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APPENDIX A-1

Metadata for the Preliminary Conservation Strategy Map

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APPENDIX A-1 – Metadata for the Preliminary Conservation Strategy Map

The following provides a description of each of the data layers used in the preparation of the Preliminary Conservation Strategy (PCS) map and supporting maps used in the PCS document. Each of these data layers has additional metadata, which is not provided here, that provides technical geographic information system (GIS) information on spatial details (e.g., coordinate system) and attributes.

Data Layer	Metadata Description
Desert Renewable Energy Conservation Plan (DRECP) Land Ownership Database	The land ownership and protected lands data set was derived from multiple data sources. The primary base layer was the GreenInfo Network's California Protected Areas Database (CPAD) version 1.5 dataset. Other data sources are listed below. For the most part, the base CPAD land owner classification was used as the standard for the land owner designation; a few changes were made based on other data. The land ownership boundaries were further broken up by management types, such as parks, recreation areas, wilderness areas, etc., and property names. Some revisions were also completed by exporting an Excel table with all of the values and a unique identifier, and then merging the table back into the GIS data. The data was also reviewed to remove slivers and other geographic anomalies and updated with version 1.6 of the CPAD. At the very end, the dataset was dissolved by landowner, property name, and management type to eliminate multiple polygons for a single property. **Base Layer:** GreenInfo Network, 6/2010, 1/2011 – CPAD Database versions 1.5 and 1.6 Version 1.5 was from the GIS databases provided by Dudek; version 1.6 was from http://calands.org. **Other Data Layers:** Wilderness areas: Wilderness_Areas_1.14.11.shp, 1/14/2001, Wilderness Institute (University of Montana) National Park Service, U.S. Border: PCTL05_1, California Resources Agency Legacy Project, 2005 U.S. Fish and Wildlife Service (USFWS): USFWS.shp, USFWS, 5/11/2009 California State Lands Commission: U.S. Border, Mid-Pacific Region, April 2001 California State Parks Management Boundaries: August 2011 Deep Canyon: Email from University of California, Riverside Bureau of Land Management (BLM) lands, including Areas of Critical Environmental Concern and Desert Wildlife Management Areas.
National Renewable Energy Laboratory (NREL) Solar Insolation	Based on NREL 2009 data for solar resources measured by direct normal solar insolation in kilowatt-hours per square meter per day (2009).
NREL 50-meter Wind Speed (m/s)	Annual average wind resource potential of California measured at a 50-meter-above-ground level in meters per second (2009). The purpose is to provide information on the wind resource development potential within

Data Layer	Metadata Description
	California.
	This data set was produced by TrueWind Solutions using their Mesomap system and historical weather data, under funding from the California Energy Commission. It has been validated by NREL and wind energy meteorological consultants. This shapefile was generated from a raster dataset with a 200 m resolution, in a Universal Transverse Mercator zone 11, datum World Geodetic System 84 projection system.
California Wind Energy Association (CALWEA) Priority Wind Resource Areas	In November 2010, CalWEA presented "Wind Resource Considerations for the DRECP Process" to the DRECP Resource Mapping Working Group. The presentation, prepared by Sapphos Environmental Inc., included mapping and acreage calculations for areas of potentially viable wind resource development areas within the Plan Area. The resource data used for the analysis were developed by AWS Truepower for NREL (2010) and differ from the available NREL data (2009).
	This analysis considered wind speeds of over 5 meters (16 feet) per second to be viable for purposes of utility-scale wind power development. On the unconstrained acreage, development constraints were layered, including physical constraints identified as "urban and built-out land," airports with 9,000-foot buffers, and "permitted and in-process solar thermal and solar photovoltaic" areas. In addition to these physical constraints, areas with "administrative constraints" were also added, including National Park Service managed lands, designated wilderness areas, military lands, National Wildlife Refuges, and California State Parks.
Center for Energy Efficiency and Renewable Technologies (CEERT) Solar Development Areas	CEERT and the Large Scale Solar Association submitted proposed areas for the development of solar energy in the Plan Area.
	CEERT's analysis identifies the chief characteristics of desirable solar resource lands, including: 1) above-average insolation, 2) level topography (under 5 degrees of slope), and 3) proximity to transmission (existing or planned high-voltage lines and substations). The map provided by CEERT identifies approximately 2 million acres for solar energy development within the Plan Area. The majority of this acreage occurs within the area identified as the West Mojave highlands surrounding Edwards Air Force Base, primarily due to qualitatively higher insolation, flatter topography, and proximity to power demand centers and existing high-voltage transmission lines. In addition, other areas appropriate for development were identified in the Lucerne Valley, West Chocolate Mountains, Southern Imperial Valley, and eastern Riverside. The following list summarizes the considerations and data sources used in developing criteria for CEERT mapping: • **Solar Insolation**: The CEERT proposal is based on NREL data that have also been used in the Renewable Energy Transmission Initiative (RETI) planning process. However, CEERT notes that project developers have found discrepancies between satellite and on-the-ground insolation as high as 30%, and indicates that to the extent funding is available, better insolation data should be developed. • **Conservation Reserves**: In identifying conservation reserves, the CEERT analysis excluded those areas identified by RETI as Category I lands (i.e., areas considered excluded from renewable energy development by RETI). Some specific project sites with "high environmental concerns" were included to allow flexibility as the sites are refined through the planning process.

Data Layer	Metadata Description
	• **Transmission Constraints**: Transmission was included as a constraint due to the length of the planning horizon for transmission projects and because lack of transmission capacity represents a major constraint to project planning.
Known Geothermal Resource Areas	California Department of Conservation Division of Oil, Gas, and Geothermal Resources data on Known Geothermal Resource Areas.
BLM Geothermal Lease Areas	Lands, including National System of Public Lands, state, and private lands, identified by BLM that are or will be considered for inclusion in a National Environmental Policy Act document to determine if lands open to geothermal leasing should be leased under 43 CFR 3200. These lands may include pending geothermal lease applications filed with BLM before the enactment of the Energy Policy Act of 2005 (Public Law 109-58). The lands may also include nominations, under 43 CFR 3203.10, by industry for lands requested for competitive geothermal leasing.
USFWS Designated Critical Habitat	These data identify, in general, the areas where final critical habitat exists for species listed as endangered or threatened.
	Designated Critical Habitat includes areas considered essential for the conservation of federally listed species. These areas provide notice to the public and land managers of the importance of these areas to the conservation of this species. Special protections and/or restrictions are possible in areas where federal funding, permits, licenses, authorizations, or actions occur or are required.
DRECP Initial Land Cover	The DRECP initial land cover dataset is a 100-meter composite layer developed by combining California Gap Vegetation (U.S. Geological Survey (USGS) GAP Program, Lennartz et al. 2008) with California Farmland Mapping and Monitoring Program (FMMP) data (California Department of Conservation 2009) and the results of the rural lands model to identify land use changes associated with agriculture and rural land uses. A full description of the classification system, vegetation types, and other land cover types used for the initial land cover map was provided in the DRECP Framework Conservation Strategy Report (May 2011). Mapping according to Lennartz et al. 2008 unless updated with FMMP or rural lands model results.
	FMMP categories used for the initial land cover map included Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance. These areas are primarily used for the production of annual crops. Agricultural plant cover is variable, depending on season and type of farming. Other areas include more stable land cover of orchards and vineyards.
	Rural: A rural land cover type was developed for the DRECP based on a rural lands model. Rural land uses occur on private lands and have road access. To identify areas with rural land uses, the roads data (ESRI 2010), which is a linear data format at 1:15,000 scale, was used to create polygons, where larger polygons bounded by roads were considered less rural and smaller polygons were considered more rural. The road polygons were then classified into even size classes (e.g., 0 to 100 acres, 101 to 200 acres), and displayed as a GIS overlay on the current aerial imagery of the Plan Area. Review and inspection of the pattern and correspondence of polygon size to evidence of rural land use on aerial images indicated that most rural land uses occur where the road polygons were 500 acres or smaller in size.

Data Layer	Metadata Description
	Therefore, the areas of 500 acres or smaller, road-bounded polygons that occur on private land, were classified as Rural. These modeled rural lands were incorporated into the DRECP land cover data layer to replace natural land cover, but were not incorporated if the land cover was mapped as farmland, urban, or disturbed from the FMMP data source. Areas with higher-density rural roads that divide the landscape into areas of 500 acres or less; include rural residential lands and semi-agricultural and rural commercial lands such as farmsteads, agricultural storage and packing sheds, unpaved parking areas, composting facilities, equine facilities, firewood lots, and campgrounds.
Condor Study Area	The Condor Study Area is the area that has been identified by the Renewable Energy Action Team (REAT) agencies on the California Condor Wind Energy Working Group for further study when seeking to address current and future impacts of wind development upon the species. This mapped area does not denote a proposed reserve for the California condor. Instead, it identifies portions of the Plan Area where potential effects on the California condor will be considered when identifying development and reserve areas in the DRECP. Recommendations to the USFWS Regional Director from the California Condor Wind Energy Working Group will facilitate development of the DRECP conservation strategy within the Condor Study Area.
Renewable Energy Study Areas (RESAs)	RESAs are generalized areas developed for the DRECP PCS (October 2011) within which it is anticipated that renewable energy development would result in fewer conflicts with biological resources. As with the Moderate to High Biological Value Areas, refinements to these mapped areas (i.e., additions and deletions) will likely occur as additional data becomes available and the biological goals and objectives are developed. The RESAs were developed with consideration of the renewable energy resource information summarized in DRECP PCS Section 4.1 (Renewable Energy Resource Data) and based on the REAT criteria and evaluation as summarized in DRECP PCS Section 4.3.
Composite Moderate to High Biological Value Areas	The composite layer of all 19 biological elements used to identify Moderate to High Biological Value Areas for the DRECP PCS (October 2011). These elements include: East Riverside Linkage Areas, Significant Ecological Areas, West Mojave Areas of Important Natural Communities and Processes, Microphyll woodland communities, Dunes, Riparian, Playas, Washes, Alkali Mariposa lily, Bald eagle, Barefoot banded gecko, Barstow woolly sunflower, Bighorn sheep, Carbonate plants, Desert tortoise, Flat-tailed horned lizard, Lane Mountain milk-vetch, Mohave ground squirrel, Mojave fringe-toed lizard, Mojave monkeyflower, and Southwestern willow flycatcher.
PCS Map Seamless Layer	A single layer representing the nine DRECP PCS Map categories (October 2011). Legally and Legislatively Protected Areas, which include the DRECP land ownership categories of: State and Federal Wilderness Areas: • National Parks • National Preserves • National Wildlife Refuges • Wild and Scenic Rivers • California State Parks

Data Layer	Metadata Description
	• California Department of Fish and Game (CDFG) Conservation Areas (Ecological Reserves and Wildlife Areas) • CDFG mitigation and conservation easements • Privately held conservation areas (including mitigation banks and land-trust-protected areas) • State-chartered conservancy lands • Proposed Wilderness and Wilderness Study Areas. California State Lands Commission lands within the boundaries of these land units have been removed from this category. Private land in holdings within these land units have not been removed from this category. Other managed and designated areas, which include the USFWS Critical Habitat and DRECP land ownership categories of: • BLM Areas of Critical Environmental Concern (ACECs) • BLM Desert Wildlife Management Areas (DWMAs) • BLM Management Areas • USFWS Designated Critical Habitat. Private lands (based on the DRECP land ownership map) have been removed from this map category. **Moderate to High Biological Value Areas:** The composite distribution of Moderate to High Biological Value Areas is based on existing data available for a select set of biological resources and ecological processes, such as species occurrence data, modeled habitat distributions, and important landscape linkages and wildlife corridors, as described in the DRECP PCS (October 2011). This category does not incorporate land ownership. **Lower Biological Value Areas:** Areas not identified as having moderate to high biological value and that do not occur within the other map categories due to a lack of data or because the species, vegetation community, or ecological processes to be covered in the DRECP were not considered for these areas in this preliminary effort, as described in the DRECP PCS (October 2011). This category does not incorporate land ownership. **Agriculture:** Existing mapped agricultural lands based on FMMP and California GAP data for cultivated croplands. This category does not incorporate land ownership. **Developed Lands/Existing Impermeable Cover:** Existing mapped developed lands. This category does not incorporate land ownership. **Military Lands:** Department of Defense lands. **Off-Highway Vehicle Areas and State Vehicle Recreation Areas**: include: • BLM Off-Highway Vehicle (OHV) Areas • State Vehicle Recreation Areas.
Wildlands Conservancy Desert	The Wildlands Conservancy Desert Acquisitions (www.wildlandsconservancy.org/projects_cal.html) layer is a mosaic of eight shapefiles that were acquired from Kristeen Penrod (Conservation Director, Science & Collaboration for

Data Layer	Metadata Description
Acquisitions	Connected Wildlands, www.scwildlands.org), representing the various land acquisition phases. These were compiled into a single feature class and a description file added to identify the original shapefile. Also maps Army-owned former Catellus lands in the Mojave Desert.
	Purpose is for mapping, analysis, and conservation planning.
	From the The Wildlands Conservancy (TWC) website:
	"In July 1999, The Wildlands Conservancy acquired an option on 437,000 acres by negotiating an $18 million discount with the parent company of SF Pacific Properties, Catellus Development Corporation. Thanks to the support of TWC donors, the U.S. Department of the Interior acquired 405,206 acres with $30 million in private monies gifted by TWC and TWC's Wildlands Endowment Fund (WEF), and $15 million in Land and Water Conservation Fund (LWCF) monies. In 2002–2003, TWC and WEF funded the acquisition of an additional 155,583 acres of Catellus land. In 2004, TWC funded the remaining 7,103 acres of Catellus lands. TWC purchased and donated an additional 20,000 acres of Catellus lands located throughout the desert to the National Park Service and Bureau of Land Management."
Chuckwalla-Palen Linkage	Mapping of important linkage areas between existing protected, designated, and managed areas in the eastern Riverside County area. This is considered a landscape/ecological process element.
	This area was digitized for the DRECP by the Interagency Technical Team. This team consisted of biologists from CDFG, BLM, USFWS, and the California Energy Commission, at a minimum. Biological areas of uniqueness or of special importance to sensitive species and/or areas considered important for corridor linkages were digitized throughout the process. This dataset represents one of those.
Northeast Riverside DWMA Linkage	Mapping of important linkage areas between existing protected, designated, and managed areas in the eastern Riverside County area. This is considered a landscape/ecological process element.
	This area was digitized for the DRECP by the Interagency Technical Team. This team consisted of biologists from CDFG, BLM, USFWS, and the California Energy Commission, at a minimum. Biological areas of uniqueness or of special importance to sensitive species and/or areas considered important for corridor linkages were digitized throughout the process. This dataset represents one of those.
Pinto Basin-Chuckwalla DWMA Linkage	Mapping of important linkage areas between existing protected, designated, and managed areas in the eastern Riverside County area. This is considered a landscape/ecological process element.
	This area was digitized for the DRECP by the Interagency Technical Team. This team consisted of biologists from CDFG, BLM, USFWS, and the California Energy Commission, at a minimum. Biological areas of uniqueness or of special importance to sensitive species and/or areas considered important for corridor linkages were digitized throughout the process. This dataset represents one of those.

Data Layer	Metadata Description
Microphyll/Dune/ Desert Tortoise Eastern Riverside Areas	Mapping of important linkage areas between existing protected, designated, and managed areas in the eastern Riverside County area. This is considered a landscape/ecological process element.
	This area was digitized for the DRECP by the Interagency Technical Team. This team consisted of biologists from CDFG, BLM, USFWS, and the California Energy Commission, at a minimum. Biological areas of uniqueness or of special importance to sensitive species and/or areas considered important for corridor linkages were digitized throughout the process. This dataset represents one of those.
	Purpose is to identify and link unique ecological communities of Microphyll woodlands, sand dunes, and sand transport in the Riverside Solar Energy Zone area (BLM), which will also connect USFWS-designated areas for recovery of the desert tortoise. See USFWS Desert Tortoise Recovery Plan (2011).
Los Angeles County Significant Ecological Areas	Important landscape features in the Los Angeles County region; include washes, Joshua tree woodlands, and important landforms. This is considered a landscape/ecological process element.
	"Significant Ecological Area" means an area that is determined to possess an example of biotic resources that cumulatively represent biological diversity, for the purposes of protecting biotic diversity, as part of the Los Angeles County General Plan or the city's general plan.
	Purpose is to identify areas with Significant Ecological Importance, a designation that was adopted with the 1980 General Plan.
	Additional regulations shall be applied based on County Code 22.56.215: Hillside Management and Significant Ecological Areas. Please see online ordinance (http://ordlink.com/codes/lacounty/_DATA/TITLE22/Chapter_22_56_CONDITIONAL_USE_.html#24).
Rosamond- Tehachapi Ecological Corridor	Todd Keeler-Wolf (CDFG) mapping of areas important for transition zones and landscape connectivity of natural communities in the West Mojave. This is considered a landscape/ecological process element.
	This area connects the southern Tehachapi foothills across a broad fan and wash system to the lowland alkaline basin running east to Edwards Air Force Base and Rosamond Dry Lake.
North Rosamond – Tehachapi Gradient	Todd Keeler-Wolf (CDFG) mapping of areas important for transition zones and landscape connectivity of natural communities in the West Mojave. This is considered a landscape/ecological process element.
	This area connects the ecological gradient of western creosote bush stands to the Western Mojave region south of the town of Mojave and north of Edwards Air Force Base where there is a strong moisture gradient and a variety of landforms and soils that would represent varying and possibly shifting vegetation over time.
West–Central Antelope Valley Joshua Tree-	Todd Keeler-Wolf (CDFG) mapping of areas important for transition zones and landscape connectivity of natural communities in the West Mojave. This is considered a landscape/ecological process element.

Data Layer	Metadata Description
Wildflower Area	This area connects the southern Tehachapi fans with the north Liebre Mountain foothills through Los Angeles County Significant Ecological Areas identified for Joshua trees and also includes other known wildflower fields.
Central Antelope Valley Joshua Tree-Poppy Area	Todd Keeler-Wolf (CDFG) mapping of areas important for transition zones and landscape connectivity of natural communities in the West Mojave. This is considered a landscape/ecological process element. This area is adjacent to the California Poppy Reserve and other reliable poppy fields, and includes Joshua tree areas from Los Angeles County Significant Ecological Areas; connects with the Rosamond-Tehachapi corridor to provide connectivity with alkali basins north of Lancaster and west of Edwards Air Force Base.
West Antelope Woodland and Grassland Area	Todd Keeler-Wolf (CDFG) mapping of areas important for transition zones and landscape connectivity of natural communities in the West Mojave. This is considered a landscape/ecological process element. This area provides linkage and north–south gradient across far western Antelope Valley to the oak and pine woodlands from the Tejon area through some grassland–herbland communities with high native species component.
West Mojave Transition Areas	Todd Keeler-Wolf (CDFG) mapping of areas important for transition zones and landscape connectivity of natural communities in the West Mojave. This is considered a landscape/ecological process element. Important areas of elevation gradients abutting the desert floor in the West Mojave.
Unique Plant Community Areas and Areas of Importance for Various Plant Species in the West Mojave	Todd Keeler-Wolf (CDFG) mapping of areas important for transition zones and landscape connectivity of natural communities in the West Mojave. This is considered a landscape/ecological process element. Areas of unique plant groupings identified during the ongoing vegetation mapping work in the West Mojave.
Areas of Known Microphyll Woodland Communities	Vegetation community mapping not complete and based on an example management area for microphyll woodland and Burro deer issues; Audubon Important Bird Area also co-occurs. This is considered vegetation community element.
Named Dune Areas	BLM mapped dune areas. This is considered a vegetation community element. BLM mapping for the West Mojave Plan of: Partially Stabilized Desert Dunes, Stabilized and Partially Stabilized Dunes, Stabilized Desert Dunes. BLM Closed Dunes and Playas: Cadiz Dunes, Desert Lily Preserve, Ford Dunes, Palen Dunes, and Rice Valley Dunes.
Playas and Washes Areas; Riparian Areas	Merge of BLM mapping, buffered major rivers, California Natural Diversity Database (CNDDB) vegetation, California GAP 2008 data, and National Wetland Inventory. This is considered a vegetation community element.

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Data Layer	Metadata Description
	The riparian component includes:
	BLM mapping for the West Mojave Plan of: Cottonwood-Willow Riparian Forest, Desert Fan Palm Oasis Woodland, Freshwater Seep, Mojave Riparian Forest, and Montane Riparian Scrub.
	Buffered major rivers include: Mojave River, West Fork Mojave River, Alamo River, New River, Whitewater River, Colorado River, Owens River, and Amargosa River.
	CNDDB mapping of: Desert Fan Palm Oasis Woodland, Mojave Riparian Forest, Sonoran Cottonwood-Willow Riparian Forest, Southern Cottonwood-Willow Riparian Forest, Southern Riparian Scrub, Southern Sycamore Alder Riparian Woodland, Water Birch Riparian Scrub, and Salt Creek.
	The playas and washes component includes:
	Central Mojave vegetation mapping of: High-Elevation Wash System, Low-Elevation Wash System, Mid-Elevation Wash System, and Playa.
	CNDDB mapping of: Mesquite bosque.
	BLM mapping for the West Mojave Plan of: Desert Wash Scrub, Mesquite Bosque, and Playa.
	BLM mapping for the Northern and Eastern Colorado Desert Plan of: Palen Dry Lake and Ford Dry Lake.
	California lakes data: selected for dry lakes.
Alkali Mariposa Lily Conservation Area	Mapping of BLM conservation areas and known occurrences for the West Mojave Plan. This is considered a narrow range species element.
	Conservation Areas for alkali Mariposa lily (final, used in final environmental impact statement (FEIS)), West Mojave Plan.
Bald Eagle Water Features	Mapping of rivers, lakes, and reservoirs with the potential to support the species, buffered 1-mile. This is considered an umbrella species element.
	This dataset is based on California lake, reservoir, and pond layers as assembled by CDFG. It includes many small and unnamed waterbodies in the High Sierra and California Cascades, some of which are not depicted on USGS 7.5-minute/1:24,000-scale topographic maps. Most data were captured at 1:24,000-scale or better. Waterbodies are represented as single polygons (with islands), with latitude/longitude coordinates of waterbody centroids and a unique numeric identifier for each. Waterbody polygons represent shorelines generally at full or near-full levels. A previous version of this dataset did not contain islands.
	Waterbodies selected include: South Haiwee Reservoir, North Haiwee Reservoir, Tinemaha Reservoir, Silverwood Lake, and the Colorado River.
Barefoot Banded Gecko Occupied Habitat	Mapping based on project-level survey data. This is considered a narrow range species element.
	This area was digitized for the DRECP by the Interagency Technical Team. This team consisted of biologists from CDFG, BLM, USFWS, and the California Energy Commission, at a minimum. Biological areas of uniqueness or of special importance to sensitive species and/or areas considered important for corridor linkages were digitized throughout the process. This

Data Layer	Metadata Description
	dataset represents one of those.
	Purpose is to identify areas of known occupancy of the Barefoot-banded gecko within and immediately adjacent to the DRECP boundary, as identified from the Sunrise Powerlink 2081 permit in Imperial–San Diego Counties.
Barstow Woolly Sunflower Conservation Area	Mapping of BLM conservation areas and known occurrences for the West Mojave Plan. This is considered a narrow range species element.
	Barstow Wooly Sunflower Conservation Area, West Mojave Plan (used in draft environmental impact statement (DEIS) and FEIS).
Bighorn Sheep Mountain Habitat	Represents suitable mountain habitat for bighorn sheep based on CDFG unpublished data 2011.
Bighorn Sheep Intermountain Habitat	Represents intermountain habitat for bighorn sheep based on California Department of Fish and Game unpublished data 2011.
Bighorn Sheep Critical Linkage Areas	Represents critical linkage areas for bighorn sheep based on CDFG unpublished data 2011.
Carbonate Plant Habitat Areas	Mapping of occupied, suitable, and beneficial habitats per the Carbonate Habitat Management Strategy. This is considered a narrow range species element.
	Includes the habitat areas identified in the Carbonate Habitat Management Strategy and the BLM portion of these areas as identified in the BLM West Mojave Plan.
Highest-Value Contiguous Desert Tortoise Habitat	USFWS models based on USGS 2009 model. This is considered an umbrella species element.
	Identifies areas within the Mojave Desert that USFWS considers necessary for the reserve design in the DRECP. Method for creation: The layer is derived using four layers produced by the Desert Tortoise Recovery Office. These base layers were then processed using various tools in Arc Toolbox to arrive at the final layer. The following provides a brief description of each layer.
	"contigHab_imp_HC": The output of this model depicts the areas of contiguous, highest - value habitat for the Mojave desert tortoise. The areas of highest value are those of highest habitat potential (as modeled in Nussear et al. 2009) that are adjacent to other areas of highest habitat potential. Nussear et al. (2009) developed a model of habitat suitability for the tortoise using presence data and 16 environmental variables to predict potential areas of desert tortoise habitat throughout its geographic range at a 1 km2 scale. Their analysis did not account for anthropogenic changes that may have altered habitat with relatively high potential, turning them into areas with lower potential. We therefore utilized 1) the National Landcover Dataset impervious surfaces layer and 2) The Nature Conservancy's "highly converted areas" (TNC Mojave Ecoregional Assessment 2010; TNC Sonoran Ecoregional Assessment 2009) to change heavily developed areas where tortoises cannot occur to zero habitat potential. The highly converted layer depicts urban, suburban, and agricultural lands that have been heavily altered. Our model first finds areas with a 1.0 habitat potential probability, then iteratively adds adjacent areas with a lower potential starting with 0.9 down to 0.6. The output consists of all areas down to 0.6 that can be reached from any 1.0 area,

