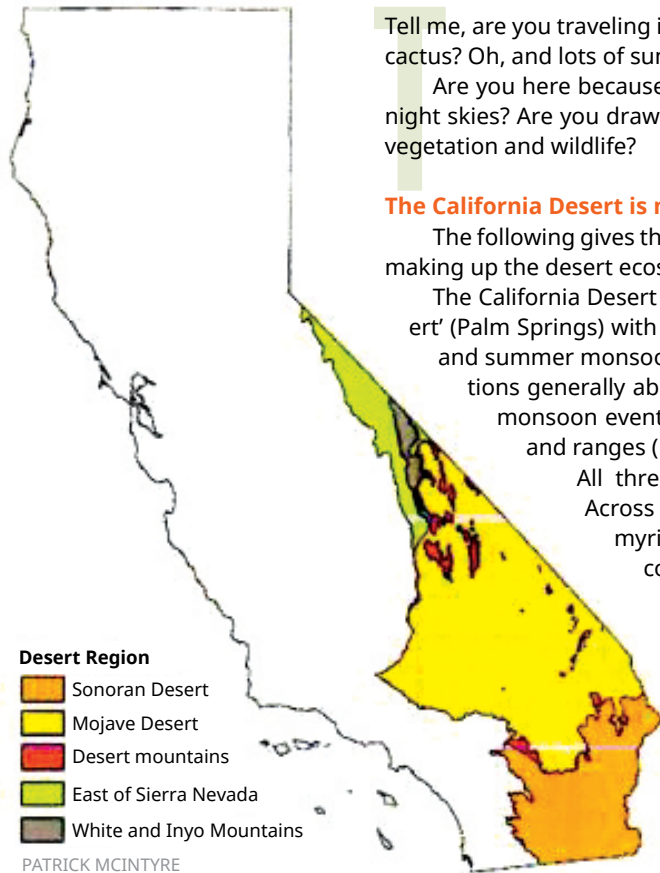


BY PAT FLANAGAN

CALIFORNIA DESERT BY THE NUMBERS



Tell me, are you traveling into the California Desert believing there is nothing out here but snakes and cactus? Oh, and lots of sun.

Are you here because you crave the natural quiet, the sounds of nature, and the star-filled dark night skies? Are you drawn to the open and empty simplicity of this landscape with its often strange vegetation and wildlife?

The California Desert is many things - except empty and simple.

The following gives the numbers of things - the mountains and basins, and the plants and animals making up the desert ecosystems. This accounting is given to tantalize your mind to what is here.

The California Desert is actually three deserts: the Sonoran-Colorado (orange) - the hot 'low desert' (Palm Springs) with elevations generally under 1000 feet and precipitation from winter storms and summer monsoons; the Mojave Desert (yellow) - the hot 'high desert' (29 Palms) with elevations generally above 2,000 feet and rain during the winter months with occasional summer monsoon events; and the Great Basin Desert (purple and green) - a cold desert of basins and ranges (Death Valley National Park) receiving winter rain and snow.

All three deserts are climatologically, topographically and geologically diverse. Across the skin of the desert there are "more than 100 major mountain ranges, myriad canyons, playas, alkali meadows, badlands, and sprawling sand dune complexes."¹

In all, the California Deserts make up 28% of the State of California's land area and contain 38% of the native plant species within the state. This California Desert is the largest intact ecosystem in the continental United States.

Currently in the California Desert there are 2,450 native plant species (25% are endemic to the desert) and the number is growing with continuing exploration. Only 8% are non-native plant species, dwarfed by the more than 20% invasives for the rest of the state. If the California Desert region were a state it would rank #18/50 in total vascular plant diversity. And, the state of California is a Biodiversity Hotspot of global significance.²

The California Desert region and it's major components

What do all these green plants nourish as they travel up the desert food chain?³



Native Fish: 16 species (6 families)



Native Amphibians: 16 species (5 families) (salamanders and toads)

Insects and spiders and microbes: so many to count. Example - Native Bee pollinators in Joshua Tree NP: 500-600 species representing 40 genera in 6 (of 7 total) families. There are 15 species of the genus Anthophora. Bees love the desert and its variety of wildflowers.⁴



Birds: 425 species (59 families)
(year-around, breeding and migratory species)

Native Reptiles: 56 species (15 families)
(snakes, lizards, and desert tortoise)



Native Mammals: 93 species



Bats: 20 species (3 families)

Insectivores: 7 species (2 families)
(moles and shrews)



Lagomorphs: 4 species (2 families)
(rabbits and hares)



Non-native mammals:
4 species (3 families)
Virginia opossum,
Rocky Mountain mule
deer, horses, burros



Carnivores: 12 species (5 families)
(foxes, bears, raccoons, cats, and dogs)



Rodents: 48 species (6 families)



Even-toed mammals: 2 species (2 families)
(deer and sheep)

How come, if there are so many plants and animals in the desert you don't see them?

Hard to say. This scarcity is more than learning how to look beyond our preconceived notions. Or even learning how to move quietly and slowly. Since we are playing a numbers game, recall that although there are lots of species in many different families of plants and animals, there may not be many of any one particular kind. For instance, there should be at least 10 times more prey than predators in a functioning ecosystem. Predator species and numbers are rare. Or, there may be so many of one thing, such as fields of blooming wildflowers, you are blinded to all else. Plant and animal species are not spaced uniformly over the landscape. Recall the 100 + mountain ranges, canyons, playas, meadows, badlands, and sand dunes – never mind soils, microclimates, and niches – the variation and extremes are great. There are so many ways to live out here – to stay cool (or warm), hydrated, fed, and reproducing – above ground or below, in the daytime or in the night, out for long periods or short. Dress can be neutral and hiding or bright and warning. Is it time to be out courting, or raising young, or resting until the next round? If you are on the hunt, study up. Take classes: <http://www.joshuatree.org/desert-institute/>. Check out the books in the National Park Visitor Centers and information on the web. Worth the investment are: *The California Deserts – An Ecological Rediscovery* by Bruce M. Pavlick and *California Desert Flowers – An Introduction to Families, Genera, and Species* by Sia and Emil Morhardt, both from University of California Press. Get out and on the ground. Look closely. Be patient. Good luck seeing stuff. You know it is neither empty nor simple out there.

Compiled for the 29 Palms Inn, The Campbell House (formerly the Roughley Manor), and interested desert residents and travelers.

(1) Quote and following statistics are from the two articles on plant diversity by James M. Andre, and Kara A. Moore and James A. Andre in *FREMONTIA* Vol. 42, No. 1, January 2014. *California Deserts, