea are considered extraordinary examples of prehistoric lifeways. These include extensive assemblages of petroglyphs and pictographs, lithic workshops, obsidian and chert resource quarries, milling complexes, prehistoric and ethnographic village sites and burial complexes. These assemblages represent in excess of 10,000 years of human occupation, with the potential for many more properties with assemblages that will further our knowledge of the past. Also included are major transportation corridors and trade routes across the Sierra Nevada mountain range from the Mojave Desert to the Central Valley and California Coast. These are vital to our understanding of patterns of mobility of prehistoric and historic people of the Mojave Desert in relation to the resources and cultural groups in the Sierra Nevada, Central Valley, and Pacific Coast.

Historic resources are likewise abundant, many of which are superb examples of sites associated with exploration by the Spanish and Euro-Americans, contact with Native American communities in California, the advancement and development of the Western frontier, American vernacular architecture, mining landscapes in the West, and the Civilian Conservation Corps.

Native American values in this subarea include sacred sites, places of religious and ceremonial importance, and areas of traditional use and gathering of the Tubatalabal, Kitanemuk, Serrano, Chemehuevi, Southern Paiute, and Kawaiisu people. The majority of these tribal groups are not currently federally recognized; California Desert National Conservation Lands in this alternative include areas important to the management and preservation of the resources significant to these cultural groups, particularly those within the Jawbone-Butterbredt area, encompassing large portions of the landscape where these significant resource values have been identified.

Well-known and National Register listed sites encompassed by California Desert National Conservation Lands proposed in this alternative include Last Chance Canyon, Black Mountain, and Inscription Canyon National Register Archaeological Districts; portions of the First Los Angeles Aqueduct and its associated construction camps; Blackwater Well; Boulder Springs; Bird Springs Pass; and a small portion of the Twenty Mule Team Road at the west end of Pilot Knob north of Grass Valley Wilderness.

Scientific Values

All of the ecological and cultural resources described above have scientific value, and many are currently undergoing intensive research. Point Blue (formerly PRBO Conservation Science) collects data on migratory birds using the flyway along the east side of the Sierra range, where birds stop at Little Lake in this subarea before continuing north to Haiwee Reservoir and Owens Lake as they migrate through the valley. The US Fish and Wildlife Service is conducting studies on the California Condor as this species expands further into its former range. Researchers are studying Golden Eagles to better understand their home ranges and migratory movements. In the western portion of the subarea, researchers are attempting to define the range and population status of the Tehachapi slender salamander.

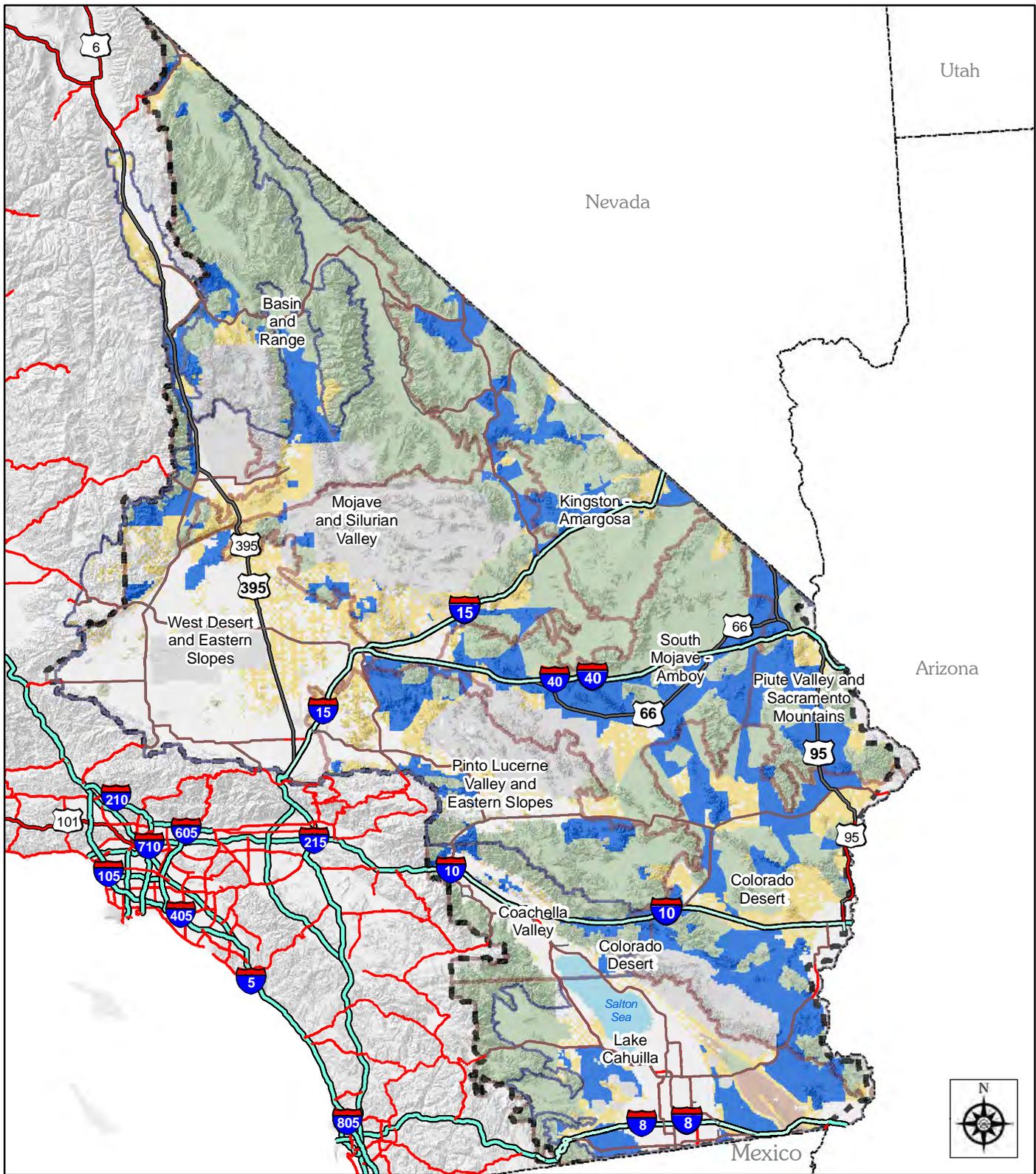
The Desert Tortoise Research Natural Area, included as California Desert National Conservation Lands, has been the location of numerous scientific research projects because of its protected, recovering desert habitat. While the main focus of peer reviewed projects at this Research Natural Area has been desert tortoises and their habitat, studies also address Mohave ground squirrels, desert kit foxes, birds, lizards and plant communities, along with different habitat management techniques.

