Table 7
Listed and Fully Protected Species in the Mountain Region

Common Name	Scientific Name	Federal Status	State Status
Wildlife			
California red-legged frog	*Rana draytonii*	FT	SSC
arroyo toad	*Anaxyrus californicus*	FE	SSC
bald eagle (nesting and wintering)	*Haliaeetus leucocephalus* (nesting & wintering)	FDL	SE, FP
bank swallow (nesting)	*Riparia riparia*	None	ST
golden eagle (nesting and wintering)	*Aquila chrysaetos*	None	FP
least Bell's vireo (nesting)	*Vireo bellii pusillus* (nesting)	FE	SE
Swainson's hawk (nesting)	*Buteo swainsoni*	None	ST
mountain yellow-legged frog	*Rana muscosa*	FE	SE, SSC
Nelson's bighorn sheep	*Ovis canadensis nelsoni*	None	FP
ringtail	*Bassariscus astutus*	None	FP
Santa Ana sucker	*Catostomus santaanae*	FT	SSC
southwestern willow flycatcher (nesting)	*Empidonax traillii extimus* (nesting)	FE	SE
unarmored threespine stickleback	*Gasterosteus aculeatus williamsoni*	FE	SE, FP
white-tailed kite (nesting)	*Elanus leucurus*	None	FP
southern rubber boa	*Charina umbratica*	None	ST
Townsend's big-eared bat	*Corynorhinus townsendii*	None	SC, SSC
Plants			
ash-gray paintbrush	*Castilleja cinerea*	FT	None
Big Bear Valley sandwort	*Eremogone ursina*	FT	None
bird-foot checkerbloom	*Sidalcea pedata*	FE	CE
California dandelion	*Taraxacum californicum*	FE	None
Cushenbury buckwheat	*Eriogonum ovalifolium* var. *vineum*	FE	None
Cushenbury milk-vetch	*Astragalus albens*	FE	None
Cushenbury oxytheca	*Acanthoscyphus parishii* var. *goodmaniana*	FE	None
Mojave tarplant	*Deinandra mohavensis*	None	CE
Parish's checkerbloom	*Sidalcea hickmanii* ssp. *parishii*	None	CR
Parish's daisy	*Erigeron parishii*	FT	None
San Bernardino blue grass	*Astragalus bernardinus*	None	None
San Bernardino Mountains bladderpod	*Physaria kingii* ssp. *bernardina*	FE	None
Santa Ana River woollystar	*Eriastrum densifolium* ssp. *sanctorum*	FE	CE
slender-horned spineflower	*Dodecahema leptoceras*	FE	CE
slender-petaled thelypodium	*Thelypodium stenopetalum*	FE	CE
southern mountain buckwheat	*Eriogonum kennedyi* var. *austromontanum*	FT	None

Table 7
Listed and Fully Protected Species in the Mountain Region

Common Name	Scientific Name	Federal Status	State Status
thread-leaved brodiaea	*Brodiaea filifolia*	FT	CE
triple-ribbed milk-vetch	*Astragalus tricarinatus*	FE	None

Notes:
FDL: federally delisted
FE: federally listed as endangered
FT: federally listed as threatened
FP: fully protected
SE: state listed as endangered
ST: state listed as threatened
SC: state candidate for listing
SSC: state species of special concern
CE: state listed as endangered (plant)
CR: state rare (plant)

5.2 Physical Conditions

Physical conditions play important roles in the distribution of biological resources. The following provides an overview of some key physical characteristics within the Mountain Region of San Bernardino County with primary features depicted on Figure 9, Geomorphic Features – Mountain Region.

5.2.1 Climate

Annual rainfall amounts for the San Bernardino Mountains can reach up to 40 inches in some areas, with the wettest months being November through March. Summers are relatively dry with few thunderstorms. In winter months, snow typically occurs above 3,000 feet amsl and is very common above 5,000 feet amsl. Average annual snowfall amounts in Big Bear Lake is 72.3 inches. Rainfall in this region is a crucial rain source for the regional streams and rivers that feeds the Santa Ana River. In the summer months, average high temperatures in Big Bear Lake are 81°F, with a low of 48°F. During the winter, average temperatures range between 47°F and 21°F (NOAA 2015). Annual rainfall in Big Bear Lake is 20.05 inches, with most of the precipitation occurring November through March.

5.2.2 Soils

The Mountain Region has a variety of soil types and is constantly undergoing change due to geologically active uplift and fault activity. The majority of the area contains shallow soils consisting primarily of decomposed granite and sandy loam (USDA 2015). An endemic feature of this area is the presence of the pebble plains, which is discussed in more detail below.

Pebble Plain

Pebble plain is a unique soil composition known to occur in the San Bernardino Mountains. Currently, there are at least 10 mapped pebble plain complexes in the vicinity of Big Bear and

Baldwin lakes (USFWS 2015b): Arrastre/Union Flat, Big Bear Lake, Broom Flat, Fawnskin, Gold Mountain, Holcomb Valley, North Baldwin Lake, Sawmill, South Baldwin Ridge/Erwin Lake, and Sugarloaf Ridge. These areas are the fragmented remains of a Pleistocene lake bed and are composed of discrete "islands" of clay soils covered with quartzite pebbles (71 FR 67712 et seq.). The combination of this rare soil series and the oscillating temperatures within the mountains results in unique habitat for plant species in the region (Krantz 1987). There are many rare plants endemic to this area, such as Big Bear Valley sandwort (*Eremogone ursina*), ash-grey paintbrush (*Castilleja cinerea*), southern mountain wild buckwheat (*Eriogonum kennedyi* var. *austromontanum*), Big Bear Valley woollypod (*Astragalus leucolobus*) and Parish's rockcress (*Boechera parishii*).

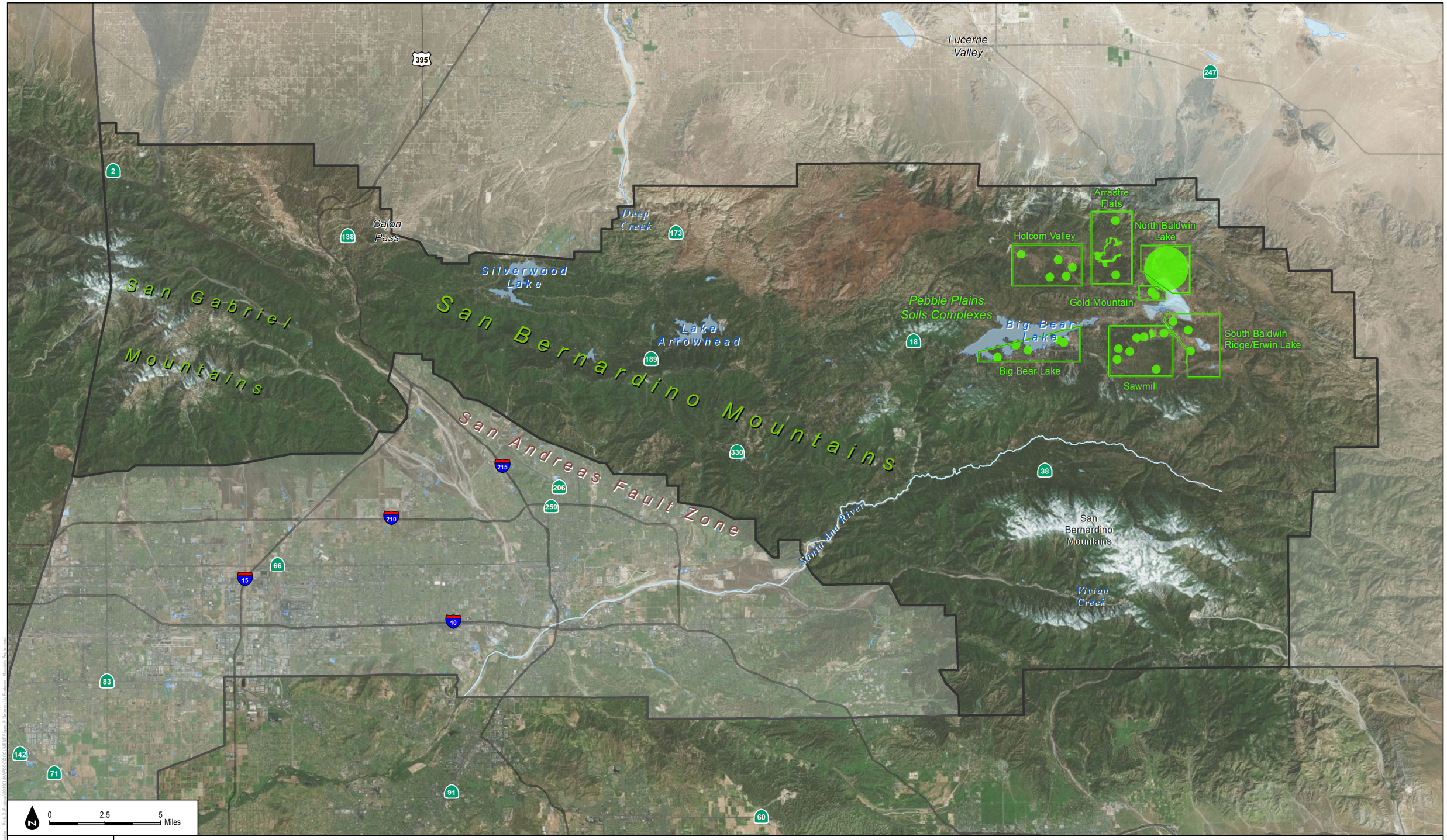
Carbonate Soils

Carbonate soils, or soils with higher alkalinity, can be found in various portions of the Mountain Region of San Bernardino County; most notably from White Mountain to Blackhawk Mountain, including the limestone cliffs of Cushenbury Canyon. These soils provide suitable habitat for numerous rare plant species including carbonate endemics such as Cushenbury buckwheat (*Eriogonum ovalifolium* var. *vineum*), Cushenbury milkvetch (*Astragalus albens*), Cushenbury oxytheca, San Bernardino Mountains bladderpod (*Lesquerella kingii* ssp. *bernardina*), and Parish's daisy (*Erigeron parishii*).

5.2.3 Topography and Geomorphology

The Mountain Region is composed of the San Bernardino Mountains, which are part of the Transverse Ranges of the Southern California mountain chain. The Mountain Region consists of steep mountainous terrain with multiple peaks exceeding 10,000 feet amsl. The range tops out at San Gorgonio Mountain with an elevation of 11,489 feet amsl. The mountains are extremely steep, with one of the deepest mountain passes in the United States, which exceeds the depth of the Grand Canyon by 2,000 feet.

The San Bernardino Mountains are bounded by a series of faults named the North-Frontal System (Miller 1987), with the mountain range interior traversing the Santa Ana faults. The southeastern and southwestern portions of the San Bernardino and San Gabriel Mountains are traversed by the San Andreas Fault Zone and bound the Santa Ana Basin to the north (USGS 2006). Both mountain ranges rise above 10,000 feet amsl and descend gradually to the Mojave Desert to the north. The Mountain Region is composed of steep canyons composed of unstable hillslope rock debris. This debris is constantly stripped away by slope failures and erosion. Debris sediment is then deposited on alluvial fan channels and surfaces (USGS 2006).



SOURCE: Bing Maps, 2016

FIGURE 9

Geomorphic Features - Mountain Region

DUDEK

San Bernardino Countywide Plan - Biological Resources

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5.2.4 Hydrology

Although there are smaller watersheds within the Mountain Region, most of the water flow including snow melt and natural seeps and springs subsidizes the Santa Ana and Mojave Watersheds. The southern and western portions of this region flow southerly and are part of the Santa Ana River watershed. The northern portion flows northerly into the Mojave River watershed. The Mountain Region also has several large lakes: Big Bear Lake, Lake Arrowhead, and Silverwood Lake.

In the Mountain Region, the south fork of the Santa Ana River is an intact riverine resource and a permanently flooded riverine wetland. Vivian Creek is a permanently flooded mountain wetland (Ferren et al. 1996). Deep Creek and Bear Creek are CDFW designated wild trout streams, and contain high quality riparian resources.

A substantial portion of the Mountain Region drains northerly to the Mojave River including Grass Valley Creek, Kinley Creek, Willow Creek, and Deep Creek.

The San Bernardino Mountains and foothill areas also support a number of natural springs or artesian wells that are important for a number of wildlife species, including spring snails and mule deer (*Odocoileus hemionus*). For mule deer, these densely vegetated springs are documented as supporting mule deer fawning areas.

Big Bear Lake

Big Bear Lake is a man-made lake that lies at an elevation of about 6,800 feet amsl and is fed by runoff from numerous creeks that drain the mountains and valley floor. Big Bear Lake is contained by Bear Valley Dam at the west end of the lake. Baldwin Lake, typically dry, lies east of Big Bear Lake at an elevation of about 6,700 feet amsl and receives occasional runoff from canyons to the northwest and creeks to the south. There are several other small natural lakes in the Baldwin Lake surface-water drainage basin (USGS 2012).

Lake Arrowhead

Lake Arrowhead is an artificial lake that lies at an elevation of approximately 5,123 feet. It provides tributary to Deep Creek and eventually the Mojave River. It collects runoff from peaks south of the lake, as well as from the California Aqueduct via its terminus in Hesperia.

Silverwood Lake

Silverwood Lake is a reservoir at the northern portion of the Mountain Region that feeds into the Mojave River which runs through the Desert Region of the County.

Deep Creek

Deep Creek is one of the most prominent tributaries to the Mojave River within the San Bernardino Mountains. It begins by collecting runoff from the peaks surrounding Arrowbear Lake before winding north past Lake Arrowhead. It then veers west and connects with the west fork of the Mojave River.

Grass Valley Creek

Grass Valley Creek originates from Grass Valley Lake which lies west of Lake Arrowhead. It flows northwest before connecting with the West Fork of the Mojave River.

Kinley Creek

Kinley Creek drains from Lake Arrowhead before traveling north to connect with Deep Creek, which in turn travels towards the Mojave River.

Willow Creek

Willow Creek is a tributary the West Fork of the Mojave River, first originating from Lake Arrowhead and traveling north before connecting with Deep Creek.

Vivian Creek

Vivian Creek collects runoff from the San Gorgonio Mountains and travels west through Mill Creek Canyon before connecting with the Santa Ana River.

Bear Creek

Bear Creek drains water from Big Bear Lake and is a major tributary to the Santa Ana River which runs through the Valley Region of San Bernardino County.

5.3 Biological Conditions

The following subsections provide a detailed description of the vegetation communities and land covers and special-status plant and wildlife species that occur within the Mountain Region of San Bernardino County.

5.3.1 Vegetation Communities and Land Covers

The following identifies the vegetation communities and land covers that have been mapped in the Mountain Region of San Bernardino County. Table 8 summarizes the vegetation communities located within the Mountain Region; detailed descriptions are provided in Appendix A. The geographic extent of the vegetation communities is depicted on Figure 10, Vegetation Communities and Land Covers – Mountain Region. The CALVEG categories were cross-walked with alliances from the Manual of California Vegetation (Sawyer et al. 2009). This listing and the associated sensitivity status of each alliance can be found in Appendix B.

Table 8.
Vegetation Communities and Other Land Covers
within the Mountain Region of San Bernardino County

	Acres within County Boundary	% within County Boundary	Acres Within County Jurisdiction	% within County Jurisdiction
Agriculture				
Agriculture	721.19	0.13%	699.99	0.13%
Orchard Agriculture	19.57	0.00%	18.63	0.00%
Pastures and Crop Agriculture	13.42	0.00%	13.42	0.00%
Subtotal	*754.18*	*0.14%*	*732.03*	*0.14%*
Alpine Scrub				
Alpine Mixed Scrub	17.82	0.00%	17.82	0.00%
Subtotal	*17.82*	*0.00%*	*17.82*	*0.00%*
Barren				
Barren	5,410.46	1.01%	5,406.72	1.03%
Subtotal	*5,410.46*	*1.01%*	*5,406.72*	*1.03%*
California Bay Forest and Woodland				
California Bay	9.53	0.00%	9.53	0.00%
Subtotal	*9.53*	*0.00%*	*9.53*	*0.00%*
Chenopod Scrub				
Saltbush	60.52	0.01%	60.52	0.01%
Subtotal	*60.52*	*0.01%*	*60.52*	*0.01%*
Coastal Montane Douglas-fir Forests and Woodlands				
Bigcone Douglas-Fir	13,006.59	2.43%	12,998.72	2.47%
Douglas-Fir - Ponderosa Pine	66.70	0.01%	66.70	0.01%
Subtotal	*13,073.29*	*2.44%*	*13,065.42*	*2.48%*
Coastal Scrub				
Buckwheat	803.93	0.15%	755.86	0.14%
California Sagebrush	1,931.30	0.36%	1,358.19	0.26%
Central and south coastal California seral scrub	1.07	0.00%	1.07	0.00%

Table 8.
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Agriculture				
Agriculture	721.19	0.13%	699.99	0.13%
Orchard Agriculture	19.57	0.00%	18.63	0.00%
Pastures and Crop Agriculture	13.42	0.00%	13.42	0.00%
Subtotal	*754.18*	*0.14%*	*732.03*	*0.14%*
Alpine Scrub				
Alpine Mixed Scrub	17.82	0.00%	17.82	0.00%
Subtotal	*17.82*	*0.00%*	*17.82*	*0.00%*
Barren				
Barren	5,410.46	1.01%	5,406.72	1.03%
Subtotal	*5,410.46*	*1.01%*	*5,406.72*	*1.03%*
California Bay Forest and Woodland				
California Bay	9.53	0.00%	9.53	0.00%
Subtotal	*9.53*	*0.00%*	*9.53*	*0.00%*
Chenopod Scrub				
Saltbush	60.52	0.01%	60.52	0.01%
Subtotal	*60.52*	*0.01%*	*60.52*	*0.01%*
Coastal Montane Douglas-fir Forests and Woodlands				
Bigcone Douglas-Fir	13,006.59	2.43%	12,998.72	2.47%
Douglas-Fir - Ponderosa Pine	66.70	0.01%	66.70	0.01%
Subtotal	*13,073.29*	*2.44%*	*13,065.42*	*2.48%*
Central and South Coastal Californian coastal sage scrub	15.47	0.00%	15.47	0.00%
Encelia Scrub	616.95	0.12%	545.20	0.10%
Subtotal	*3,368.72*	*0.63%*	*2,675.78*	*0.51%*
Desert Bedrock Cliff and Outcrop				
North American warm desert bedrock cliff and outcrop	0.40	0.00%	0.40	0.00%
Subtotal	*0.40*	*0.00%*	*0.40*	*0.00%*
Desert Dry Wash Woodland				
Sonoran-Coloradan semi-desert wash woodland/scrub	0.09	0.00%	0.09	0.00%
Subtotal	*0.09*	*0.00%*	*0.09*	*0.00%*
Developed and Disturbed Areas				
Developed and Disturbed Areas	205.64	0.04%	129.49	0.02%
Non-Native/Ornamental Grass	28.87	0.01%	18.35	0.00%
Non-Native/Ornamental Grass	117.88	0.02%	117.88	0.02%
Non-Native/Ornamental Hardwood	11.94	0.00%	11.94	0.00%

Table 8.
Vegetation Communities and Other Land Covers
within the Mountain Region of San Bernardino County

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Agriculture				
Agriculture	721.19	0.13%	699.99	0.13%
Orchard Agriculture	19.57	0.00%	18.63	0.00%
Pastures and Crop Agriculture	13.42	0.00%	13.42	0.00%
Subtotal	*754.18*	*0.14%*	*732.03*	*0.14%*
Alpine Scrub				
Alpine Mixed Scrub	17.82	0.00%	17.82	0.00%
Subtotal	*17.82*	*0.00%*	*17.82*	*0.00%*
Barren				
Barren	5,410.46	1.01%	5,406.72	1.03%
Subtotal	*5,410.46*	*1.01%*	*5,406.72*	*1.03%*
California Bay Forest and Woodland				
California Bay	9.53	0.00%	9.53	0.00%
Subtotal	*9.53*	*0.00%*	*9.53*	*0.00%*
Chenopod Scrub				
Saltbush	60.52	0.01%	60.52	0.01%
Subtotal	*60.52*	*0.01%*	*60.52*	*0.01%*
Coastal Montane Douglas-fir Forests and Woodlands				
Bigcone Douglas-Fir	13,006.59	2.43%	12,998.72	2.47%
Douglas-Fir - Ponderosa Pine	66.70	0.01%	66.70	0.01%
Subtotal	*13,073.29*	*2.44%*	*13,065.42*	*2.48%*
Rural	0.18	0.00%	0.18	0.00%
Urban/Developed (General)	21,890.36	4.09%	18,964.64	3.60%
Urban-related Bare Soil	1391.55	0.26%	1,310.59	0.25%
Subtotal	*23,646.42*	*4.42%*	*20,553.07*	*3.90%*
Eucalyptus Naturalized Forest				
Eucalyptus	10.73	0.00%	0.00	0.00%
Subtotal	*10.73*	*0.00%*	*0.00*	*0.00%*
Forest and Woodland dominated by Fir				
Mixed Conifer - Fir	52,494.68	9.81%	52,395.60	9.94%
White Fir	253.71	0.05%	253.71	0.05%
Subtotal	*52,748.40*	*9.85%*	*52,649.31*	*9.99%*
Great Basin Scrub				
Basin Sagebrush	3307.01	0.62%	3,296.86	0.63%
Bitterbrush - Sagebrush	9.60	0.00%	9.60	0.00%

Table 8.
Vegetation Communities and Other Land Covers
within the Mountain Region of San Bernardino County

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Agriculture				
Agriculture	721.19	0.13%	699.99	0.13%
Orchard Agriculture	19.57	0.00%	18.63	0.00%
Pastures and Crop Agriculture	13.42	0.00%	13.42	0.00%
Subtotal	*754.18*	*0.14%*	*732.03*	*0.14%*
Alpine Scrub				
Alpine Mixed Scrub	17.82	0.00%	17.82	0.00%
Subtotal	*17.82*	*0.00%*	*17.82*	*0.00%*
Barren				
Barren	5,410.46	1.01%	5,406.72	1.03%
Subtotal	*5,410.46*	*1.01%*	*5,406.72*	*1.03%*
California Bay Forest and Woodland				
California Bay	9.53	0.00%	9.53	0.00%
Subtotal	*9.53*	*0.00%*	*9.53*	*0.00%*
Chenopod Scrub				
Saltbush	60.52	0.01%	60.52	0.01%
Subtotal	*60.52*	*0.01%*	*60.52*	*0.01%*
Coastal Montane Douglas-fir Forests and Woodlands				
Bigcone Douglas-Fir	13,006.59	2.43%	12,998.72	2.47%
Douglas-Fir - Ponderosa Pine	66.70	0.01%	66.70	0.01%
Subtotal	*13,073.29*	*2.44%*	*13,065.42*	*2.48%*
Blackbush	1750.08	0.33%	1,750.08	0.33%
Great Basin - Desert Mixed Scrub	29.86	0.01%	29.86	0.01%
Great Basin Mixed Scrub	11617.60	2.17%	11,617.60	2.20%
Intermontane deep or well-drained soil scrub	0.12	0.00%	0.12	0.00%
Intermontane seral shrubland	18.75	0.00%	18.75	0.00%
Inter-Mountain Dry Shrubland and Grassland	44.26	0.01%	44.26	0.01%
Intermountain Mountain Big Sagebrush Shrubland and steppe	38.04	0.01%	38.04	0.01%
Mojave and Great Basin upper bajada and toeslope	4.80	0.00%	4.80	0.00%
Rabbitbrush	9803.47	1.83%	9,803.44	1.86%
Subtotal	*26623.60*	*4.97%*	*26,613.41*	*5.05%*
Joshua Tree Woodland				
Joshua Tree	958.05	0.18%	958.05	0.18%
Mojave and Great Basin upper bajada and toeslope	2.59	0.00%	2.59	0.00%

Table 8.
Vegetation Communities and Other Land Covers
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Orchard Agriculture	19.57	0.00%	18.63	0.00%
Pastures and Crop Agriculture	13.42	0.00%	13.42	0.00%
Subtotal	*754.18*	*0.14%*	*732.03*	*0.14%*
Alpine Scrub				
Alpine Mixed Scrub	17.82	0.00%	17.82	0.00%
Subtotal	*17.82*	*0.00%*	*17.82*	*0.00%*
Barren				
Barren	5,410.46	1.01%	5,406.72	1.03%
Subtotal	*5,410.46*	*1.01%*	*5,406.72*	*1.03%*
California Bay Forest and Woodland				
California Bay	9.53	0.00%	9.53	0.00%
Subtotal	*9.53*	*0.00%*	*9.53*	*0.00%*
Chenopod Scrub				
Saltbush	60.52	0.01%	60.52	0.01%
Subtotal	*60.52*	*0.01%*	*60.52*	*0.01%*
Coastal Montane Douglas-fir Forests and Woodlands				
Bigcone Douglas-Fir	13,006.59	2.43%	12,998.72	2.47%
Douglas-Fir - Ponderosa Pine	66.70	0.01%	66.70	0.01%
Subtotal	*13,073.29*	*2.44%*	*13,065.42*	*2.48%*
Subtotal	*960.63*	*0.18%*	*960.63*	*0.18%*
Juniper Woodlands				
California Juniper (shrub)	66.45	0.01%	66.45	0.01%
Great Basin Pinyon - Juniper Woodland	224.03	0.04%	223.28	0.04%
Western Juniper	616.97	0.12%	616.97	0.12%
Subtotal	*907.45*	*0.17%*	*906.70*	*0.17%*
Meadows				
Wet Meadows	414.45	0.08%	359.19	0.07%
Subtotal	*414.45*	*0.08%*	*359.19*	*0.07%*
Native Grasslands				
Alkaline Mixed Grasses	404.17	0.08%	404.17	0.08%
Subtotal	*404.17*	*0.08%*	*404.17*	*0.08%*
Non-Native Grassland				
Annual Grasses and Forbs	1,564.34	0.29%	1,416.58	0.27%

Table 8.
Vegetation Communities and Other Land Covers
within the Mountain Region of San Bernardino County

	Acres within County Boundary	% within County Boundary	Acres Within County Jurisdiction	% within County Jurisdiction
Agriculture				
Agriculture	721.19	0.13%	699.99	0.13%
Orchard Agriculture	19.57	0.00%	18.63	0.00%
Pastures and Crop Agriculture	13.42	0.00%	13.42	0.00%
Subtotal	*754.18*	*0.14%*	*732.03*	*0.14%*
Alpine Scrub				
Alpine Mixed Scrub	17.82	0.00%	17.82	0.00%
Subtotal	*17.82*	*0.00%*	*17.82*	*0.00%*
Barren				
Barren	5,410.46	1.01%	5,406.72	1.03%
Subtotal	*5,410.46*	*1.01%*	*5,406.72*	*1.03%*
California Bay Forest and Woodland				
California Bay	9.53	0.00%	9.53	0.00%
Subtotal	*9.53*	*0.00%*	*9.53*	*0.00%*
Chenopod Scrub				
Saltbush	60.52	0.01%	60.52	0.01%
Subtotal	*60.52*	*0.01%*	*60.52*	*0.01%*
Coastal Montane Douglas-fir Forests and Woodlands				
Bigcone Douglas-Fir	13,006.59	2.43%	12,998.72	2.47%
Douglas-Fir - Ponderosa Pine	66.70	0.01%	66.70	0.01%
Subtotal	*13,073.29*	*2.44%*	*13,065.42*	*2.48%*
California Annual and Perennial Grassland	190.65	0.04%	190.65	0.04%
Perennial Grasses and Forbs	32.71	0.01%	32.71	0.01%
Subtotal	*1,787.70*	*0.33%*	*1,639.95*	*0.31%*
Oak Woodlands and Forests				
Black Oak	7,592.62	1.42%	7,584.25	1.44%
Californian broadleaf forest and woodland	0.10	0.00%	0.10	0.00%
Canyon Live Oak	29,812.92	5.57%	29,654.28	5.62%
Coast Live Oak	256.85	0.05%	206.50	0.04%
Coastal Mixed Hardwood	1.26	0.00%	1.26	0.00%
Interior Live Oak	516.50	0.10%	516.50	0.10%
Interior Mixed Hardwood	666.53	0.12%	666.53	0.13%
Subtotal	*38,846.78*	*7.26%*	*38,629.41*	*7.33%*
Pine Forests and Woodland				
Californian montane conifer forest	439.88	0.08%	439.67	0.08%

Table 8.
Vegetation Communities and Other Land Covers within the Mountain Region of San Bernardino County