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Data Layer	Metadata Description
	with no unconnected "habitat islands."
	habitatCorr_dvaly; "CorridorExtent"**:** The output of this model depicts the regions, or "corridors," of least cost for Mojave Desert tortoises between existing tortoise conservation areas (TCAs) as depicted in the Revised Recovery Plan for the Desert Tortoise (USFWS 2011, Figure 2). The least-cost corridor for a tortoise is the region of highest habitat potential (as modeled by Nussear et al. 2009) with the least accumulated "cost" to travel between the TCAs. Nussear et al. (2009) developed a model of habitat suitability for the Mojave Desert tortoise using presence data and 16 environmental variables to predict potential areas of desert tortoise habitat throughout its geographic range at a 1 km2 scale. Their analysis did not account for anthropogenic changes that may have altered habitat with relatively high potential, turning them into areas with lower potential. We therefore utilized The Nature Conservancy's "highly converted areas" (TNC Mojave Ecoregional Assessment 2010; TNC Sonoran Ecoregional Assessment 2009) to change heavily developed areas where tortoises cannot occur to zero habitat potential. The highly converted layer depicts urban, suburban, and agricultural lands that have been heavily altered. Our model estimates the least cost corridors between existing tortoise conservation areas (as defined in USFWS 2011). We calculated the least-cost corridors between these conservation areas based on pairs that were closest to one another. This resulted in 17 pairs, which corresponded to the main routes identified by Hagerty et al. (2010). The least-cost corridors for each of these 17 pairs was calculated as the accumulated cost associated with moving from cell to cell, given that higher habitat potential is assumed to have a lower cost. The least-cost corridor may not necessarily be the shortest physical distance between the two conservation areas. The output consists of the top 1% of suitable areas between each TCA pair.
	Contiguous B; "contigAll_poly": The output of this model depicts the areas of contiguous, highest-value habitat for the Mojave Desert tortoise. The areas of highest value are those of highest habitat potential (as modeled in Nussear et al. 2009) that are adjacent to other areas of highest habitat potential. Nussear et al. (2009) developed a model of habitat suitability for the tortoise using presence data and 16 environmental variables to predict potential areas of desert tortoise habitat throughout its geographic range at a 1 km2 scale. Their analysis did not account for anthropogenic changes that may have altered habitat with relatively high potential, turning them into areas with lower potential. We therefore utilized The Nature Conservancy's "highly converted areas" (TNC Mojave Ecoregional Assessment 2010; TNC Sonoran Ecoregional Assessment 2009) to change heavily developed areas where tortoises cannot occur to zero habitat potential. The highly converted layer depicts urban, suburban, and agricultural lands that have been heavily altered. Our model first finds areas with a 1.0 habitat potential probability, then iteratively adds adjacent areas with a lower potential starting with 0.9 down to 0.7. The output consists of all areas down to 0.7 that can be reached from any 1.0 area, with no unconnected "habitat islands."
	"SW_TortoiseConservationAreas": The SW_TCA layer is a mosaic of data including the Arizona, California, Nevada, and Utah ACECs, the DWMA, the Red Cliffs Desert Reserve, the Desert Tortoise Conservation Center, the Desert National Wildlife Refuge, State and National Parks, Beaver Dam Wash National Conservation Area, and the Boulder City Conservation Easement.

Data Layer	Metadata Description
	Processing
	1. The "erase" tool from Arc Toolbox was used to erase all areas of the **contigHab_imp_HC** that were overlapped by TCAs as depicted in the **SW_TortoiseConservationAreas** layer (TCAs are identified in the attributes table of this layer with a "y" under the Tort_Map column). This revised layer depicted all areas of the **contigHab_imp_HC** that occur outside of TCAs.
	2. The "clip" tool from Arc Toolbox was used to clip the **contigAll_poly** layer using the **SW_TortoiseConservationAreas** layer. This revised layer depicted all portions of the **contigAll_poly** layer that occurred within TCAs.
	3. The impervious surfaces layer from the National Landcover Dataset (see description of **contigHab_imp_HC**, above) was used along with the "erase" tool in Arc Toolbox to erase all portions of the **CorridorExtent** layer that were overlapped by development displayed in the impervious surfaces data set.
	4. The revised layers described above (1 through 3) were merged using the "merge" tool in Arc Toolbox to arrive at a range-wide desert tortoise reserve design.
	5. This range-wide design was then clipped to the DRECP boundaries using the "clip" tool in Arc Toolbox. This revised layer depicts the portion of the range-wide desert tortoise reserve design that occurred inside the DRECP Plan boundary.
	6. Because military installations and OHV areas were not going to be considered for development or reserve areas in the DRECP, the "erase" tool in Arc Toolbox was used to remove these areas.
	The final layer represents USFWS's initial reserve design for the desert tortoise in the DRECP planning process. Further refinement of the layer may occur after release of the PCS. In particular, identification of a more comprehensive urban layer and human development layer would allow us to refine some areas currently identified as part of the reserve that have significant amounts of fragmentation and habitat loss (e.g., Morongo Basin Area). While some of this was done in this layer, more accurate development layers would provide a better final design.
Flat-Tailed Horned Lizard Management Area	Mapping of suitable Flat-tailed horned lizard habitat based on the BLM Designated Management Area. This is considered a narrow range species element.
Lane Mountain Milk-Vetch Conservation Area	Mapping of BLM conservation areas for the West Mojave Plan. This is considered a narrow range species element.
Mohave Ground Squirrel Conservation and Recovery Area	Mapping based on parts of historic range, current known population, and population centers and proposed linkages. This is considered an umbrella species element. Draft Conservation Plan boundary for the Mojave ground squirrel for the DRECP (8/2011). These areas are based on Mohave Ground Squirrel Core Areas and Populations and other survey efforts from 1998 to 2009. Polygons identify known current habitat and occurrences of the Mohave ground squirrel, as well as additional existing, adjacent habitat that may hold the potential for recovery and aid in long-term survival of the species if protected. It also identifies areas where rehabilitation of habitat should occur, or where surveys are needed to