The Townsend's big-eared bat is the focus of several studies since populations of this species are steeply declining. Scientific studies of the Mohave ground squirrel and its essential habitat are also ongoing.

Archaeological, cultural, and historic research being conducted on California Desert National Conservation Lands is contributing greatly to the understanding of human adaptation in a wide range of ecological zones, landscape use and mobility by prehistoric and historic people, and the diversity and interaction spheres of cultural groups in this and surrounding regions.

Acreage

There are approximately 200,000 acres of California Desert National Conservation Lands in the Western Desert and Eastern Slope subarea.

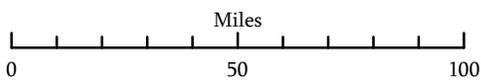
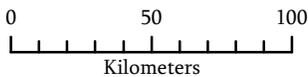


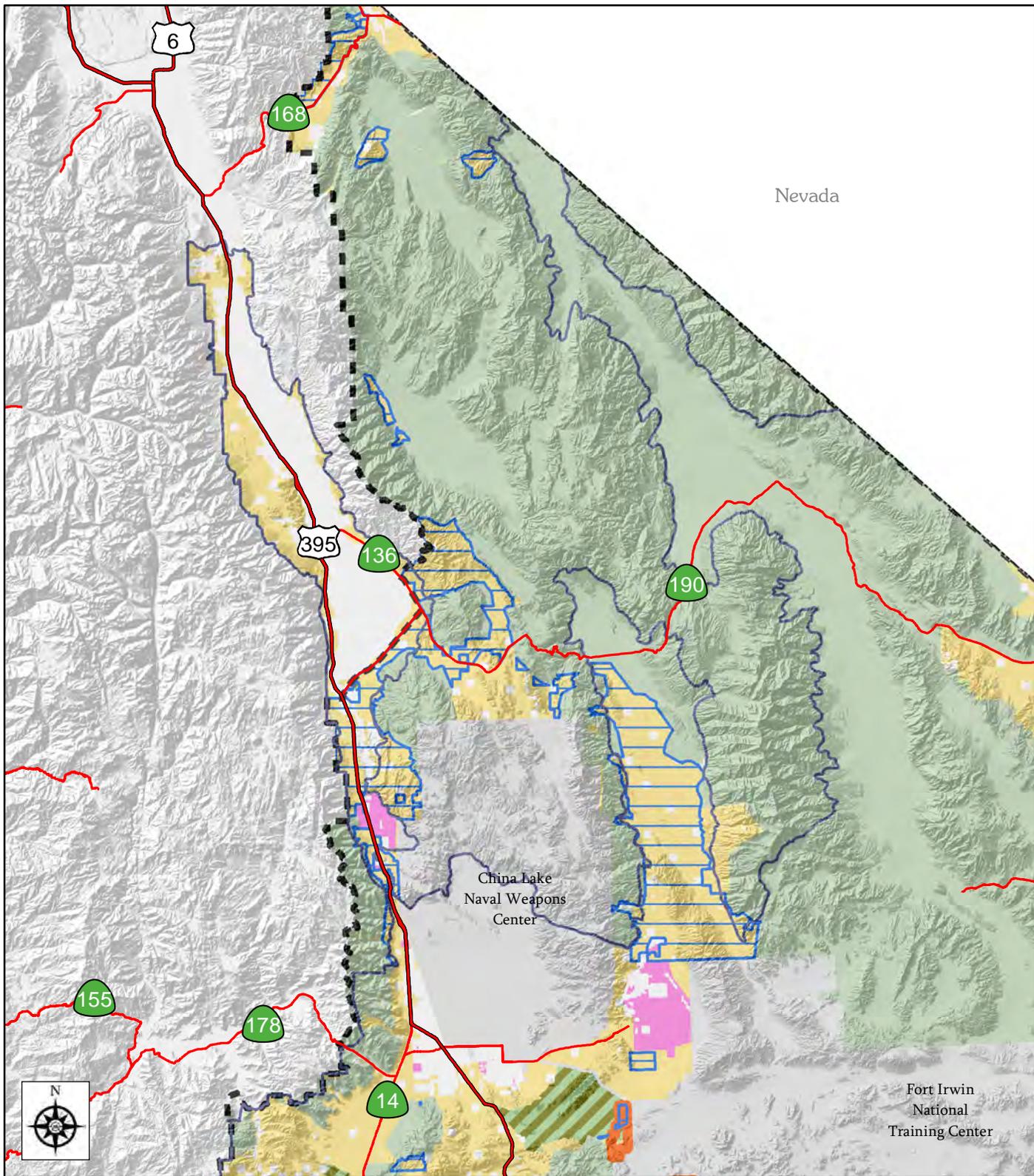
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 - DRECP Boundary
 - CDCA Boundary
 - LLPA
 - Imperial Sand Dunes Open OHV Area
- Land Status**
- Bureau of Land Management
 - Department of Defense

California National Desert Conservation Lands

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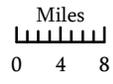
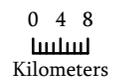
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- Renewable Footprint**
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- Land Status**
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-  Department of Defense