	Acres within County Boundary	% within County Boundary	Acres Within County Jurisdiction	% within County Jurisdiction
Agriculture				
Agriculture	721.19	0.13%	699.99	0.13%
Orchard Agriculture	19.57	0.00%	18.63	0.00%
Pastures and Crop Agriculture	13.42	0.00%	13.42	0.00%
Subtotal	*754.18*	*0.14%*	*732.03*	*0.14%*
Alpine Scrub				
Alpine Mixed Scrub	17.82	0.00%	17.82	0.00%
Subtotal	*17.82*	*0.00%*	*17.82*	*0.00%*
Barren				
Barren	5,410.46	1.01%	5,406.72	1.03%
Subtotal	*5,410.46*	*1.01%*	*5,406.72*	*1.03%*
California Bay Forest and Woodland				
California Bay	9.53	0.00%	9.53	0.00%
Subtotal	*9.53*	*0.00%*	*9.53*	*0.00%*
Chenopod Scrub				
Saltbush	60.52	0.01%	60.52	0.01%
Subtotal	*60.52*	*0.01%*	*60.52*	*0.01%*
Coastal Montane Douglas-fir Forests and Woodlands				
Bigcone Douglas-Fir	13,006.59	2.43%	12,998.72	2.47%
Douglas-Fir - Ponderosa Pine	66.70	0.01%	66.70	0.01%
Subtotal	*13,073.29*	*2.44%*	*13,065.42*	*2.48%*
Coulter Pine	7,129.31	1.33%	7,129.21	1.35%
Eastside Pine	28,876.54	5.39%	28,646.80	5.43%
Great Basin Pinyon - Juniper Woodland	10.89	0.00%	10.89	0.00%
Jeffrey Pine	13,564.08	2.53%	13,505.13	2.56%
Knobcone Pine	1,054.18	0.20%	1,047.90	0.20%
Limber Pine	947.19	0.18%	947.19	0.18%
Lodgepole Pine	6.68	0.00%	6.68	0.00%
Mixed Conifer - Pine	35,499.99	6.63%	35,499.99	6.73%
Ponderosa Pine	2,949.94	0.55%	2,949.94	0.56%
Singleleaf Pinyon Pine	46,352.93	8.66%	46,352.93	8.79%
Subalpine Conifers	8,454.92	1.58%	8,454.92	1.60%
Subtotal	*145,286.54*	*27.14%*	*144,991.25*	*27.50%*
Riparian Forest and Woodland				
Black Cottonwood	4.70	0.00%	4.70	0.00%

Table 8.
Vegetation Communities and Other Land Covers
within the Mountain Region of San Bernardino County

	Acres within County Boundary	% within County Boundary	Acres Within County Jurisdiction	% within County Jurisdiction
Agriculture				
Agriculture	721.19	0.13%	699.99	0.13%
Orchard Agriculture	19.57	0.00%	18.63	0.00%
Pastures and Crop Agriculture	13.42	0.00%	13.42	0.00%
Subtotal	*754.18*	*0.14%*	*732.03*	*0.14%*
Alpine Scrub				
Alpine Mixed Scrub	17.82	0.00%	17.82	0.00%
Subtotal	*17.82*	*0.00%*	*17.82*	*0.00%*
Barren				
Barren	5,410.46	1.01%	5,406.72	1.03%
Subtotal	*5,410.46*	*1.01%*	*5,406.72*	*1.03%*
California Bay Forest and Woodland				
California Bay	9.53	0.00%	9.53	0.00%
Subtotal	*9.53*	*0.00%*	*9.53*	*0.00%*
Chenopod Scrub				
Saltbush	60.52	0.01%	60.52	0.01%
Subtotal	*60.52*	*0.01%*	*60.52*	*0.01%*
Coastal Montane Douglas-fir Forests and Woodlands				
Bigcone Douglas-Fir	13,006.59	2.43%	12,998.72	2.47%
Douglas-Fir - Ponderosa Pine	66.70	0.01%	66.70	0.01%
Subtotal	*13,073.29*	*2.44%*	*13,065.42*	*2.48%*
California Sycamore	104.34	0.02%	93.55	0.02%
Fremont Cottonwood	134.74	0.03%	132.56	0.03%
Riparian Mixed Hardwood	827.15	0.15%	778.08	0.15%
Southwestern North American riparian evergreen and deciduous woodland	6.12	0.00%	6.12	0.00%
White Alder	450.61	0.08%	450.61	0.09%
Subtotal	*1527.66*	*0.29%*	*1,465.62*	*0.28%*
Riparian Scrub				
Baccharis (Riparian)	43.90	0.01%	43.90	0.01%
Riparian Mixed Shrub	7.73	0.00%	7.73	0.00%
Southwestern North American riparian/wash scrub	54.93	0.01%	54.93	0.01%
Willow	173.40	0.03%	150.49	0.03%
Willow (Shrub)	359.51	0.07%	346.27	0.07%
Subtotal	*639.47*	*0.12%*	*603.33*	*0.11%*

Table 8.
Vegetation Communities and Other Land Covers
within the Mountain Region of San Bernardino County

	Acres within County Boundary	% within County Boundary	Acres Within County Jurisdiction	% within County Jurisdiction
Agriculture				
Agriculture	721.19	0.13%	699.99	0.13%
Orchard Agriculture	19.57	0.00%	18.63	0.00%
Pastures and Crop Agriculture	13.42	0.00%	13.42	0.00%
Subtotal	*754.18*	*0.14%*	*732.03*	*0.14%*
Alpine Scrub				
Alpine Mixed Scrub	17.82	0.00%	17.82	0.00%
Subtotal	*17.82*	*0.00%*	*17.82*	*0.00%*
Barren				
Barren	5,410.46	1.01%	5,406.72	1.03%
Subtotal	*5,410.46*	*1.01%*	*5,406.72*	*1.03%*
California Bay Forest and Woodland				
California Bay	9.53	0.00%	9.53	0.00%
Subtotal	*9.53*	*0.00%*	*9.53*	*0.00%*
Chenopod Scrub				
Saltbush	60.52	0.01%	60.52	0.01%
Subtotal	*60.52*	*0.01%*	*60.52*	*0.01%*
Coastal Montane Douglas-fir Forests and Woodlands				
Bigcone Douglas-Fir	13,006.59	2.43%	12,998.72	2.47%
Douglas-Fir - Ponderosa Pine	66.70	0.01%	66.70	0.01%
Subtotal	*13,073.29*	*2.44%*	*13,065.42*	*2.48%*
Riversidean Alluvial Fan Sage Scrub				
Riversidean Alluvial Scrub	876.83	0.16%	764.14	0.14%
Scalebroom	1,373.06	0.26%	1,370.09	0.26%
Subtotal	*2,249.89*	*0.42%*	*2,134.22*	*0.40%*
Sonoran and Mojavean Desert Scrub				
Creosote Bush	12.47	0.00%	12.47	0.00%
Desert Buckwheat	1,237.27	0.23%	1,237.22	0.23%
Desert Mixed Shrub	4,250.35	0.79%	4,250.35	0.81%
Intermontane deep or well-drained soil scrub	0.30	0.00%	0.30	0.00%
Lower Bajada and Fan Mojavean - Sonoran desert scrub	209.06	0.04%	209.06	0.04%
Mojave and Great Basin upper bajada and toeslope	0.91	0.00%	0.91	0.00%
Mojavean semi-desert wash scrub	0.38	0.00%	0.38	0.00%
Subtotal	*5,710.74*	*1.07%*	*5,710.69*	*1.08%*

Table 8.
Vegetation Communities and Other Land Covers
within the Mountain Region of San Bernardino County

	Acres within County Boundary	% within County Boundary	Acres Within County Jurisdiction	% within County Jurisdiction
Agriculture				
Agriculture	721.19	0.13%	699.99	0.13%
Orchard Agriculture	19.57	0.00%	18.63	0.00%
Pastures and Crop Agriculture	13.42	0.00%	13.42	0.00%
Subtotal	*754.18*	*0.14%*	*732.03*	*0.14%*
Alpine Scrub				
Alpine Mixed Scrub	17.82	0.00%	17.82	0.00%
Subtotal	*17.82*	*0.00%*	*17.82*	*0.00%*
Barren				
Barren	5,410.46	1.01%	5,406.72	1.03%
Subtotal	*5,410.46*	*1.01%*	*5,406.72*	*1.03%*
California Bay Forest and Woodland				
California Bay	9.53	0.00%	9.53	0.00%
Subtotal	*9.53*	*0.00%*	*9.53*	*0.00%*
Chenopod Scrub				
Saltbush	60.52	0.01%	60.52	0.01%
Subtotal	*60.52*	*0.01%*	*60.52*	*0.01%*
Coastal Montane Douglas-fir Forests and Woodlands				
Bigcone Douglas-Fir	13,006.59	2.43%	12,998.72	2.47%
Douglas-Fir - Ponderosa Pine	66.70	0.01%	66.70	0.01%
Subtotal	*13,073.29*	*2.44%*	*13,065.42*	*2.48%*
Undifferentiated Chaparral Scrub				
Birchleaf Mountain Mahogany	3,971.40	0.74%	3,971.40	0.75%
Californian mesic chaparral	47.01	0.01%	46.41	0.01%
Californian xeric chaparral	124.30	0.02%	119.59	0.02%
Ceanothus Mixed Chaparral	14,231.79	2.66%	13,822.68	2.62%
Chamise	15,096.43	2.82%	14,940.97	2.83%
Curlleaf Mountain Mahogany	1,950.10	0.36%	1,936.99	0.37%
Curlleaf Mountain Mahogany (tree)	119.48	0.02%	119.48	0.02%
Great Basin - Mixed Chaparral Transition	8,418.15	1.57%	8,417.86	1.60%
Lower Montane Mixed Chaparral	80,201.36	14.98%	78,486.67	14.89%
Manzanita Chaparral	1,480.23	0.28%	1,480.23	0.28%
Scrub Oak	48,990.87	9.15%	48,648.67	9.23%
Semi-Desert Chaparral	8,890.06	1.66%	8,888.85	1.69%
Soft Scrub Mixed Chaparral	4,413.48	0.82%	4,031.92	0.76%

Table 8.
Vegetation Communities and Other Land Covers within the Mountain Region of San Bernardino County

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Pastures and Crop Agriculture	13.42	0.00%	13.42	0.00%
Subtotal	*754.18*	*0.14%*	*732.03*	*0.14%*
Alpine Scrub				
Alpine Mixed Scrub	17.82	0.00%	17.82	0.00%
Subtotal	*17.82*	*0.00%*	*17.82*	*0.00%*
Barren				
Barren	5,410.46	1.01%	5,406.72	1.03%
Subtotal	*5,410.46*	*1.01%*	*5,406.72*	*1.03%*
California Bay Forest and Woodland				
California Bay	9.53	0.00%	9.53	0.00%
Subtotal	*9.53*	*0.00%*	*9.53*	*0.00%*
Chenopod Scrub				
Saltbush	60.52	0.01%	60.52	0.01%
Subtotal	*60.52*	*0.01%*	*60.52*	*0.01%*
Coastal Montane Douglas-fir Forests and Woodlands				
Bigcone Douglas-Fir	13,006.59	2.43%	12,998.72	2.47%
Douglas-Fir - Ponderosa Pine	66.70	0.01%	66.70	0.01%
Subtotal	*13,073.29*	*2.44%*	*13,065.42*	*2.48%*
Sumac Shrub	300.31	0.06%	293.12	0.06%
Tucker / Muller Scrub Oak	903.69	0.17%	903.69	0.17%
Upper Montane Mixed Chaparral	14,783.86	2.76%	14,773.56	2.80%
Western Mojave and Western Sonoran Desert borderland chaparral	15.19	0.00%	15.19	0.00%
Subtotal	*203,937.71*	*38.09%*	*200,897.30*	*38.10%*
Waterway				
Agriculture Pond or Water Feature	0.89	0.00%	0.89	0.00%
Intermittent Lake or Pond	7.18	0.00%	7.18	0.00%
Intermittent Stream Channel	1329.93	0.25%	1,288.71	0.24%
Madrean Warm Semi-Desert Wash Woodland/Scrub	0.41	0.00%	0.41	0.00%
Open Water	12.94	0.00%	12.94	0.00%
Perennial Lake or Pond	5307.88	0.99%	5,142.71	0.98%
Reservoir	9.43	0.00%	9.43	0.00%

Table 8.
Vegetation Communities and Other Land Covers
within the Mountain Region of San Bernardino County

	Acres within County Boundary	% within County Boundary	Acres Within County Jurisdiction	% within County Jurisdiction
Agriculture				
Agriculture	721.19	0.13%	699.99	0.13%
Orchard Agriculture	19.57	0.00%	18.63	0.00%
Pastures and Crop Agriculture	13.42	0.00%	13.42	0.00%
Subtotal	*754.18*	*0.14%*	*732.03*	*0.14%*
Alpine Scrub				
Alpine Mixed Scrub	17.82	0.00%	17.82	0.00%
Subtotal	*17.82*	*0.00%*	*17.82*	*0.00%*
Barren				
Barren	5,410.46	1.01%	5,406.72	1.03%
Subtotal	*5,410.46*	*1.01%*	*5,406.72*	*1.03%*
California Bay Forest and Woodland				
California Bay	9.53	0.00%	9.53	0.00%
Subtotal	*9.53*	*0.00%*	*9.53*	*0.00%*
Chenopod Scrub				
Saltbush	60.52	0.01%	60.52	0.01%
Subtotal	*60.52*	*0.01%*	*60.52*	*0.01%*
Coastal Montane Douglas-fir Forests and Woodlands				
Bigcone Douglas-Fir	13,006.59	2.43%	12,998.72	2.47%
Douglas-Fir - Ponderosa Pine	66.70	0.01%	66.70	0.01%
Subtotal	*13,073.29*	*2.44%*	*13,065.42*	*2.48%*
Riparian	0.37	0.00%	0.37	0.00%
Urban or Industrial Impoundment	100.99	0.02%	100.99	0.02%
Water (General)	209.82	0.04%	207.80	0.04%
Subtotal	*6979.83*	*1.30%*	*6,771.42*	*1.28%*
Grand Total	**535,377.06**		**527,257.89**	

Note: Table updated March 2019

Agriculture

Agricultural land composes approximately 0.1% (731.3 acres) of the Mountain Region and includes the following agricultural types: agriculture (general), orchard agriculture, and pastures and crop agriculture (Table 8). Agricultural lands are not considered a sensitive biological resource (CDFG 2010).

HESPERIA

BIG BEAR LAKE

SAN BERNARDINO

HIGHLAND

COLTON

LOMA LINDA

REDLANDS

GRAND TERRACE

YUCAIPA

County Ecological Regions

- Mountain Region

GeneralCommunity

- Agriculture
- Alpine Scrub
- Barren
- California Bay Forest and Woodland
- Chenopod Scrub
- Coastal Montane Douglas-fir Forests and Woodlands
- Coastal Scrub
- Desert Dry Wash Woodland
- Developed and Disturbed Areas
- Eucalyptus Naturalized Forest
- Forest and Woodland dominated by Fir
- Great Basin Scrub
- Joshua Tree Woodland
- Juniper Woodlands
- Meadows
- Native Grasslands
- Non-Native Grassland
- Oak Woodlands and Forests
- Pine Forests and Woodland
- Riparian Forest and Woodland
- Riparian Scrub
- Riversidean Alluvial Fan Sage Scrub
- Sonoran and Mojavean Desert Scrub
- Undifferentiated Chaparral Scrub
- Waterway
- CountyPlanningRegions

N

0 2.5 5 Miles

SOURCE: Bing Maps, 2015; CDFG, 2015

DUDEK

FIGURE 10

Vegetation Communities and Land Covers - Mountain Region

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Alpine Scrub

The alpine scrub general community composes approximately <0.1% (17.8 acres) of the Mountain Region and includes one alliance: alpine mixed scrub (Table 8). Alpine mixed scrub includes a mixture of grasses, herbaceous plants, and often prostrate subshrubs. Rounded, low-profile xerophytic plant forms ("cushion plants") such as southern alpine buckwheat (*Eriogonum kennedyi* var. *alpigenum*) occur with other subshrubs and taller shrubs such as sulphur-flower buckwheat (*Eriogonum umbellatum*), ocean spray bush (*Holodiscus discolor* var. *microphyllus*), wax currant (*Ribes cereum*), gooseberry currant (*R. montigenum*), purple mountainheath (*Phyllodoce breweri*), red elderberry (*Sambucus racemosa*), and shrub willows such as Geyer willow (*Salix geyeriana*) and Lemmon's willow (*S. lemmonii*). Perennials such as Southern California draba (*Draba corrugata*), silky raillardella (*Raillardella argentea*), Parish's catchfly (*Silene parishii*), oneseed pussypaws (*Calyptridium monospermum*), alpine shooting star (*Primula tetrandra*), Eschscholtz's buttercup (*Ranunculus eschscholtzii* var. *oxynotus*), and beautiful hulsea (*Hulsea vestita*), as well as grasses and graminoid species such as western needlegrass (*Stipa occidentalis*), squirreltail (*Elymus elymoides*), rushes, and sedges, may also occur. This community is considered sensitive in the County due to its limited extent and unique habitat value.