Data Layer	Metadata Description
	assess occurrence. In addition, one area is identified here as likely having false-positive occurrence records, and is identified instead as a good area for renewable energy development in terms of Mohave ground squirrel.
	** Mohave ground squirrel core areas and populations metadata follows **
	The Mohave ground squirrel is found only in the Western Mojave Desert of California. Although it is listed as threatened by the State of California, there is little published information regarding its current distribution and status. An analysis of 198 positive records identified four core areas that continue to support relatively abundant Mohave ground squirrel populations and four other areas in which there are multiple recent records of the species.
	The Mohave Ground Squirrel Core Area is comprised of data collected over the past 10 years, which has made it possible to identify four areas within the range of the Mohave ground squirrel that still support relatively abundant and widespread populations. These core areas are defined by three criteria. First, there must be evidence that Mohave ground squirrel populations have persisted for a substantial period of time, on the order of two to three decades. Second, the species must be currently found at a minimum of six locations throughout the area. Third, the total number of individuals detected since 1998 must be less than 30. The four areas that are currently known to satisfy these criteria are Coso/Olancha, Little Dixie Wash, Coolgardie Mesa/Superior Valley, and Edwards Air Force Base. These four core areas total about 1,672 km^2, or about 8.4% of the entire historic range. During the period of 1998–2007, there have been 135 positive records in core areas, accounting for 68.2% of the total 198 positive records. It is important to emphasize that these identified core areas are simply the only important population centers that have been identified thus far. There are very likely other core areas in parts of the geographic range that have not been adequately sampled in the last 10 years.
	Purpose is to display areas of importance for the survival of the Mojave ground squirrel in the desert region of California.
Mojave Fringe-Toed Lizard ACECs; Mojave Fringe-Toed Lizard Conservation Areas	Mapping of BLM conservation areas based on mapping sand, wash, playa, and dune suitable for the species. This is considered a narrow range species element.
	All conservation areas proposed in Alternative B (BLM-only) of DEIS for West Mojave Plan.
Mojave Monkeyflower Populations	Mapping of BLM known occurrences for the West Mojave Plan. This is considered a narrow range species element.
	Mojave monkeyflower population polygons, West Mojave Plan.
	Purpose is for display and analysis to define potential conservation area(s).
Mojave Monkeyflower Conservation Areas	Mapping of BLM conservation areas for the West Mojave Plan. This is considered a narrow range species element.
	Mojave Monkeyflower Conservation Areas, West Mojave Plan (used in DEIS and FEIS).

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Data Layer	Metadata Description
Proposed Critical Habitat for Southwestern Willow Flycatcher	Based on proposed USFWS critical habitat designation for the species. This is considered an umbrella species element. Polygon shapefile depicting the critical habitat for the Southwestern willow flycatcher. The geographic extent includes counties in California, Nevada, Arizona, Utah, Colorado, and New Mexico. The GIS files and their associated coordinates are not the legal source for determining the critical habitat boundaries. Inherent in any data set used to develop graphical representations are limitations of accuracy as determined by, among others, the source, scale, and resolution of the data. While USFWS makes every effort to represent the critical habitat shown with this data as completely and accurately as possible (given existing time and resource constraints), USFWS gives no warranty, expressed or implied, as to the accuracy, reliability, or completeness of these data. In addition, USFWS shall not be held liable for improper or incorrect use of the data described or contained herein. Graphical representations provided by the use of this data do not represent a legal description of the critical habitat boundary. The user is referred to the critical habitat textual description in the appropriate final rule for this species as published in the Federal Register in 2011.