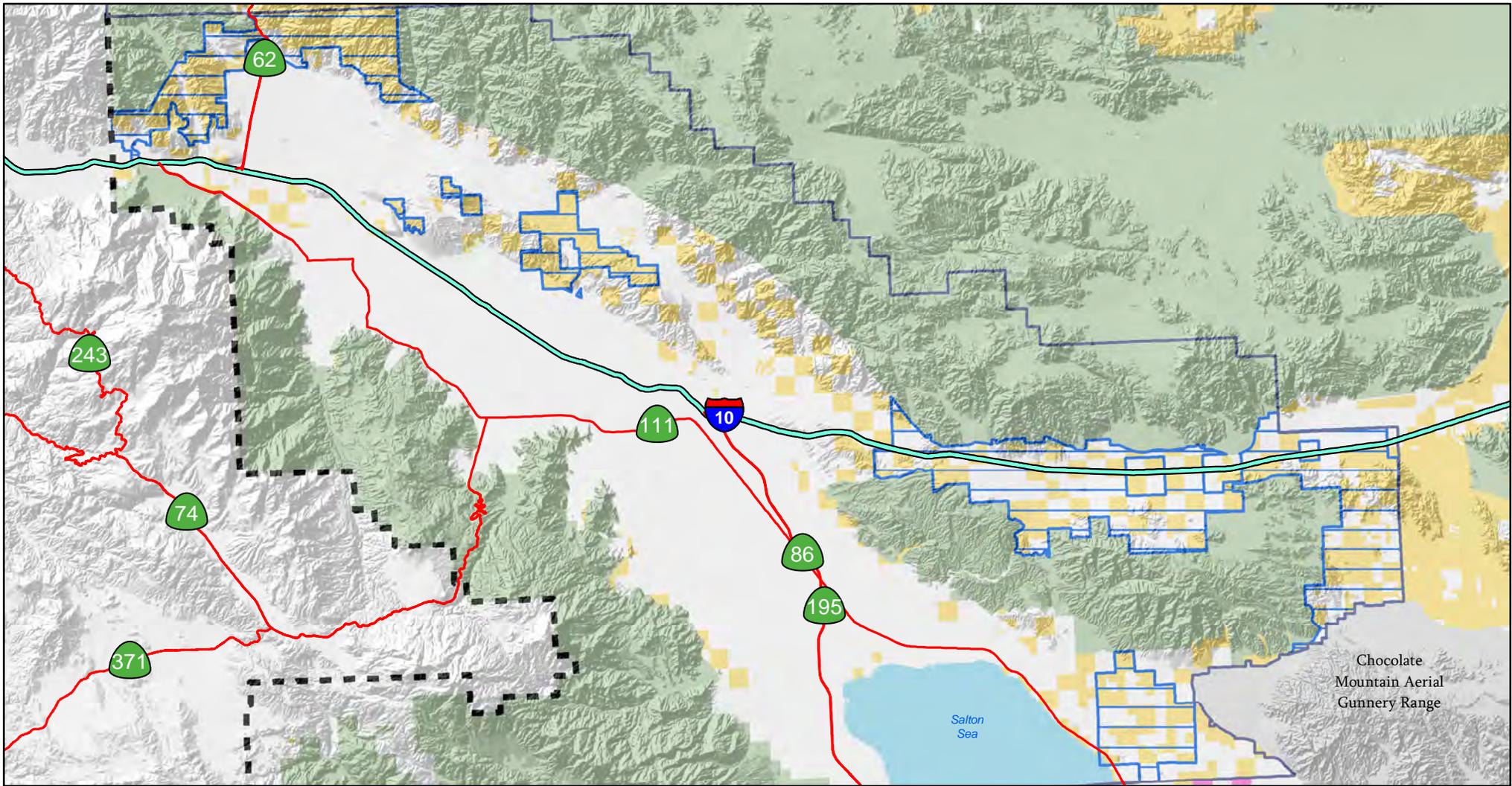
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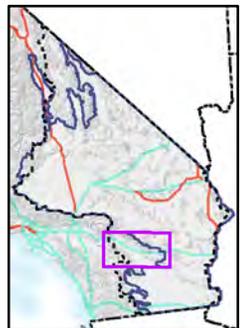
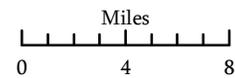
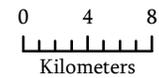


-  CDNCL Boundaries
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- Land Status**
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-  Department of Defense

Coachella Valley CDNCL

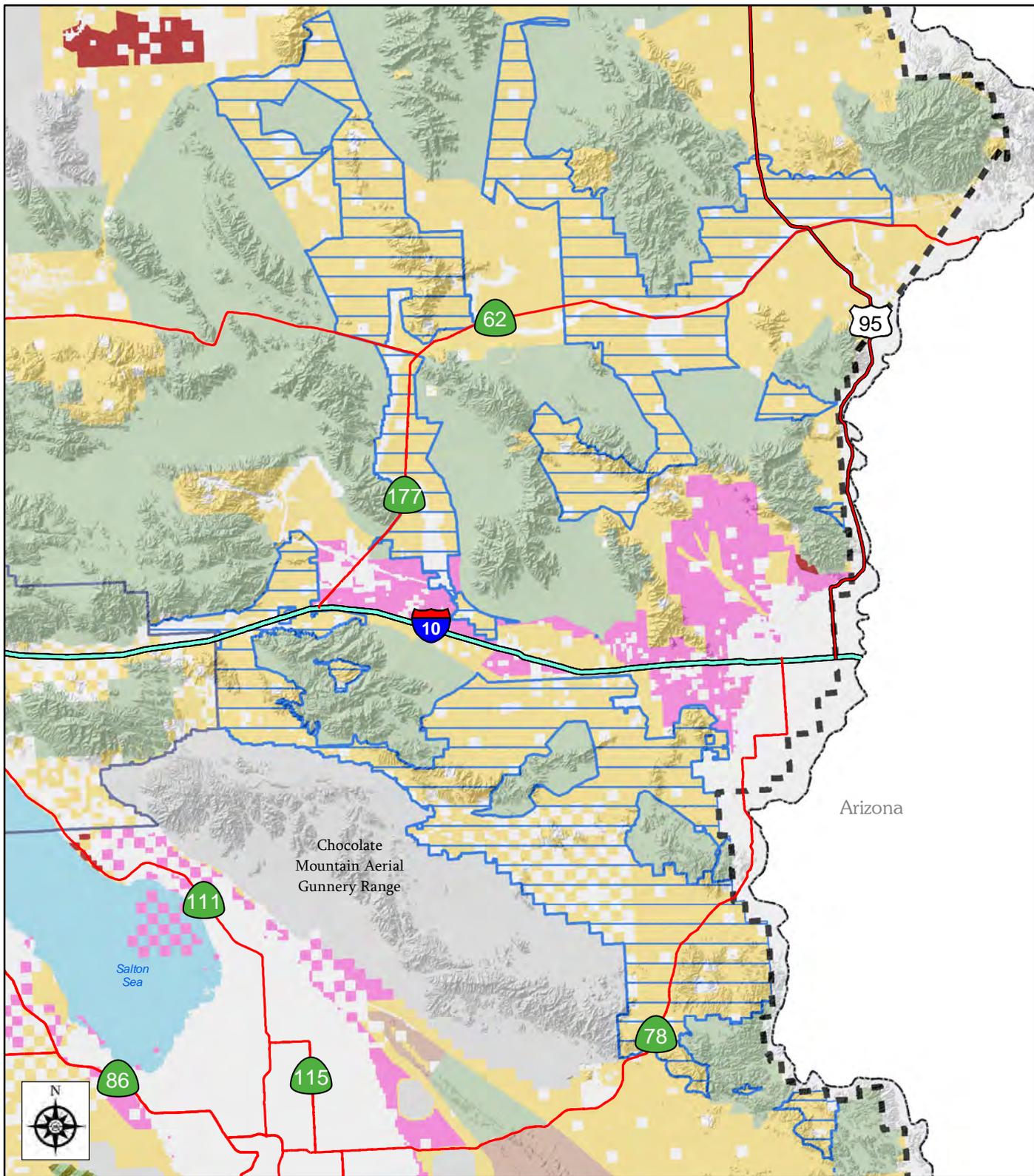
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Chocolate Mountain Aerial Gunnery Range