Barren

Barren lands compose approximately 0.1% (5,446.0 acres) of the Mountain Region (Table 8). Barren lands include landscapes that are generally devoid of vegetation and may include exposed bedrock, cliffs, interior sandy or gypsum areas. Barren lands may include quarries and mine sites. Barren lands are not considered a sensitive biological resource (CDFG 2010).

California Bay Forest and Woodland

The California bay forest and woodland general community composes approximately <0.1% (9.5 acres) of the Mountain Region and includes one alliance: California bay (Table 8). This community is dominated by California bay (*Umbellularia californica*) and may have other codominant species such as coast live oak (*Quercus agrifolia*) and canyon live oak as well as shrub species including chamise, species of *Ceanothus*, and interior live oak shrubs (*Q. chrysolepis* var. *nana*, *Q. wislizenii* var. *frutescens*). California bay forest is considered a sensitive biological resource (CDFG 2010).

Chenopod Scrub

The chenopod scrub general community composes approximately <0.1% (62.2 acres) of the Mountain Region and includes one alliance: saltbush (Table 8). This community is dominated by fourwing saltbush (*Atriplex canescens*), with common associated species including creosote bush, brittlebush (*Encelia farinosa*), and mesquite (*Prosopis* spp.). The fourwing saltbush alliance is not considered a sensitive biological resource (CDFG 2010).

Coastal Montane Douglas-Fir Forests and Woodlands

The coastal montane Douglas-fir forests and woodlands general community composes approximately 2.4% (13,229.0 acres) of the Mountain Region and includes two alliances: bigcone Douglas-fir and Douglas-fir–ponderosa pine (Table 8). This community is dominated by bigcone Douglas-fir or a combination of bigcone Douglas-fir and Ponderosa pine (*Pinus ponderosa*). The bigcone Douglas-fir alliance is considered a sensitive biological resource (CDFG 2010).

Coastal Scrub

The coastal scrub general community composes approximately 0.6% (3,512.9 acres) of the Mountain Region and includes three alliances: buckwheat, California sagebrush, and encelia scrub (Table 8). This community may be dominated by Eastern Mojave buckwheat, with or without the presence of white sage, California sagebrush scrub, or brittlebush (*Encelia farinosa, E. actoni*). These alliances are not considered sensitive biological resources (CDFG 2010).

Developed and Disturbed Areas

Developed and disturbed areas compose approximately 4.8% (26,819.1 acres) of the Mountain Region and include five types: non-native/ornamental conifer, non-native/ornamental grass, non-native ornamental hardwood, urban/developed (general), and urban-related bare soil (Table 8). CDFG does not consider developed and disturbed areas a sensitive biological resource (CDFG 2010).

Eucalyptus Naturalized Forest

Eucalyptus naturalized forest composes approximately <0.1% (10.7 acres) of the Mountain Region (Table 8). These are dense, pure stands of multiple species of eucalyptus, including blue gum (*Eucalyptus globulus*), red gum (*E. camaldulensis*), silver gum (*E. polyanthemos*), and forest red gum (*E. tereticornis*). Naturalization has occurred in disturbed areas, augmented by the ability of this genus to resprout after disturbance. This community is typically adjacent to urban areas and non-native grasses. CDFG does not consider eucalyptus naturalized forest a sensitive biological resource (CDFG 2010).

Forest and Woodland Dominated by Fir

This general community composes approximately 9.4% (52,867.6 acres) of the Mountain Region and includes two alliances: mixed conifer–fir and white fir (Table 8). White fir (*Abies concolor*), composes a prominent portion of the conifer canopy cover, with Jeffrey pine (*Pinus jeffreyi*) and/or Sierra lodgepole pine (*P. contorta* ssp. *murrayana*). Black oak (*Quercus kelloggii*) may occur at lower elevations, below about 5,600 feet amsl, and it is also associated with sugar pine (*P. lambertiana*) on sunnier sites and with Coulter pine (*P. coulteri*) at lower elevations. These alliances are not considered sensitive biological resources (CDFG 2010).

Great Basin Scrub

The Great Basin scrub general community composes approximately 6.1% (34,371.2 acres) of the Mountain Region and includes six alliances: basin sagebrush, bitterbrush–sagebrush, blackbrush, Great Basin–desert mixed scrub, Great Basin mixed scrub, and rabbitbrush (Table 8). The bitterbrush–sagebrush alliance is considered a sensitive biological resource (CDFG 2010).

Joshua Tree Woodland

This general community composes approximately 0.2% (987.6 acres) of the Mountain Region (Table 8). This community consists of Joshua trees with an open to intermittent tree canopy over an open to intermittent ground layer that may include perennial grasses and seasonal annuals (Sawyer et al. 2009). Joshua trees are a protected resource under the Native Desert Plant Protection section of the existing Development Code and are considered a sensitive community by the County.

Juniper Woodlands

The juniper woodlands general community composes approximately 0.1% (741.0 acres) of the Mountain Region and includes two alliances: California juniper (shrub) and western juniper (Table 8). This community includes California juniper as the dominant or co-dominant small tree in the canopy with a sparse or grassy ground layer. This community occurs on alluvial fans, valley bottoms, slopes, ridges and valleys that contain porous, rocky, coarse, sandy, or silty soils that are often shallow. These alliances are not considered sensitive biological resources (CDFG 2010).

Meadows

This general community composes approximately <0.3% (419.2 acres) of the Mountain Region and includes one alliance: wet meadows (Table 8). This community includes a dense growth of sedges, rushes, perennial grasses such as mat muhly (*Muhlenbergia richardsonis*) and San

Bernardino blue grass (*Poa atropurpurea*), and annual and perennial herbaceous species such as false hellebore (*Veratrum californicum*), clovers (*Trifolium variegatum, T. wormskioldii*), and seep monkeyflower (*Mimulus guttatus*). This community is considered sensitive in the County due to its limited extent and unique habitat value.

Native Grasslands

The native grasslands general community composes approximately <0.1% (413.8 acres) of the Mountain Region and includes one alliance: alkaline mixed grasses (Table 8). This community is considered sensitive in the County due to its limited extent and unique habitat value.

Non-Native Grassland

The non-native grassland general community composes approximately 0.3% (1,777.3 acres) of the Mountain Region and includes two alliances: annual grasses and forbs and perennial grasses and forbs (Table 8). Many non-native grasses occur within this alliance, including species of wild oats (*Avena* spp.), various bromes (*Bromus* spp.), foxtail fescue (*Vulpia myuros*), filaree (*Erodium* spp.), and Kentucky bluegrass (*Poa pratensis*). Perennial grasses such as slender meadow foxtail (*Alopecurus myosuroides*) and tall fescue (*Festuca arundinacea*) may be present with non-native forbs such as strawberry clover (*Trifolium fragiferum*). Some native forbs such as southern mule-ears (*Wyethia ovata*) may be found as well. Some of these areas are currently being used for livestock pasture. Non-native grasslands are not considered a sensitive biological resource (CDFG 2010).

Oak Woodlands and Forests

This general community composes approximately 7.0% (39,248.6 acres) of the Mountain Region and includes six alliances: black oak, canyon live oak, coast live oak, coastal mixed hardwood, interior live oak, and interior mixed hardwood (Table 8). Oak woodlands and forest have oak trees as the dominant or co-dominant tree with a continuous to open canopy and a sparse to intermittent shrub canopy, and sparse or grassy ground layer. This community is considered sensitive in the County due to its limited extent and unique habitat value.

Pine Forests and Woodland

The pine forests and woodland general community composes approximately 27.1% (152,252.7 acres) of the Mountain Region and includes 10 alliances: Coulter pine, eastside pine, Jeffrey pine, knobcone pine, limber pine, lodgepole pine, mixed conifer–pine, Ponderosa pine, singleleaf pinyon, and subalpine conifers (Table 8). The limber pine alliance is considered a sensitive biological resource (CDFG 2010).

Riparian Forest and Woodland

This general community composes approximately 0.3% (1,574.1 acres) of the Mountain Region and includes five alliances: black cottonwood, California sycamore, Fremont cottonwood, riparian mixed hardwood, and white alder (Table 8). The black cottonwood, California sycamore, and Fremont cottonwood alliances are all considered sensitive biological resources (CDFG 2010).

Riparian Scrub

The riparian scrub general community composes approximately 0.1% (685.9 acres) of the Mountain Region and includes four alliances: baccharis (riparian), riparian mixed shrub, willow, and willow (shrub) (Table 8). Some willow alliances are considered sensitive biological resources (CDFG 2010); however, this community is more widespread and regenerates quickly; therefore, is not considered a sensitive community in the County.

Riversidean Alluvial Fan Sage Scrub

The Riversidean alluvial fan sage scrub general community composes approximately 0.5% (2,599.7) of the Mountain Region and includes two alliances: Riversidean alluvial scrub and scalebroom (Table 8). This community is identified by a dominance of scalebroom. Co-dominants may include Eastern Mojave buckwheat, California sagebrush, white sage, *Encelia* spp., *Opuntia* spp., chaparral yucca, *Rhus* spp., and California juniper. Along the desert washes, associated species may include brittlebush, creosote bush, chaparral yucca, rabbitbrush (*Chrysothamnus nauseosus*), big sagebrush (*Artemisia tridentata*), Fremont cottonwood, and desert willow. Scalebroom scrub is a sensitive community (CDFG 2010) and Riversidean alluvial fan sage scrub is considered a sensitive community in the County.

Sonoran and Mojavean Desert Scrub

The Sonoran and Mojavean desert scrub general community composes approximately 1.2% (6,717.3 acres) of the Mountain Region and includes three alliances: creosote bush, desert buckwheat, and desert mixed shrub (Table 8). These alliances are not considered sensitive biological resources (CDFG 2010).

Undifferentiated Chaparral Scrub

The undifferentiated chaparral scrub general community composes approximately 37.4% (210,327.1 acres) of the Mountain Region and includes 13 alliances: birchleaf mountain mahogany, ceanothus mixed chaparral, chamise, curlleaf mountain mahogany, curlleaf

mountain mahogany (tree), lower montane mixed chaparral, manzanita chaparral, scrub oak, semi-desert chaparral, soft scrub mixed chaparral, sumac shrub, Tucker/Muller scrub oak, and upper montane mixed chaparral (Table 8). These alliances are not considered sensitive biological resources (CDFG 2010).

Waterway

Waterways compose approximately 1.2% (7,000.7 acres) of the Mountain Region and include seven various types: agriculture pond or water feature, intermittent lake or pond, intermittent stream channel, perennial lake or pond, reservoir, urban or industrial impoundment, and water (general) (Table 8). Waterways are a land cover and are not considered a sensitive vegetation community; however, waterways often provide valuable water resources which would be considered sensitive on a case by case basis.

5.3.2 Special-Status Species

Within the Mountain Region, the USFWS has designated critical habitat for a number of plant and wildlife species. Table 9 summarizes the acreages of critical habitat in the Mountain Region and the locations are depicted on Figure 11, Critical Habitat – Mountain Region.

Table 9
Acres of Critical Habitat in the Mountain Region

Critical Habitat Species		Total acres in Mountain Region	Acres within County Jurisdiction in Mountain Region
Common Name	*Scientific Name*		
Plants			
ash-gray paintbrush	*Castilleja cinerea*	1,768	1,756
Big Bear Valley sandwort	*Eremogone ursina*	1,412	1,401
California dandelion	*Taraxacum californicum*	1,956	1,945
Cushenbury buckwheat	*Eriogonum ovalifolium* var. *vineum*	4,497	4,497
Cushenbury milk-vetch	*Astragalus albens*	2,232	2,232
Cushenbury oxytheca	*Acanthoscyphus parishii* var. *goodmaniana*	1,887	1,887
Parish's daisy	*Erigeron parishii*	1,603	1,603
San Bernardino blue grass	*Poa atropurpurea*	1,416	1,405
San Bernardino Mountains bladderpod	*Physaria kingii* ssp. *bernardina*	1,026	1,022
southern mountain buckwheat	*Eriogonum kennedyi* var. *austromontanum*	903	892
Wildlife			
arroyo toad	*Anaxyrus californicus*	2,914	2,621
mountain yellow-legged frog	*Rana muscosa*	2,290	2,138

Table 9
Acres of Critical Habitat in the Mountain Region

Critical Habitat Species		Total acres in Mountain Region	Acres within County Jurisdiction in Mountain Region
Common Name	*Scientific Name*		
Santa Ana sucker	*Catostomus santaanae*	226	214
San Bernardino kangaroo rat	*Dipodomys merriami parvus*	1,257	1,129
southwestern willow flycatcher	*Empidonax traillii extimus*	4,524	4,453

Source: USFWS 2015a.

Special-Status Species Occurrence Summary

Appendix C provides a summary of the 138 special-status species that were documented within the Mountain Region of San Bernardino County, and includes information on status, distribution, and habitat associations.

A total of 91 special-status plant species have been documented, including 16 species that are federally listed as endangered or threatened, 6 that are listed as state endangered or rare, and 73 non-listed species. The 17 listed plant species that are known to occur in the Mountain Region are ash-gray paintbrush (FT), Big Bear Valley sandwort (FT), bird-foot checkerbloom (*Sidalcea pedata*) (FE, SE), California dandelion (FE), Cushenbury buckwheat (FE), Cushenbury milk-vetch (FE), Cushenbury oxytheca (FE), Nevin's barberry (*Berberis nevinii*) (FE, CE), Parish's daisy (FT), San Bernardino blue grass (FE), San Bernardino Mountains bladderpod (*Physaria kingii* ssp. *bernardina*) (FE), slender-petaled thelypodium (*Thelypodium stenopetalum*) (FE, SE), southern mountain buckwheat (*Eriogonum kennedyi* var. *austromontanum*) (FT), thread-leaved brodiaea (*Brodiaea filifolia*) (FT, SE), triple-ribbed milk-vetch (FE), Mojave tarplant (SE), and Parish's checkerbloom (*Sidalcea hickmanii* ssp. *parishii*) (California Rare).