Salton Sea



CDNCL Boundaries

Renewable Footprint

- DFA
- VPL
- DRECP Boundary
- CDCA Boundary
- LLPA
- Open OHV Areas
- Imperial Sand Dunes Open OHV Area

Land Status

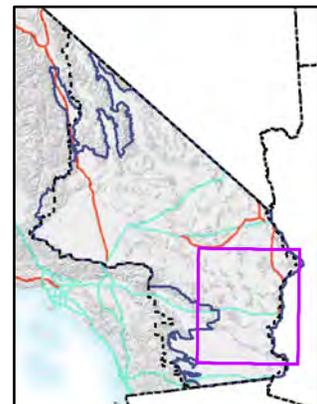
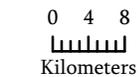
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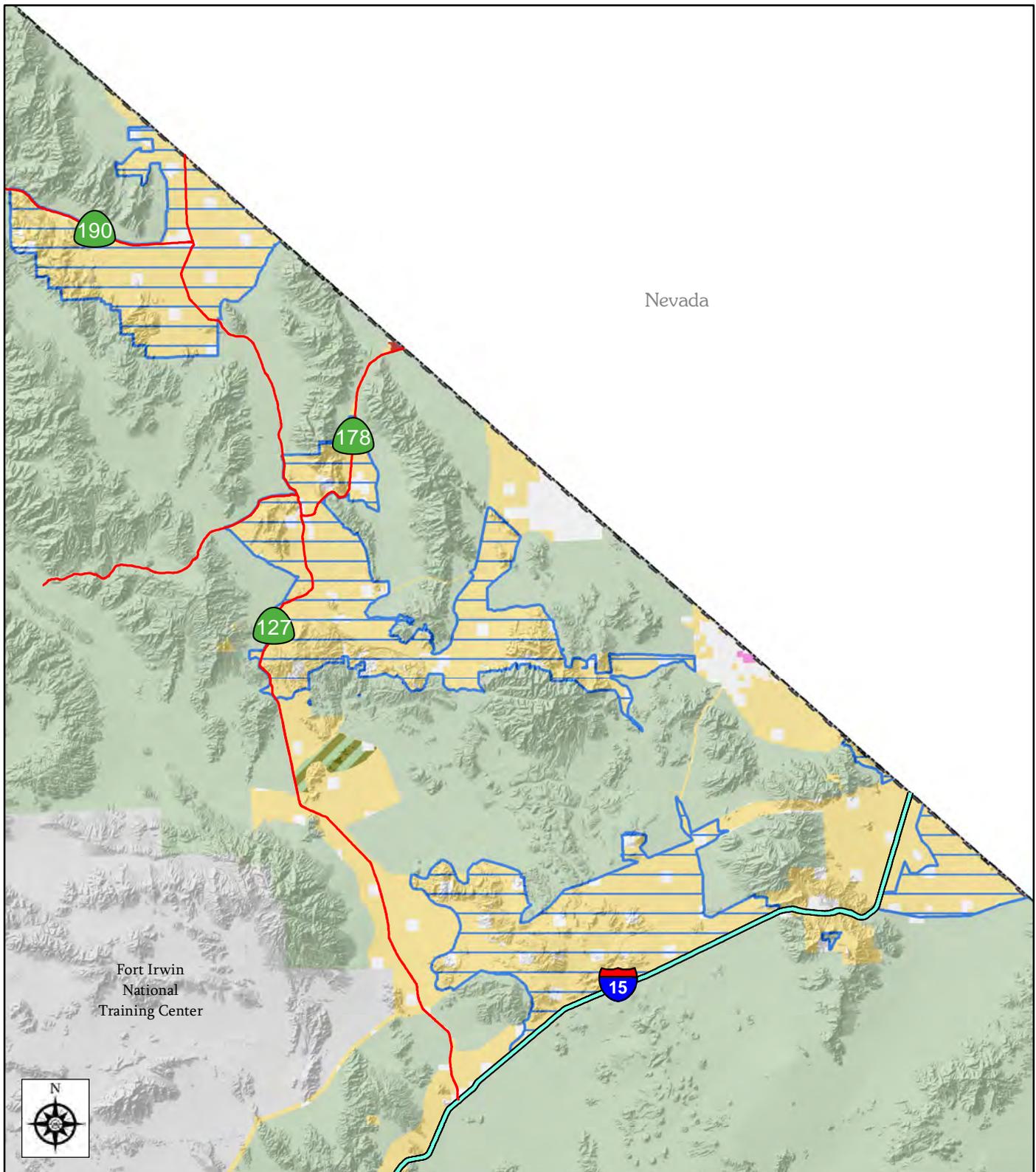
Colorado Desert CDNCL



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-  CDNCL Boundaries
- Renewable Footprint**
-  DFA
-  VPL
-  DRECP Boundary
-  CDCA Boundary
-  LLPA
-  Open OHV Areas
- Land Status**
-  Bureau of Land Management
-  Department of Defense

Kingston - Amargosa CDNCL



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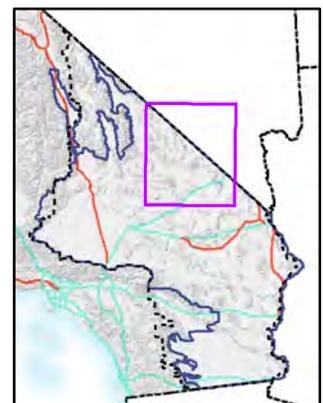
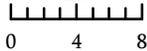
BLM California State Office

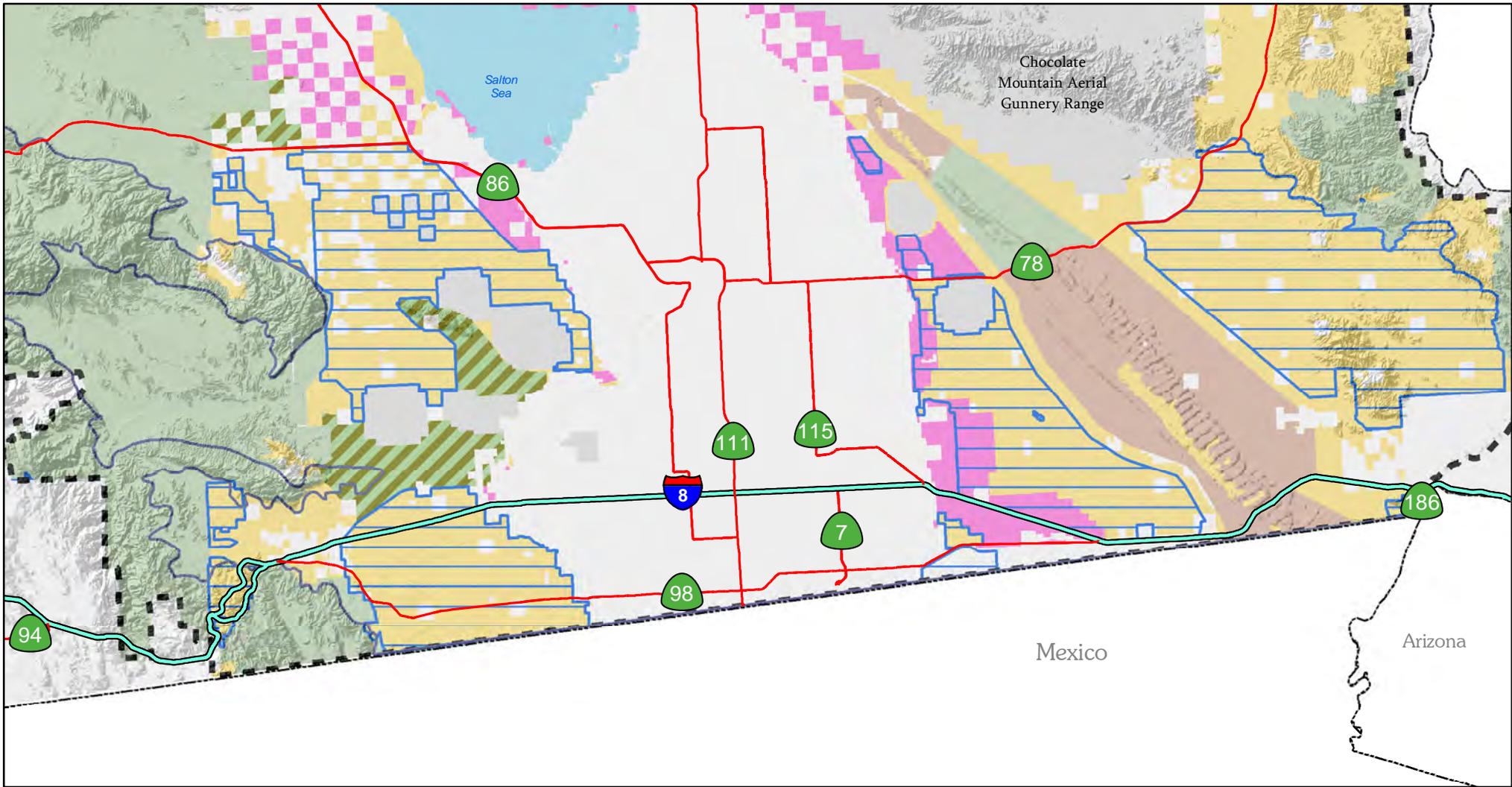


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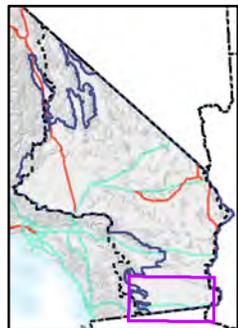
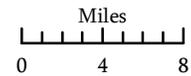
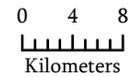


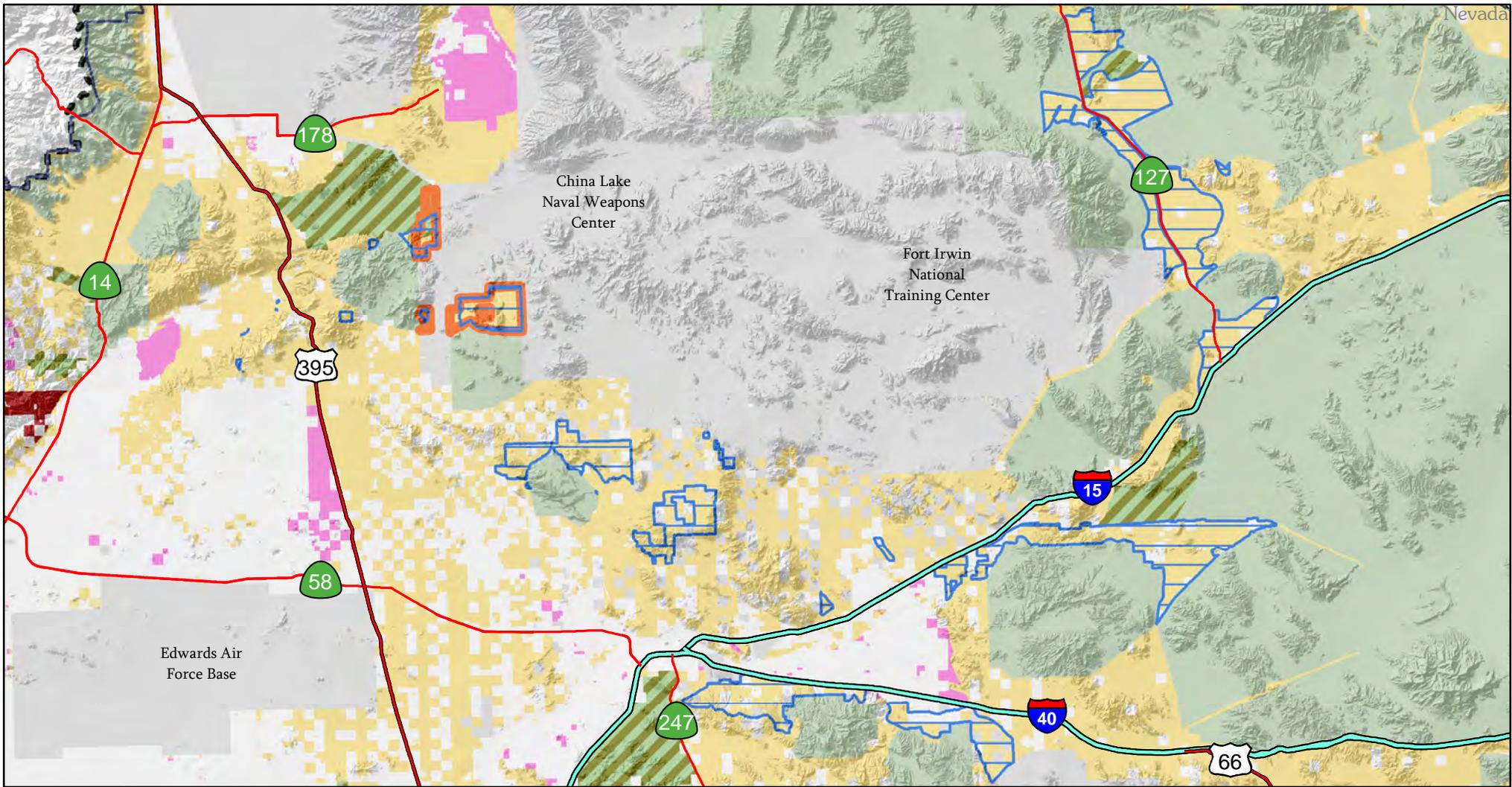
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-  LLPA
-  Open OHV Areas
-  Imperial Sand Dunes Open OHV Area
- Land Status**
-  Bureau of Land Management
-  Department of Defense