A total of 45 special-status animal species have been documented, including 7 species that are federally endangered or threatened, 8 that are state endangered or threatened, 1 that is a state threatened candidate, 6 that are state fully protected, and 30 that are non-listed species. The 7 listed species known to occur in the Mountain Region are arroyo toad (FE), mountain yellow-legged frog (*Rana muscosa*) (FE, SE), least Bell's vireo (nesting) (FE, SE), southwestern willow flycatcher (nesting) (FE, SE), unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*) (FE, SE), southern rubber boa (*Charina umbratica*) (ST), and bald eagle (nesting and wintering) (SE). The state threatened candidate species is Townsend's big-eared bat. The Santa Ana sucker (FT) has been extirpated from the creeks of the Mountain Region, but planning through the Upper Santa Ana River HCP is underway to reintroduce this species to some of its former range.

5.4 Habitat Linkages and Wildlife Corridors

California Essential Habitat Connectivity Project

Within the Mountain Region of San Bernardino County, the California Essential Habitat Connectivity Project identifies the connections between the San Gabriel Mountains, San Bernardino Mountains, and the Little San Bernardino Mountains (Figure 12, Habitat Connectivity – Mountain Region).

South Coast Missing Linkages Project

A summary of the corridors identified as a result of this effort are below and detailed descriptions can be found in South Coast Wildlands (2008).

San Gabriel–San Bernardino Connection. This linkage provides connectivity between two expansive areas of the Angeles and San Bernardino National Forests and includes three roughly parallel swaths through the Cajon Wash and Pass to accommodate diverse species and ecosystem functions. It partially overlaps the Mountain Region of San Bernardino County. This linkage provides habitat for special-status species wildlife such as American badger. I-15 and SR-138 are the major transportation routes that cross the linkage and pose the most substantial barriers to wildlife movement. There are currently three bridges along I-15 that accommodate animal movement.

San Bernardino–Granite Connection. This linkage comprises two main swaths that connect the San Bernardino National Forest with extensive natural lands in the Granite, Ord, and Rodman Mountains, but occurs primarily in the Desert Region.

Los Angeles County

San Bernardino County

San Bernardino County

Riverside County

County of San Bernardino

County of San Bernardino Jurisdiction

Federally Designated Critical Habitat

- Arroyo Toad (*Anaxyrus californicus*)
- Ash-Gray Paintbrush (*Castilleja cinerea*)
- Bear Valley Sandwort (*Arenaria ursina*)
- California Daisy (*Taraxacum californicum*)
- Cushenbury Buckwheat (*Eriogonum ovalifolium*)
- Cushenbury Milk-Vetch (*Astragalus albens*)
- Cushenbury Oxytheca (*Acanthoscyphus parishii* var. *goodmaniana*)
- Mountain Yellow-Legged Frog (*Rana muscosa*)
- Parish's Daisy (*Erigeron parishii*)
- Santa Ana Sucker (*Catostomus santaanae*)
- San Bernardino Blue Grass (*Poa atropurpurea*)
- San Bernardino Kangaroo Rat (*Dipodomys parvus*)
- San Bernardino Mountains Bladderpod (*Physaria kingii* ssp. *bernardina*)
- Southern Mountain Buckwheat (*Eriogonum kennedyi*)
- Southwestern Willow Flycatcher (*Empidonax traillii extimus*)
- Thread-Leaved Brodiaea (*Brodiaea filifolia*)

N

0 2.5 5 Miles

SOURCE: Bing Maps, 2016

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FIGURE 11

Critical Habitat - Mountain Region

San Bernardino Countywide Plan - Biological Resources

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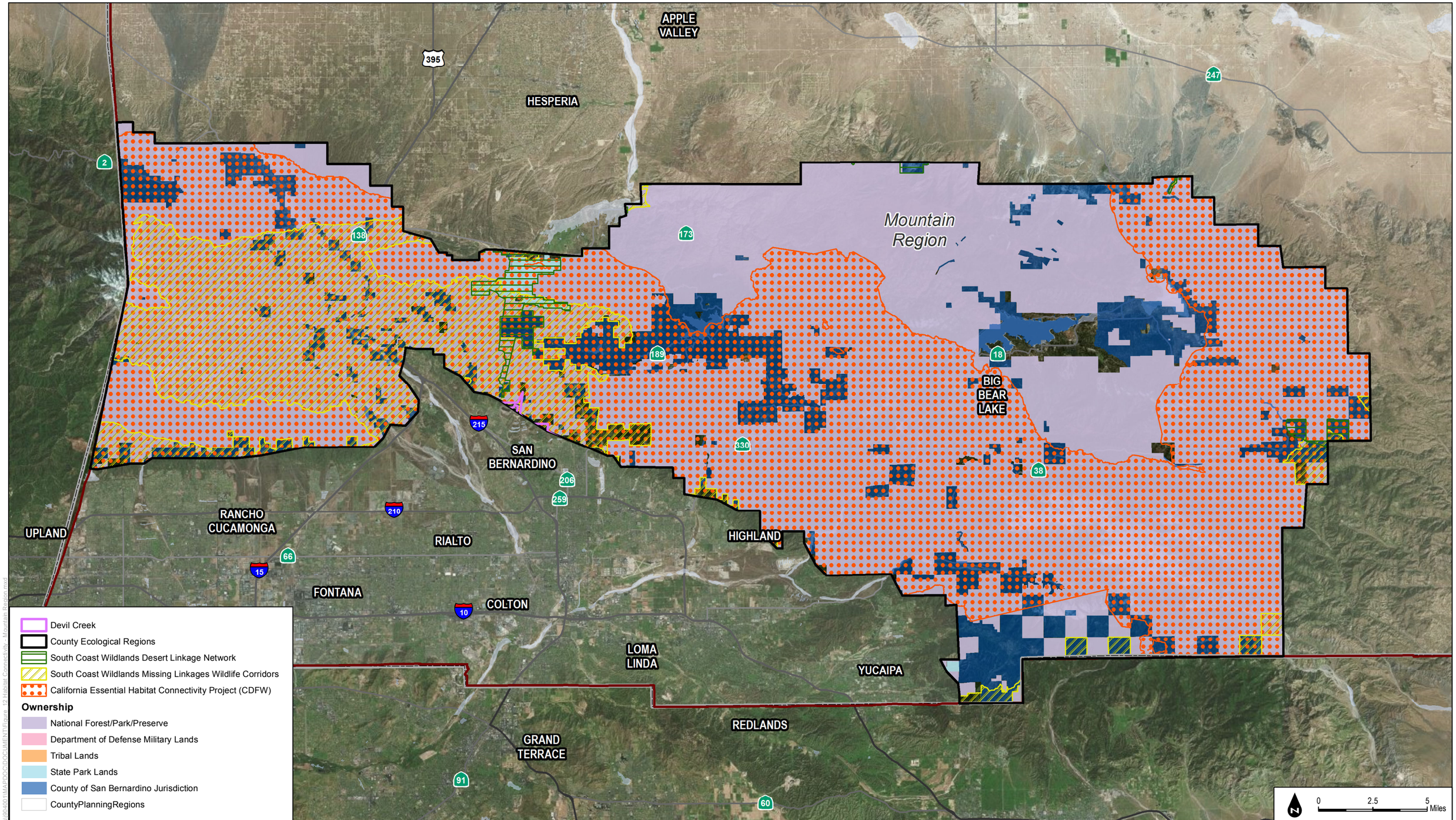

Document Path: Z:\Projects\90400\MAPDOC\DOCUMENT\Figure_12 Habitat Connectivity - Mountain Region.mxd

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SOURCE: BING Maps 2016; USFWS 2016; BLM 2014; South Coast Wildlands 2012; CDFW 2010

FIGURE 12

Habitat Connectivity - Mountain Region

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San Bernardino–Little San Bernardino Connection. This linkage connects San Bernardino National Forest with Joshua Tree National Park and includes five major swaths. It partially overlaps the Mountain Region of San Bernardino County. Species expected to use this linkage include Nelson's bighorn sheep, cougar, bobcat, and gray fox. SR-62 is the major transportation route that crosses the linkage.

San Bernardino–San Jacinto Connection. This linkage comprises five swaths and provides a connection between the San Bernardino and San Jacinto Mountains. It partially occurs within San Bernardino County and the Mountain Region, and does not intersect any major transportation corridors. Species expected to use this linkage include bobcat.

California Desert Connectivity Project

Penrod et al. (2012) discus a multitude of corridors in San Bernardino County that link existing blocks of habitat, including the San Bernardino Mountains to habitat blocks in the Desert Region. This includes linking Pipes Canyon and Little Morongo Creek/Canyon located west of Pioneertown with the Bighorn Mountains and areas further to the north in the Desert Region, such as Homestead Valley further to the Marine Corps Air Ground Combat Center at Twentynine Palms. SR-247 is the major transportation corridor that is crossed.

San Bernardino County Open Space Overlay Map

Figure 13, Existing San Bernardino County Open Space Overlay – Mountain Region, and Table 10 show the features within the San Bernardino County open space overlay map that overlap the Mountain Region within County jurisdiction.

Table 10
San Bernardino County Open Space Overlay Features
in the Mountain Region that Occur within County Jurisdiction

Feature	Type	Acres	Description
Banning Canyon	Wildlife Corridor	508.5	This wildlife corridor follows the length of Banning Canyon from approximately Burnt Canyon to the national forest boundary, ultimately connecting with the South Fork of Whitewater River (Corridor 32). This area contains riparian habitat and a bear population, which use the canyon as a dispersion corridor.
Cajon Wash	Wildlife Corridor	1,957.4	This includes a large area along the Cajon Wash from the confluence with Lytle Creek northward to Mormon Rocks. It supports a wash with associated alluvial fan sage scrub habitat, as well as a stream and associated riparian habitat further upstream. Cajon Wash supports important processes and habitat for species such as San Bernardino kangaroo rat, Santa Ana River woollystar, slender-horned spineflower, cactus wren (*Campylorhynchus brunneicapillus*), and Santa Ana speckled dace. Historically, it supported populations of arroyo toad.

Table 10
San Bernardino County Open Space Overlay Features in the Mountain Region that Occur within County Jurisdiction

Feature	Type	Acres	Description
Cajon Wash Tributary	Wildlife Corridor	76.9	This wildlife corridor, a tributary to Cajon Creek, extends through portions of Sections 22 and 2, R6WT3N, and contains riparian habitat. Private inholdings exist in this area.
City Creek	Wildlife Corridor	190.2	This wildlife corridor follows the alignment of City Creek from its headwaters to the confluence with the Santa Ana River. City Creek contains important riparian and alluvial fan habitat and a link between the national forest and the Santa Ana River. Special-status species that occur in this area include the Santa Ana River woollystar, San Bernardino kangaroo rat, Santa Ana speckled dace, and the mountain yellow-legged frog.
Cleghorn Canyon	Wildlife Corridor	83.5	This corridor extends westward from the Cajon Wash along the alignment of the Cleghorn Canyon, ultimately connecting with the Mojave River Headwaters.
Crowder Canyon	Wildlife Corridor	189.6	This wildlife corridor follows the alignment of Crowder Canyon northward from the junction with Cajon Creek to approximately Summit, and contains riparian habitat and potential habitat for the endangered least Bell's vireo.
Day Canyon	Wildlife Corridor	54.5	Extends northward from the boundary of the national forest along the alignment of Day Canyon where a perennial stream and associated riparian areas occur. This area should extend southward to include associated alluvial fans to maintain a connection for wildlife species, such as mule deer, between lower elevations and higher elevations found within the national forest and existing open space areas, such as Day Creek Preserve and Etiwanda Preserve.
Deep Creek	Wildlife Corridor	804.3	This wildlife corridor originates at approximately 6,200 feet amsl and drops about 3,000 feet in its 22-mile course before flowing into the East Fork Mojave River. It contains riparian habitat, and is occupied by the arroyo toad to approximately 4,300 feet amsl.
Dispersion Corridor	Wildlife Corridor	1,941.9	This wildlife corridor located generally between the urbanized areas of Lake Arrowhead and Running Springs. This area is important as the last major undeveloped portion of the mountain rim, and provides crucial habitat area and dispersion for animals moving between the northern and southern exposure of the national forest.
Dispersion Corridor	Wildlife Corridor	1,118.1	This wildlife corridor is located between the Pisgah Peak area and the boundary of the national forest. This area is important as an area to maintain wildlife dispersion between the Pisgah Peak area and the national forest.
East Etiwanda	Wildlife Corridor	253.2	This wildlife corridor includes the southern portion of Etiwanda Canyon, north of the national forest boundary, where private inholdings exist. The canyon contains a stream and associated riparian habitat. This area should extend southward to include associated alluvial fans to maintain a connection for wildlife species, such as mule deer, between lower elevations and higher elevations found within the national forest and existing open space areas, such as the Etiwanda Preserve.
Grass Valley Creek	Wildlife Corridor	918.7	This wildlife corridor follows the alignment of Grass Valley Creek from the national forest to its junction with the Mojave River. This area contains riparian habitat and serves as wildlife corridor to and from the national forest.

Table 10
San Bernardino County Open Space Overlay Features in the Mountain Region that Occur within County Jurisdiction

Feature	Type	Acres	Description
			It supports habitat for southern rubber boa, California spotted owl (*Strix occidentalis occidentalis*), and San Bernardino flying squirrel (*Glaucomys sabrinus californicus*).
Little Horsethief Canyon	Wildlife Corridor	142.0	This wildlife corridor follows the alignment of Little Horsethief Canyon from Section R6WT3N to the junction with the Mojave River. This is one of the few locations in San Bernardino County occupied by arroyo toad. It also supports important riparian habitat and provides an important linkage to the Mojave River.
Little San Gorgonio	Wildlife Corridor	797.3	This wildlife corridor follows the alignment of Little San Gorgonio Creek from the Riverside County line to the national forest, contains riparian habitat, and contains Pisgah Peak. Open space should be maintained in this corridor to preserve habitat values and a wildlife linkage.
Lone Pine Canyon	Wildlife Corridor	822.5	This wildlife corridor follows the alignment of the Lone Pine Canyon northward from Blue Gut to Clyde Ranch, and contains riparian in its lower half. Deer live in and move through the canyon. This area should be maintained both for its habitat values and as part of a large wildlife linkage to and from the national forest and other open space areas.
Lytle Creek	Wildlife Corridor	512.8	This wildlife corridor follows the alignment of Lytle Creek from the Lytle Creek Gatehouse-Dam, north to the boundary of the national forest, and continuing northward to approximately Miller Narrows. It supports a wash with associated alluvial fan sage scrub habitat, as well as a stream and associated riparian habitat further upstream. Lytle Creek supports important processes and habitat for species such as San Bernardino kangaroo rat, Santa Ana River woollystar, and cactus wren.
Middle Fork Lytle Creek	Wildlife Corridor	49.1	This wildlife corridor follows the alignment of the Middle Fork of Lytle Creek from Miller Narrows northward, an area which contains a stream and associated riparian habitat.
Mill Creek	Wildlife Corridor	1,778.2	This wildlife corridor follows the alignment of Mill Creek from Forest Falls to its confluence with the Santa Ana River. Mill Creek supports riparian and alluvial fan habitat. Special-status species known to occur here include southwestern willow flycatcher and San Bernardino kangaroo rat.
Mojave River	Wildlife Corridor	0.2	This wildlife corridor follows the alignment of the Mojave River from Lake Silverwood to Hesperia. The Mojave River is the major perennial river in the Desert Region, and is an area of extreme biological importance, containing rare desert riparian habitat (including habitat that supports arroyo toad, least Bell's vireo, southwestern willow flycatcher, Mojave river vole, yellow-breasted chat, and summer tanager).
Mojave River Headwaters	Wildlife Corridor	181.3	This wildlife corridor follows the alignment of the Mojave River headwaters from approximately Cleghorn Pass to Lake Silverwood. This area contains riparian habitat, and is used by deer.
North Fork Lytle Creek	Wildlife Corridor	327.2	This wildlife corridor extends northward from Miller Narrows to approximately Chalk Peak. This area contains a stream and associated riparian habitat.