Lake Cahuilla CDNCL

7/26/2016

BLM California State Office



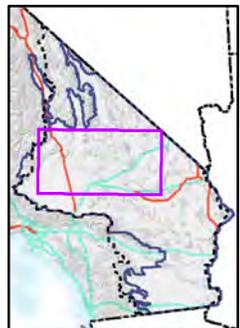
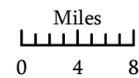
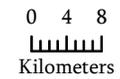


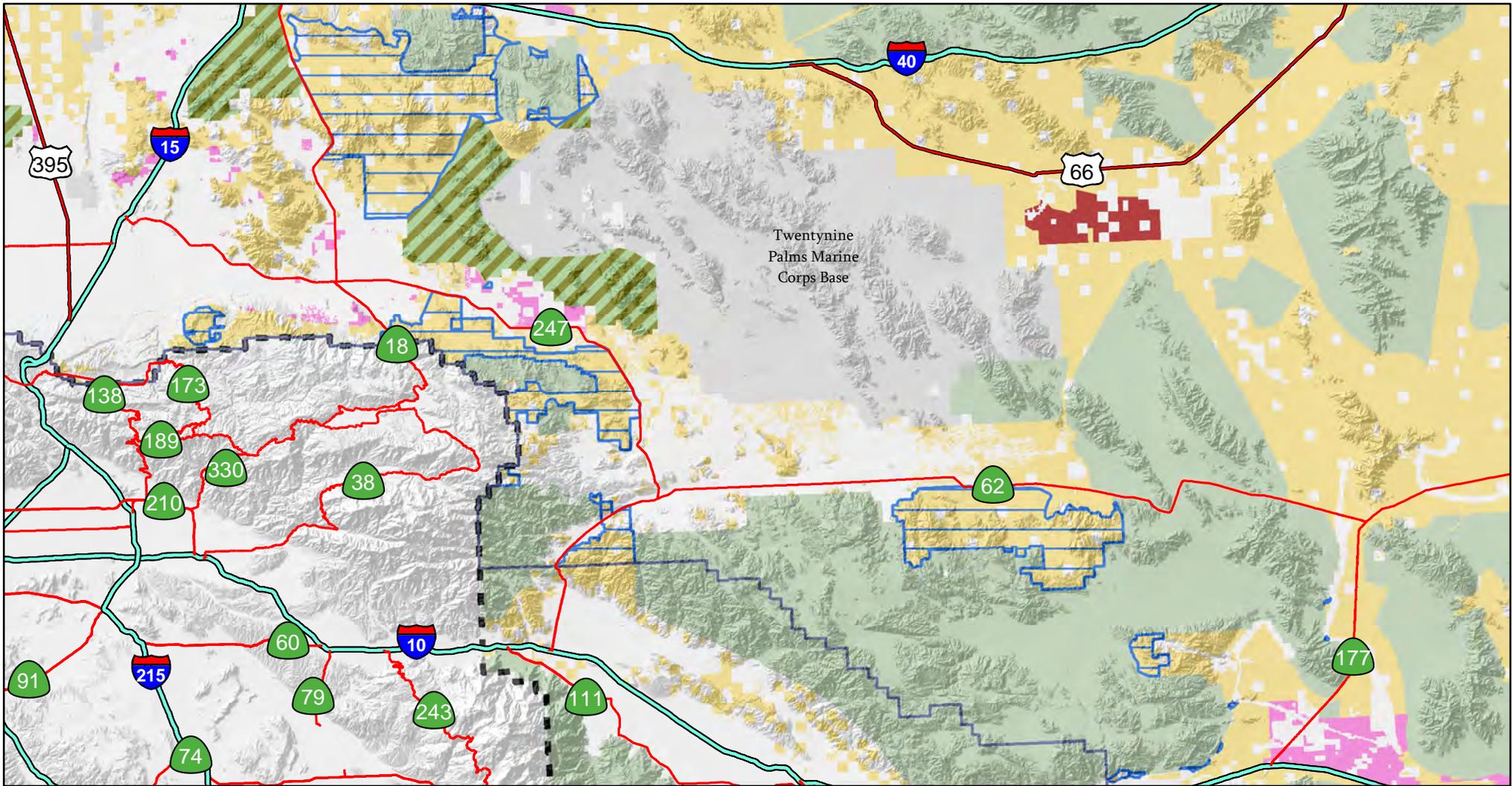
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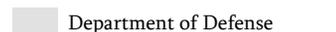
Mojave and Silurian Valley CDNCL

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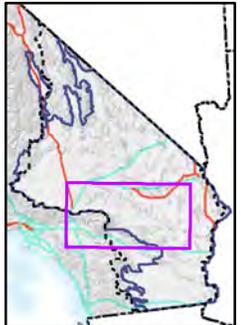
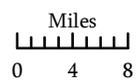
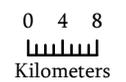