Table 10
San Bernardino County Open Space Overlay Features in the Mountain Region that Occur within County Jurisdiction

Feature	Type	Acres	Description
Pipes Canyon	Wildlife Corridor	480.5	This corridor is located along the alignment of Pipes Canyon and Pipes Wash north of Little Morongo Canyon. This corridor contains important wildlife and riparian habitat particularly on the desert side of the mountains.
Santa Ana River	Wildlife Corridor	1,430.0	This includes the mountain portion of the Santa Ana River within San Bernardino County. In its upper reaches, the river supports wild trout and historically Santa Ana sucker.
Sleepy Creek	Wildlife Corridor	164.7	This corridor follows the alignment of Sleepy Creek within the national forest. Sleepy Creek contains important riparian habitat on the desert side of the mountains.
South Fork Lytle Creek	Wildlife Corridor	49.4	This wildlife corridor follows the alignment of the South Fork of Lytle Creek northward from Miller Narrows into the national forest, and contains riparian habitat.
South Fork Whitewater River	Wildlife Corridor	1,290.9	This corridor follows the alignment of the South Fork of the Whitewater River from approximately Raywood Flat to the national forest boundary. This area provides riparian habitat and supports Nelson's bighorn sheep.
Strawberry Creek	Wildlife Corridor	159.5	This wildlife corridor follows the alignment of Strawberry Creek from approximately the City of San Bernardino northward to the national forest and ultimately connects across the national forest to Grass Valley Creek. This area contains important riparian habitat and historically supported Santa Ana speckled dace. Substantial private ownership occurs along the entire length.
Waterman Canyon	Wildlife Corridor	326.4	This wildlife corridor follows the alignment of Waterman Canyon northward from the city of San Bernardino into the national forest, and contains riparian habitat, as well as a good habitat values for deer.
Baldwin Lake	Policy Area	1,200.4	The North Baldwin Ecological Reserve, owned and managed by CDFG, and the surrounding National Forest System lands lie near the northwest shore of Baldwin Lake at about 7,000 feet amsl. Baldwin Lake provides vernal wet meadow and pebble plain habitat, which supports a number of special-status plant species, as well as endemic butterfly species.
Big Bear Lake Watershed	Policy Area	7,617.6	This area includes the entire watershed of Big Bear Lake, and contains a number of specialized habitat areas, which support a large number of endangered plants and animals (as well as commonly occurring mountain species).
Cajon Pass	Policy Area	158.6	This is the area generally within the Cajon Pass area north of Devore to approximately Mormon Rocks. The Cajon Pass area separates the Angeles and San Bernardino National Forest, and is in an area which animals must cross to travel between forests. This area also contains riparian and alluvial fan sage scrub habitat. It is contiguous with downstream areas occupied by San Bernardino kangaroo rat and provides what may be an important elevation gradient.
Holcomb Valley	Policy Area	591.5	This area is located in the Holcomb Valley, which is part of the Big Bear Lake watershed. Holcomb Valley contains several examples of mountain habitat unique to this area, including pebble plains, which support a variety of endangered species. Habitat values should be maintained, potentially controlling development prevent damage to important habitat areas.

Table 10
San Bernardino County Open Space Overlay Features
in the Mountain Region that Occur within County Jurisdiction

Feature	Type	Acres	Description
Lake Arrowhead	Policy Area	2,302.9	This includes the environs of Lake Arrowhead, which is used as a seasonal perching area by the endangered bald eagle. Substantial private ownership and extensive urbanization have occurred in the area around the lake. Open space objectives for this area include maintaining perching sites and habitat for the bald eagle and habitat values for other species.
Lake Silverwood	Policy Area	7.5	This area encompasses the Lake Silverwood area, which is used as a seasonal perching area by the bald eagle and is part of the overall Mojave River wildlife linkage. This area should be preserved to maintain perching sites for the bald eagle, and habitat values for other species found here.
Limestone Deposits	Policy Area	2,481.8	This encompasses an area of limestone deposits on the northern exposure of the San Bernardino Mountains, roughly from White Mountain to Blackhawk Mountain. This area provides habitat for Nelson's bighorn sheep. The limestone deposits support plants unique to this area.
Pisgah Peak	Policy Area	1,693.8	This area is centered Pisgah Peak and include portions of Sections 33, 34, 35, R1WT1S, and Sections 2, 3, 4, R1WT2S. This area consists of a small mountain range, which supports a diversity of wildlife species, including large mammals. Habitat values here should be maintained.
Shay Meadow	Policy Area	302.9	This area located east of Big Bear and north of the Woodlands area. Shay Meadows is an example of rare wet meadow habitat in the mountain, and supports a variety of endangered plants and animals, including the unarmored threespine stickleback. Sticklebacks currently occupy three isolated ponds in the Shay Creek vicinity: Shay Pond and its satellite pond at Shay Meadows, Sugarloaf Pond, and Juniper Springs (USFWS 2009). Sugarloaf Pond and Juniper Springs occur entirely within San Bernardino National Forest lands and therefore benefit from some habitat protection. The major portion of Shay Creek is located on private land in-holdings within the boundaries of the forest. Current threats to Shay Pond and the surrounding wet-meadows habitat include encroachment by emergent vegetation, loss of natural hydrological regime, decreased water quality, unmanaged use by humans and livestock, and vandalism
Spotted Owl Habitat	Policy Area	2,632.9	This includes of old-growth forest which provide habitat suitable for the southern spotted owl and flying squirrel among other species, and generally occurs around Jobs Peak, Cedarpines Park, Valley of Enchantment, Crestline, and Lake Gregory.

5.5 Protected and Wilderness Areas

Blocks of public/government lands in the Mountain Region of San Bernardino County that afford varying degrees of protection for biological resources are described briefly in this subsection and shown on Figure 14, Conservation and Open Space Areas – Mountain Region.

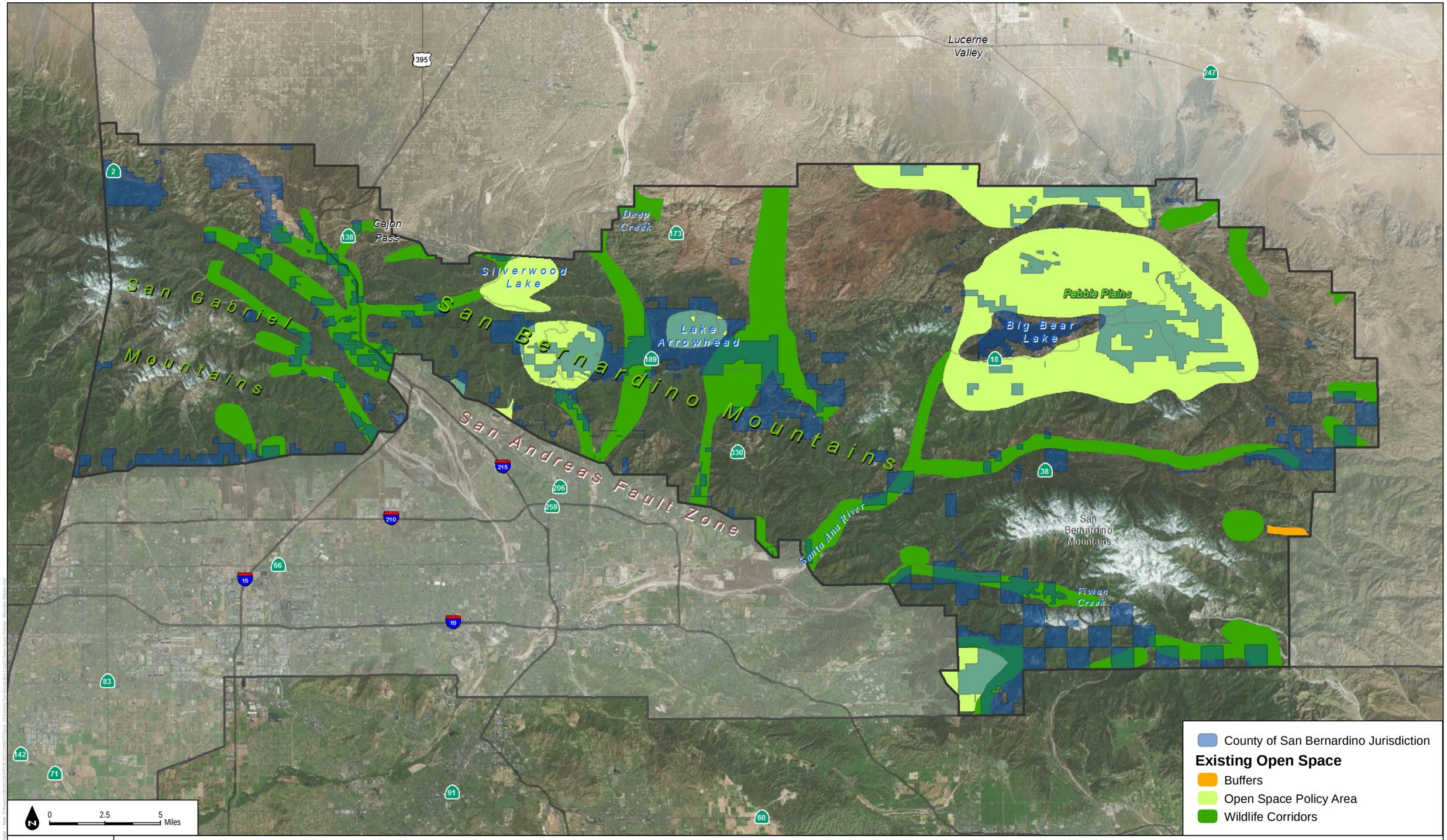
Sand to Snow National Monument

The 154,000-acre Sand to Snow National Monument was designated in February 2016 and extends from BLM lands on the desert floor up to the San Gorgonio Wilderness on the San Bernardino National Forest. A total of 71,000 acres occur in the San Bernardino National Forest and 83,000 acres on BLM lands. Within the monument boundary, approximately 101,000 acres are managed as Wilderness. This monument has a wide range of ecosystems that occur in the Mountain Region of San Bernardino County, including riparian forests, freshwater marshes, meadows, chaparral, and alpine conifer forests. This monument plays an integral role in the San Bernardino–Little San Bernardino Connection, as well as the San Bernardino–San Jacinto Connection.

San Bernardino National Forest

The San Bernardino National Forest is managed by USFS and is composed of three Ranger Districts, two of which are in San Bernardino County: Mountaintop Ranger District and the Front County Ranger District. In San Bernardino County, the San Bernardino National Forest has four designated Wilderness Areas ("where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain ... which is protected and managed to preserve its natural condition." (Wilderness Act 1964)):

- Bighorn Mountain Wilderness (11,800 acres), located northeast of Big Bear Lake in the Mountaintop Ranger District.
- Cucamonga Wilderness (8,581 acres), located east of Mount Baldy in the Front Country Ranger District
- San Gorgonio Wilderness (56,722 acres), located east of Redlands in the Front Country Ranger District
- Sheep Mountain Wilderness (2,401 acres), located south of Wrightwood in the Front Country Ranger District



SOURCE: Bing Maps, 2016

FIGURE 13

Existing San Bernardino County Open Space Overlay - Mountain Region

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San Bernardino Countywide Plan - Biological Resources

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HESPERIA

BIG BEAR LAKE

SAN BERNARDINO

MONGA

RIALTO

HIGHLAND

FONTANA

COLTON

LOMA LINDA

REDLANDS

GRAND TERRACE

YUCAIPA

County of San Bernardino
County of San Bernardino Jurisdiction
Mountain Region
USGS NHD Flowline

Existing Conservation Areas

California Protected Area Database
Wilderness Areas
County Service Area Open Space 120
County Service Area Open Space 70
Angeles National Forest
San Bernardino National Forest

Other Lands

State Park Lands
Flood Control District Easements

N 0 2.5 5 Miles

SOURCE: Bing Maps, 2016; CPAD 2014; USGS, 2012

FIGURE 14

Conservation and Open Space Areas - Mountain Region

DUDEK

San Bernardino Countywide Plan - Biological Resources

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6 EXISTING CONDITIONS—VALLEY REGION

6.1 Valley Region – Executive Summary

The Valley Region is composed of a diverse geography including valleys and foothills. The inland valleys within San Bernardino County are bounded on the northeast and northwest by the San Bernardino and San Gabriel Mountain Ranges. The Valley Region is largely developed with approximately 77% of the area within County jurisdiction either developed or under agricultural uses. Nevertheless, the undeveloped portions of the County provide important biological resources.

There are a number of vegetation communities within the Valley Region which should be a priority for conservation as they are designated sensitive communities and/or provide habitat for special status biological resources. Riversidean alluvial fan sage scrub comprises 18% of the lands in the Valley Region within County jurisdiction and provides habitat for a number of federal and/or state listed threatened or endangered species including San Bernardino kangaroo rat, coastal California gnatcatcher, slender horned spineflower, and Santa Ana River woollystar. The sensitivity of this community combined with the significant area under County jurisdiction makes this community a high priority for management by the County. Major drainages with intact Riversidean alluvial fan sage scrub habitat include the Santa Ana River, Mill Creek, Cajon Wash, and Lytle Creek. Other communities in the Valley Region that have high resource value but low overall acreage and are of high priority for management include riparian and wetland communities, native grasslands, and oak woodland. The Valley Region also supports soils and geomorphological features with high resource value including Delhi sands and clay soils.

Within the Valley Region, the USFWS has designated as critical habitat, for the following federally listed threatened or endangered plant and animal species: arroyo toad, least Bell's vireo, Santa Ana sucker, San Bernardino kangaroo rat, and southwestern willow flycatcher. Critical habitat should be conserved where primary constituent elements are present that are critical to the survival of the species. If a project has a federal nexus, consultation with the USFWS is required prior to impacting critical habitat.

The Valley Region supports a number of special-status species. Development areas should be reviewed for the potential to support a special-status species and impacts to special status-species should be avoided and minimized to the maximum extent practicable. A total of 31 special-status plant species have been documented in the Valley Region, including 3 species that are federally and state listed as endangered or threatened, and 28 non-listed species. A total of 42 special-status animal species have been documented in the Valley Region including 13 state or federally listed, 2 state fully protected, and 24 non-listed species. State and federally listed species known to occur currently in the Valley Region are listed in Table 11.

Table 11
Listed and Fully Protected Species in the Valley Region

Common Name	Scientific Name	Federal Status	State Status
Wildlife Species			
arroyo toad	*Anaxyrus californicus*	FE	SSC
coastal California gnatcatcher	*Polioptila californica californica*	FT	SSC
Delhi sands flower-loving fly	*Rhaphiomidas terminatus abdominalis*	FE	None
golden eagle	*Aquila chrysaetos* (nesting & wintering)	None	FP
least Bell's vireo	*Vireo bellii pusillus* (nesting)	FE	SE
southwestern willow flycatcher	*Empidonax traillii extimus* (nesting)	FE	SE
western yellow billed cuckoo	*Coccyzus americanus occidentalis (nesting)*	FT	SE
Swainson's hawk	*Buteo swainsoni (nesting)*	None	ST
San Bernardino kangaroo rat	*Dipodomys merriami parvus*	FE	SSC
Santa Ana sucker	*Catostomus santaanae*	FT	SSC
Stephens' kangaroo rat	*Dipodomys stephensi*	FE	ST
tricolored blackbird	*Agelaius tricolor* (nesting colony)	None	SC/SSC
white-tailed kite	*Elanus leucurus* (nesting)	None	FP
Plant Species			
Nevin's barberry	*Berberis nevinii*	FE	SE
Santa Ana River woollystar	*Eriastrum densifolium* ssp. *sanctorum*	FE	SE
slender-horned spineflower	*Dodecahema leptoceras*	FE	SE

Notes:
FE: federally listed as endangered
FT: federally listed as threatened
FP: fully protected
SE: state listed as endangered
ST: state listed as threatened
SC: state candidate for listing
SSC: state species of special concern

The majority of the Valley Region is developed with significant open space areas adjacent to the Valley Region including Prado Basin to the southwest and the San Bernardino National Forest to the north. Preserved areas occur at the southwest end of the Valley including the Chino Preserve and Chino Hills Open Space, at the eastern end is the Crafton Hills Open Space, and to the north is Cajon Pass. Wildlife movement through the Valley Region would primarily be accommodated along existing waterways and riparian corridors including the Santa Ana River, Cajon Wash, Lytle Creek, Live Oak Canyon, and San Timoteo Canyon. These areas should be high priority for management for wildlife movement and habitat connectivity.

6.2 Physical Conditions

Physical conditions across the landscape play important roles in the distribution of biological resources. The following subsections provide an overview of some key physical characteristics within the Valley Region of San Bernardino County (depicted on Figure 15, Geomorphic Features – Valley Region).

6.2.1 Climate

The Valley Region falls within a Mediterranean climate, with hot and dry summers and cool winters. Winters can be colder than other areas within the Southern California region; morning frost is a common occurrence, with rare snow flurries. Summers are very hot, with numerous days over 100°F. Within the Valley Region, the City of San Bernardino receives an average of 16 inches of rain annually, with most of the rainfall occurring November through April and occasional thunderstorms during the summer months. The Santa Ana winds are common within the Valley Region, as warm and dry winds blow from the desert in the east.

6.2.2 Soils

The Valley Region has soil types that are primarily composed of alluvial deposits with several areas of dune sand (USDA 2015). Soil types critical to the cultivation of sensitive environmental resources are outlined in this section.

Alluvial Fans

Alluvial deposits and active fluvial processes in the Valley Region, along with their associated vegetation, form one of the most imperiled communities in Southern California. An alluvial fan is a fan-shaped landform that forms at the base of steep mountains where valleys and canyons meet. This feature is typically created by the buildup of stream sediments and debris flows (Harden 2004). When viewed aerially, the fan's apex is typically at the mouth of a stream source running down a mountain before it spreads outward into the valley like an open fan. Three phases of vegetation associated with alluvial fans have been recognized based on differences in flooding frequency and intensity: pioneer, intermediate, and mature.

The most frequently flooded areas tend to be located adjacent to the active creek channel and are where early successional (or pioneer) plant species tend to establish and dominate the landscape. Vegetation tends to be sparse and of low species diversity and stature (Hanes et al. 1989, as cited in USFWS 2010a) and soils are characterized by high sand and low organic and clay content. Total vegetative cover in a pioneer phase ranges from 1% to 48% (Smith 1980; Wheeler 1991; both as cited in USFWS 2010a) and lasts approximately 30–40 years after flooding (Smith 1980,

as cited in USFWS 2010a). Special-status species associated with the pioneer stage of alluvial fans include Santa Ana River woollystar, San Bernardino kangaroo rat, San Diego black-tailed jackrabbit, and California glossy snake.

Areas at mid-elevated locations above the active floodplain (or terraces) tend to be much less frequently flooded and support mid-successional (or intermediate) plant species. Vegetation can be rather dense and is composed mainly of subshrubs (Hanes et al. 1989, as cited in USFWS 2010a), and open areas may have cryptogrammic crusts (Burk et al. 2007). Total vegetative cover in an intermediate phase ranges from 49% to 65% (Smith 1980, as cited in USFWS 2010a) and lasts approximately 40–70 years after flooding (Smith 1980, as cited in USFWS 2010a; Burk et al. 2007). Special-status species associated with the intermediate stage of alluvial fans include slender-horned spineflower and San Bernardino kangaroo rat.

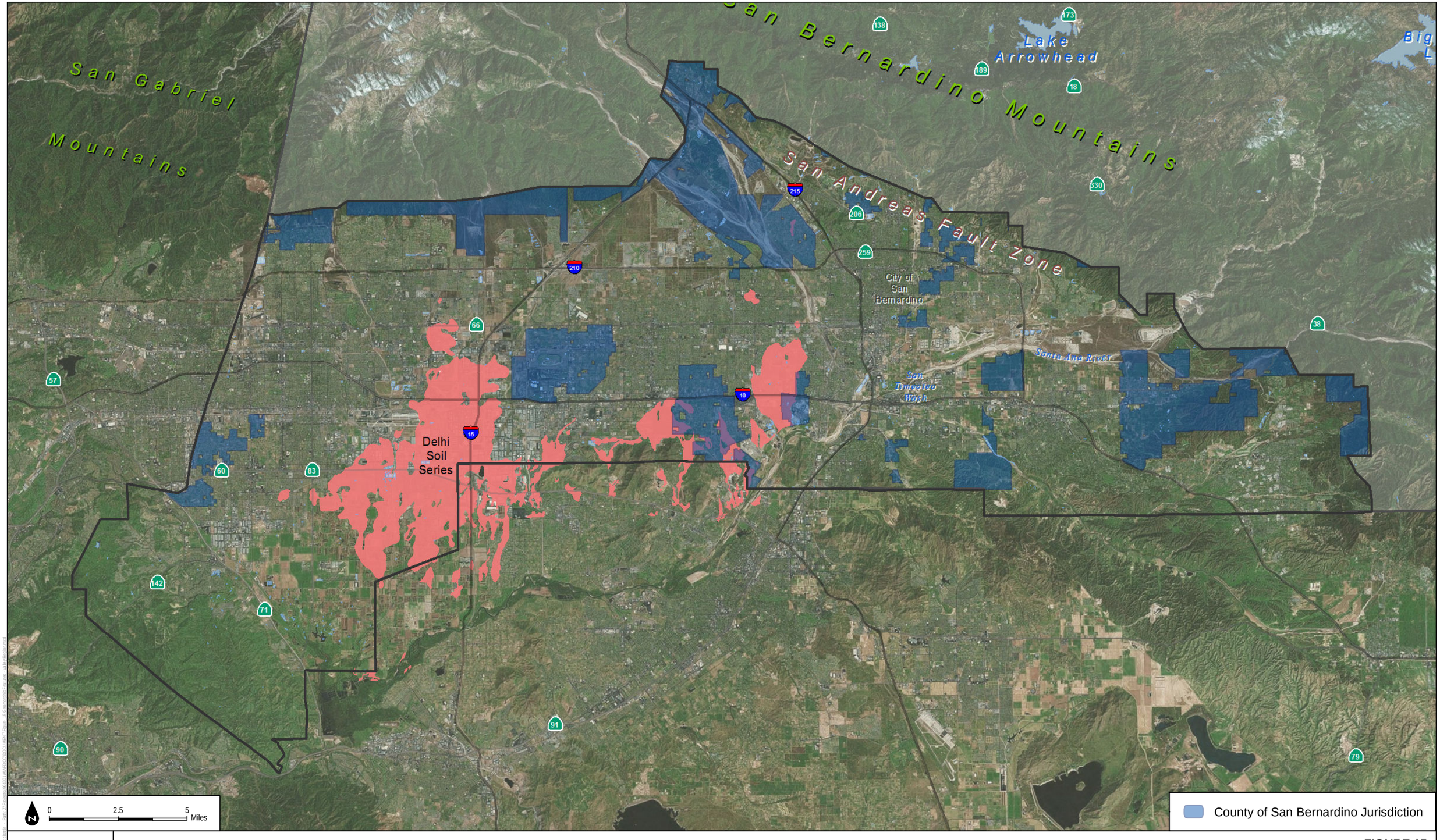
The highest elevated terraces are where flooding only occurs during extreme and rare events and supports late-successional (or mature) plant species. Vegetation is dense and is composed of fully developed subshrubs and woody shrubs (Hanes et al. 1989, as cited in USFWS 2010a). Total vegetative cover in the mature phase ranges from 66% to 88% (Smith 1980, as cited in USFWS 2010a) and lasts approximately 70+ years after flooding (Burk et al. 2007). Special-status species associated with the mature stage of alluvial fans include California gnatcatcher and cactus wren.

Delhi Soil Series

The Colton Dunes (composed of the Delhi soil series) once covered approximately 40 square miles in northwestern Riverside and southwestern San Bernardino counties in Southern California (USFWS 1997). Currently, they only occur in fragmented sections, likely disconnected from wind-blown sand sources that created and maintained the Colton Dunes ecosystem. The Delhi soil series is found in the southern portion of the valley, particularly within the cities of Colton, Rialto, and Fontana. The Delhi soil series is required habitat for the endemic Delhi sands flower-loving fly, a federally endangered species.

Clay Soils

Clay or clay loam soils occur in the southwestern portion of the Valley Region, where it abuts Riverside County. These soils are characterized by more impervious substrate with higher water retention. A common feature of this soil type is vernal pools, which can lead to presence of fairy shrimp species and vernal pool plants, some of which are listed threatened or endangered.



SOURCE: Bing Maps, 2016

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FIGURE 15

Geomorphic Features - Valley Region

San Bernardino Countywide Plan - Biological Resources

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6.2.3 Topography and Geomorphology

The Valley Region is composed of a diverse geography including valleys and foothills. The inland valleys within San Bernardino County are bounded on the northeast and northwest by the San Bernardino and San Gabriel Mountain Ranges. Associated with many mountain ranges are alluvial fans, which is a fan-shaped landform that forms along the base of a mountain front by the buildup of stream sediments and debris flows (Harden 2004). Large, coalescing alluvial fans contain numerous washes called bajadas. Elevation within the heavily urbanized valley/foothills ranges from 700 feet amsl near Rancho Cucamonga to around 4,000 feet amsl near Yucaipa.

6.2.4 Hydrology

The dominant aquatic feature within the Valley Region is the Santa Ana River watershed. The upstream reaches are located within San Bernardino County. Key tributaries within the area include City Creek, Day Creek, Etiwanda Creek, Plunge Creek, San Sevaine Creek, Lytle Creek, Cajon Wash, San Timoteo Wash, and Mill Creek.

Santa Ana River

The Santa Ana River is the largest river fully contained within Southern California. It begins in the San Bernardino Mountains before passing through Seven Oaks Dam at the foothills. The river then heads 96 miles to the Pacific Ocean, alternating between being held in its natural state and being contained in flood control channels.

Day Creek

Day Creek collects runoff from Cucamonga Peak before running south through the Valley Region. Its flows form an alluvial fan at the base of the San Bernardino Mountains before the creek passes through the City of Rancho Cucamonga. It is then channelized and runs through several basins as it runs south into Riverside County before flowing into the Santa Ana River.

Etiwanda Creek

Etiwanda Creek drains runoff from the San Bernardino Mountains while heading south through the Town of Etiwanda, where it becomes channelized. It flows south into Riverside County and then flows into the Santa Ana River.

San Sevaine Creek

San Sevaine Creek originates in the San Bernardino Mountains and runs south into the Town of Etiwanda. It runs parallel to Etiwanda Creek as they both travel south into Riverside County before flowing into the Santa Ana River.

City Creek

City Creek originates in the San Bernardino Mountains and runs through the foothills in the City of Highland. It flows south before joining Plunge Creek. They both reach a confluence with the Santa Ana River just west of the I-210.

Plunge Creek

Plunge Creek originates in the San Bernardino Mountains and runs west through the City of Highland before its confluence with the Santa Ana River, just west of the I-210.

Lytle Creek

Lytle Creek begins in the San Bernardino Mountains and moves southeast into the Valley Region. Its flows form an alluvial fan at the foothills of the mountains before becoming channelized as it passes through the City of Colton. It then continues south before connecting with the Santa Ana River.

Cajon Wash

Cajon Wash carries flows from Cajon Canyon, which carries runoff from both the San Bernardino Mountains and the Cucamonga Wilderness. The Cajon Wash then merges with Lytle Creek over the alluvial fan before Lytle Creek terminates at the Santa Ana River.

San Timoteo Wash

San Timoteo Wash originates in Riverside County where it collects runoff from the Badlands, south of the City of Redlands. It carries the stream northwest into the Valley Region of San Bernardino County before connecting with the Santa Ana River.

Mill Creek

Mill Creek collects runoff from the Angelus Oaks Mountains before heading southwest through the unincorporated area of Mentone. It then flows west into the Santa Ana River.

6.3 Biological Conditions

The following subsections provide a detailed description of the special-status plant and wildlife species and vegetation communities that occur in the Valley Region of San Bernardino County.

6.3.1 Vegetation Communities and Land Covers

The following identifies the vegetation communities and land covers mapped in the Valley Region of San Bernardino County. Table 12 provides a list of the vegetation communities and land covers occurring within the Valley Region. The geographic extent of vegetation communities in the Valley Region is depicted on Figure 16, Vegetation Communities and Land Covers – Valley Region. Appendix A describes each vegetation community and land cover in more detail. The CALVEG categories were cross-walked with alliances from the Manual of California Vegetation (Sawyer et al. 2009). This listing and the associated sensitivity status of each alliance can be found in Appendix B.