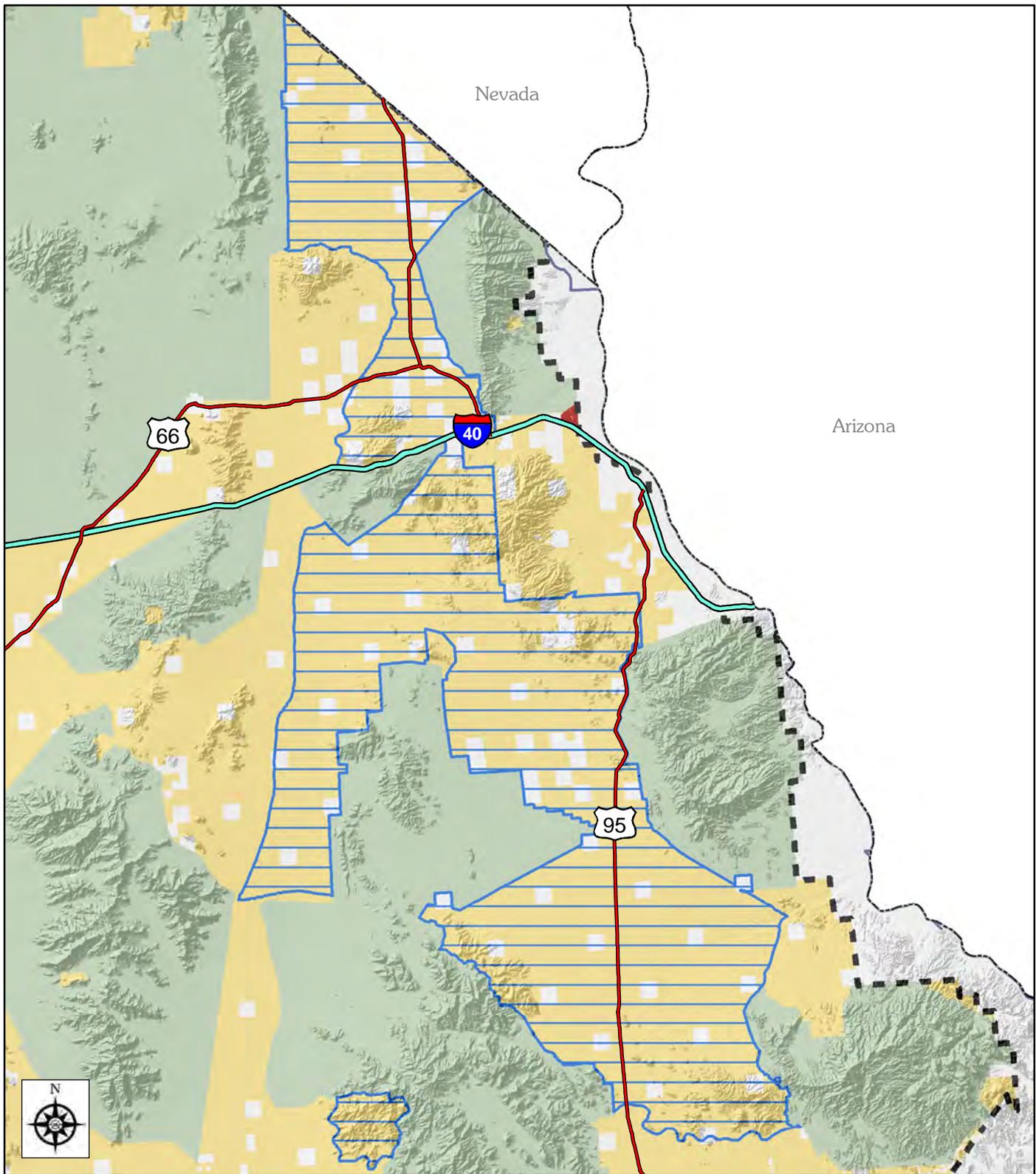
-  CDNCL Boundaries
-  DRECP Boundary
-  Renewable Footprint
-  CDCA Boundary
-  DFA
-  LLPA
-  VPL
-  Open OHV Areas
- Land Status**
-  Bureau of Land Management
-  Department of Defense

Pinto Lucerne Valley and Eastern Slopes CDNCL

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 CDNCL Boundaries

Renewable Footprint

 VPL

 DRECP Boundary

 CDCA Boundary

 LLPA

Land Status

 Bureau of Land Management

 Department of Defense

Piute Valley and Sacramento Mountains

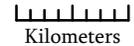
CDNCL

7/26/2016

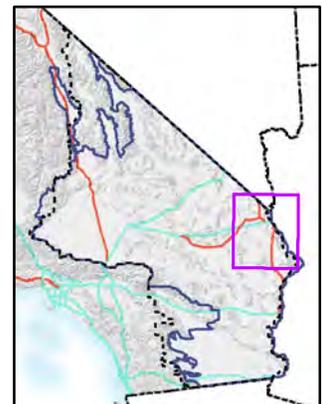
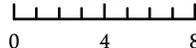
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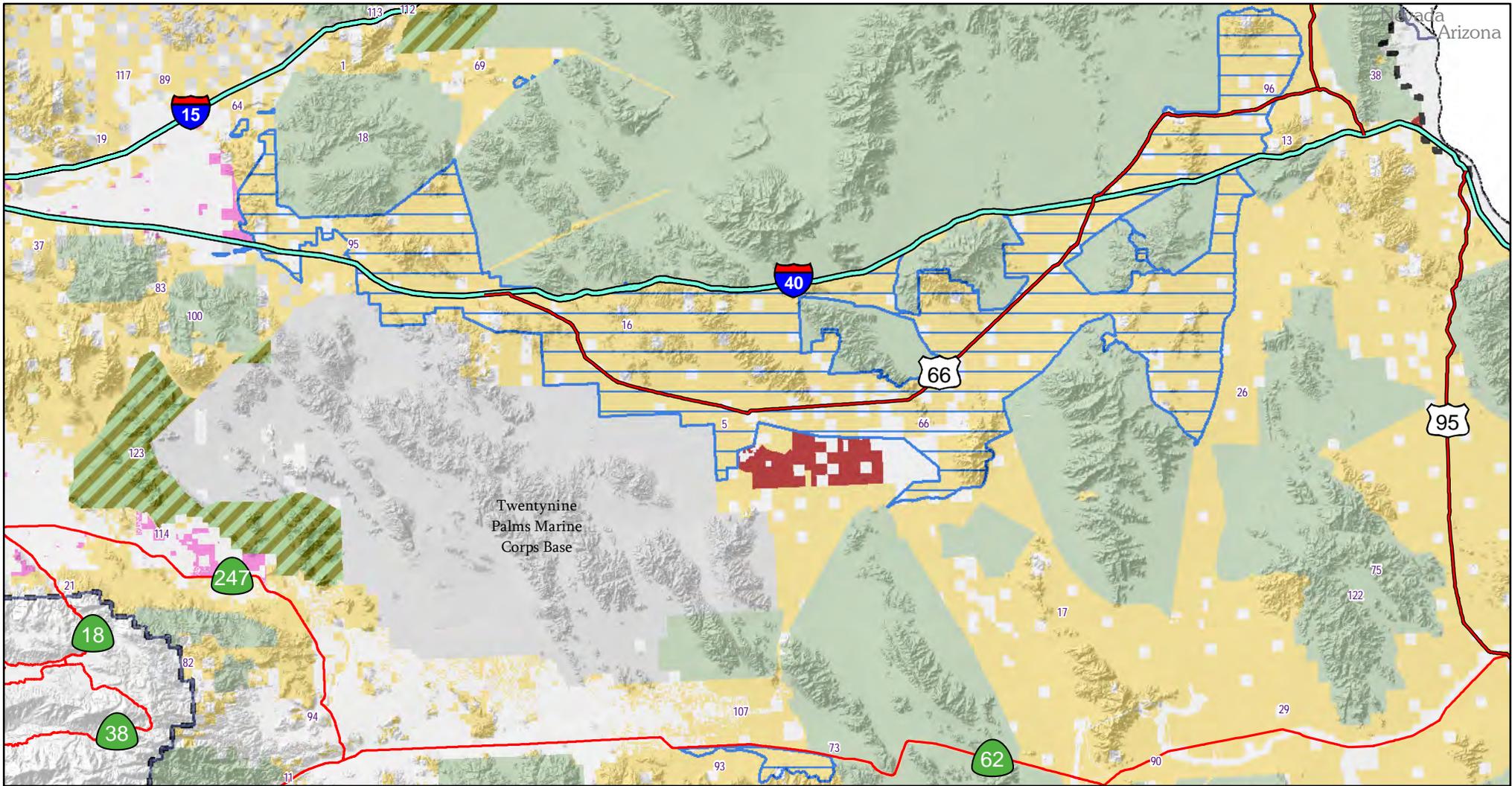