Table 12
Vegetation Communities and Other Land Covers
within the Valley Region of San Bernardino County

	Acres within County Boundary	% within County Boundary	Acres Within County Jurisdiction	% within County Jurisdiction
Agriculture				
Agriculture	18,415.25	6.77%	2,659.99	6.37%
Developed and Disturbed Areas	70.53	0.03%	31.09	0.07%
Nurseries	4.85	0.00%	0.00	0.00%
Orchard Agriculture	455.90	0.17%	115.87	0.28%
Pastures and Crop Agriculture	1,156.42	0.43%	17.83	0.04%
Tilled Earth	48.90	0.02%	2.26	0.01%
Vineyard - Shrub Agriculture	3.60	0.00%	0.00	0.00%
Subtotal	*20,155.46*	*7.41%*	*2,827.05*	*6.77%*
Barren				
Barren	440.57	0.16%	77.63	0.19%
Subtotal	*440.57*	*0.16%*	*77.63*	*0.19%*
Coastal Montane Douglas-fir Forests and Woodlands				
Bigcone Douglas-Fir	9.53	0.00%	0.00	0.00%
Subtotal	*9.53*	*0.00%*	*0.00*	*0.00%*
Coastal Scrub				
Buckwheat	6,585.23	2.42%	1,848.02	4.42%
California Sagebrush	7,609.03	2.80%	1,845.44	4.42%
Coastal Cactus	93.04	0.03%	0.00	0.00%

Table 12
Vegetation Communities and Other Land Covers within the Valley Region of San Bernardino County

	Acres within County Boundary	% within County Boundary	Acres Within County Jurisdiction	% within County Jurisdiction
Encelia Scrub	1,532.98	0.56%	44.60	0.11%
Subtotal	*15,820.28*	*5.82%*	*3,738.07*	*8.95%*
Developed and Disturbed Areas				
Developed and Disturbed Areas	6,011.69	2.21%	102.74	0.25%
Non-Native/Ornamental Conifer	3.27	0.00%	1.00	0.00%
Non-Native/Ornamental Conifer/Hardwood	78.74	0.03%	3.94	0.01%
Non-Native/Ornamental Grass	713.04	0.26%	3.48	0.01%
Non-Native/Ornamental Hardwood	174.97	0.06%	17.67	0.04%
Non-Native/Ornamental Shrub	102.22	0.04%	1.08	0.00%
Urban/Developed (General)	151,571.03	55.73%	18,112.80	43.36%
Urban-related Bare Soil	6,029.21	2.22%	1,229.24	2.94%
Subtotal	*164,684.17*	*60.55%*	*19,471.96*	*46.61%*
Eucalyptus Naturalized Forest				
Eucalyptus	155.13	0.06%	17.31	0.04%
Subtotal	*155.13*	*0.06%*	*17.31*	*0.04%*
Juniper Woodlands				
California Juniper (shrub)	64.06	0.02%	13.26	0.03%
Subtotal	*64.06*	*0.02%*	*13.26*	*0.03%*
Marsh				
Tule - Cattail	10.12	0.00%	0.00	0.00%
Subtotal	*10.12*	*0.00%*	*0.00*	*0.00%*
Meadows				
Wet Meadows	93.09	0.03%	0.00	0.00%
Subtotal	*93.09*	*0.03%*	*0.00*	*0.00%*
Native Grasslands				
Alkaline Mixed Grasses	545.66	0.20%	167.90	0.40%
Subtotal	*545.66*	*0.20%*	*167.90*	*0.40%*
Non-Native Grassland				
Annual Grasses and Forbs	34,207.12	12.58%	3,506.49	8.39%
Developed and Disturbed Areas	18.63	0.01%	0.00	0.00%
Non-Native/Invasive Grass	160.16	0.06%	0.00	0.00%
Perennial Grasses and Forbs	165.31	0.06%	0.00	0.00%
Subtotal	*34,551.22*	*12.70%*	*3,506.49*	*8.39%*
Oak Woodlands and Forests				
Canyon Live Oak	151.41	0.06%	106.13	0.25%
Coast Live Oak	1,584.58	0.58%	95.51	0.23%

Table 12
Vegetation Communities and Other Land Covers within the Valley Region of San Bernardino County

	Acres within County Boundary	% within County Boundary	Acres Within County Jurisdiction	% within County Jurisdiction
Coastal Mixed Hardwood	219.77	0.08%	0.00	0.00%
Interior Mixed Hardwood	36.50	0.01%	20.86	0.05%
Subtotal	*1,992.26*	*0.73%*	*222.50*	*0.53%*
Pine Forests and Woodland				
Coulter Pine	14.29	0.01%	0.00	0.00%
Subtotal	*14.29*	*0.01%*	*0.00*	*0.00%*
Riparian Forest and Woodland				
California Sycamore	70.82	0.03%	21.13	0.05%
Fremont Cottonwood	28.56	0.01%	0.00	0.00%
Riparian Mixed Hardwood	308.45	0.11%	104.07	0.25%
Subtotal	*407.83*	*0.15%*	*125.20*	*0.30%*
Riparian Scrub				
Baccharis (Riparian)	69.95	0.03%	18.91	0.05%
Fan Palm	0.28	0.00%	0.00	0.00%
Riparian Mixed Shrub	10.45	0.00%	0.00	0.00%
Willow	647.50	0.24%	0.00	0.00%
Willow (Shrub)	127.99	0.05%	0.00	0.00%
Subtotal	*856.18*	*0.31%*	*18.91*	*0.05%*
Riversidean Alluvial Fan Sage Scrub				
Riversidean Alluvial Scrub	13,064.72	4.80%	4,269.87	10.22%
Scalebroom	4,371.02	1.61%	1,297.26	3.11%
Subtotal	*17,435.74*	*6.41%*	*5,567.13*	*13.33%*
Undifferentiated Chaparral Scrub				
Ceanothus Mixed Chaparral	2,730.06	1.00%	2,333.05	5.58%
Chamise	2,760.22	1.01%	378.80	0.91%
Lower Montane Mixed Chaparral	3,891.95	1.43%	2,174.48	5.20%
Scrub Oak	1,220.30	0.45%	480.67	1.15%
Soft Scrub Mixed Chaparral	1,056.92	0.39%	397.31	0.95%
Sumac Shrub	1,502.21	0.55%	77.05	0.18%
Subtotal	*13,161.66*	*4.84%*	*5,841.36*	*13.98%*
Upland Walnut Woodlands and Forests				
California Walnut	277.78	0.10%	0.00	0.00%
Subtotal	*277.78*	*0.10%*	*0.00*	*0.00%*
Waterway				
Agriculture Pond or Water Feature	136.31	0.05%	1.39	0.00%
Intermittent Lake or Pond	43.22	0.02%	1.88	0.00%

Table 12
Vegetation Communities and Other Land Covers
within the Valley Region of San Bernardino County

	Acres within County Boundary	% within County Boundary	Acres Within County Jurisdiction	% within County Jurisdiction
Intermittent Stream Channel	97.96	0.04%	54.77	0.13%
Perennial Lake or Pond	35.77	0.01%	1.23	0.00%
Reservoir	2.50	0.00%	0.00	0.00%
River/Stream/Canal	206.92	0.08%	0.00	0.00%
Urban or Industrial Impoundment	110.29	0.04%	24.41	0.06%
Water (General)	632.14	0.23%	98.40	0.24%
Waterway	40.72	0.01%	0.00	0.00%
Subtotal	*1,305.82*	*0.48%*	*182.07*	*0.44%*
Grand Total	**271,980.84**		**41,776.85**	

Note: Table updated March 2019

Agriculture

Agricultural land composes approximately 6.8% (21,271.1 acres) of the Valley Region and includes the following agricultural types: agriculture (general), nurseries, orchard agriculture, pastures and crop agriculture, tilled earth, and vineyard–shrub agriculture (Table 12). Agricultural lands are not considered a sensitive biological resource (CDFG 2010).

Barren

Barren lands compose a very small portion of the Valley Region and cover approximately 0.1% (468.1 acres) (Table 12). Barren lands are not considered a sensitive biological resource (CDFG 2010).

Coastal Montane Douglas-Fir Forests and Woodlands

Coastal montane Douglas-fir forests and woodlands general community compose <0.1% (9.8 acres) of the Valley Region, with one alliance: bigcone Douglas-fir (Table 12). Bigcone Douglas-fir alliance is considered a sensitive biological resource (CDFG 2010).

Coastal Scrub

The coastal scrub general community composes approximately 5.2% (16,380.4 acres) of the Valley Region and includes four alliances: buckwheat, California sagebrush, coastal cactus, and encelia scrub (Table 12). The coastal cactus alliance is considered a sensitive biological resource (CDFG 2010).

Developed and Disturbed Areas

Developed and disturbed areas compose approximately 64% (202,397.4 acres) of the Valley Region and include seven types: non-native/ornamental conifer, non-native ornamental conifer/ hardwood, non-native/ornamental grass, non-native ornamental hardwood, non-native/ornamental shrub, urban/developed (general), and urban-related bare soil (Table 12). Developed and disturbed areas are not considered a sensitive biological resource (CDFG 2010).

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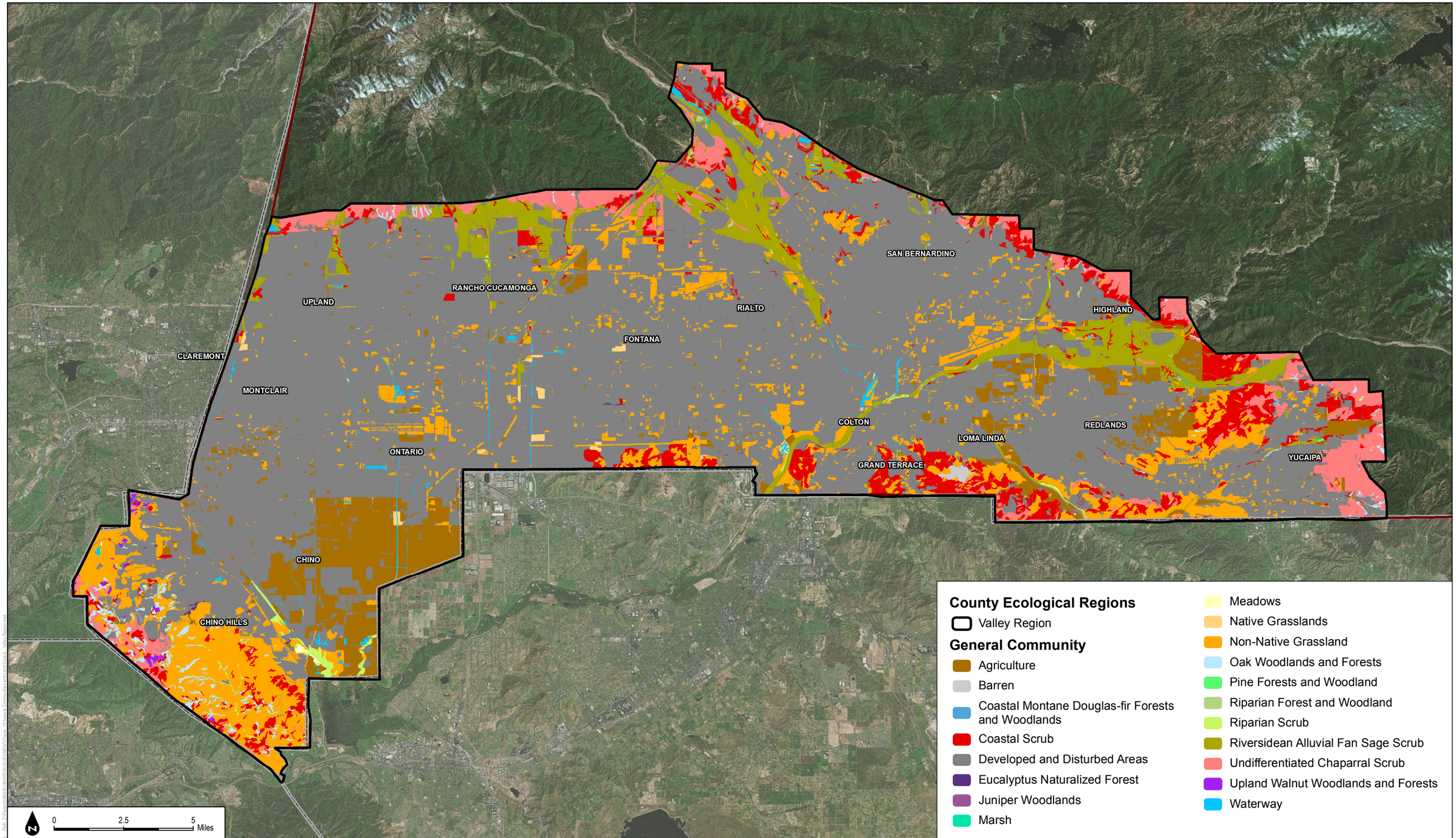

SOURCE: Bing Maps, 2015; CDFG, 2015

FIGURE 16

Vegetation Communities and Land Covers - Valley Region

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San Bernardino Countywide Plan – Biological Resources

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Eucalyptus Naturalized Forest

Eucalyptus naturalized forest composes approximately 0.1% (179.7 acres) of the Valley Region (Table 12). These are dense, pure stands of multiple species of *Eucalyptus*, including blue gum, red gum, silver gum, and forest red gum. Naturalization has occurred in disturbed areas, augmented by the ability of this genus to resprout after disturbance. This community is typically adjacent to urban areas and non-native grasses. Eucalyptus naturalized forest is not considered a sensitive biological resource (CDFG 2010).

Juniper Woodlands

The juniper woodlands general community composes <0.1% (66.2 acres) of the Valley Region and includes one alliance: California juniper (shrub) (Table 12). This community includes California juniper as the dominant or co-dominant small tree in the canopy with a sparse or grassy ground layer. This community occurs on alluvial fans, valley bottoms, slopes, ridges and valleys that contain porous, rocky, coarse, sandy or silty soils that are often shallow. California juniper (shrub) alliance is not considered a sensitive biological resource (CDFG 2010).

Marsh

This general community composes approximately <0.1% (10.1 acres) of the Valley Region and includes one alliance: tule–cattail (Table 12). Cattail or tule marshes occur near lakes and springs dominated by sedges, tules, cattails, and spikerushes. Cattail or tule marshes are not a sensitive community (CDFG 2010); however, marshes are a wetland habitat type with limited distribution and are, therefore, considered a sensitive biological resource.

Meadows

This general community composes approximately <0.1% (93.9 acres) of the Valley Region and includes one alliance: wet meadows (Table 12). This community includes a dense growth of sedges, rushes, perennial grasses such as mat muhly and San Bernardino blue grass, and annual and perennial herbaceous species such as false hellebore, clovers, and seep monkeyflower. This community is considered sensitive in the County due to its limited extent and unique habitat value.

Native Grasslands

The native grasslands general community composes approximately 0.2% (559.9 acres) of the Valley Region and includes one alliance: alkaline mixed grasses (Table 12). This community is considered sensitive in the County due to its limited extent and unique habitat value.