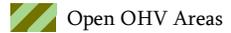
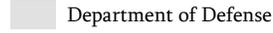
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Miles



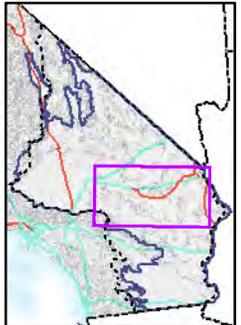
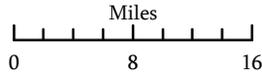
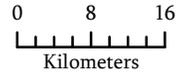


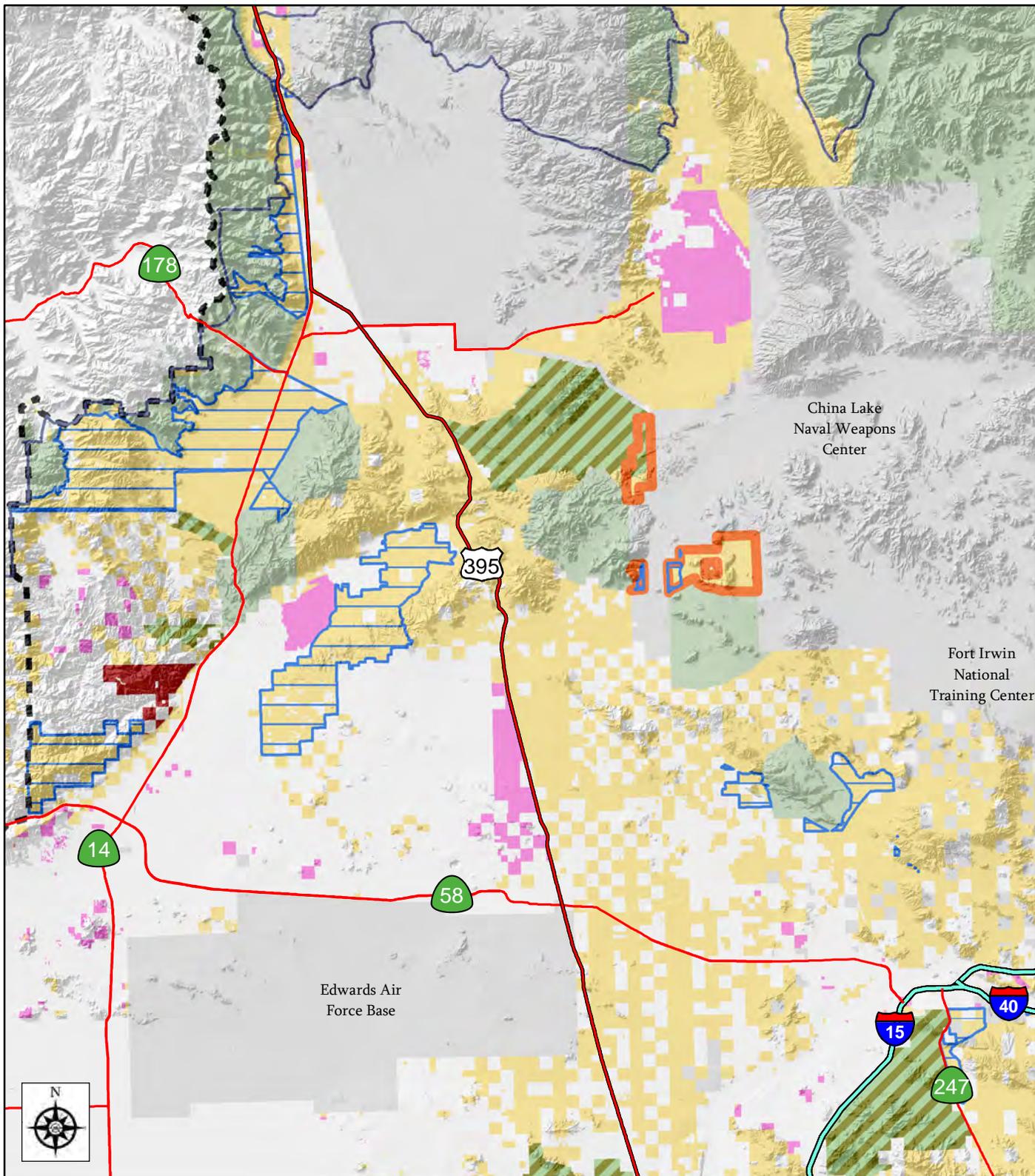
-  ACEC Boundaries
-  CDNCL Boundaries
- Renewable Footprint**
-  DFA
-  VPL
-  DRECP Boundary
-  CDCA Boundary
-  LLPA
-  Open OHV Areas
- Land Status**
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-  Department of Defense

South Mojave - Amboy CDNCL

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-  CDNCL Boundaries
-  NDAA China Lake Expansion
- Renewable Footprint**
-  DFA
-  VPL
-  DRECP Boundary
-  CDCA Boundary
-  LLPA
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-  Department of Defense

West Desert and Eastern Slopes CDNCL



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0 4 8

 Kilometers

0 4 8

 Miles

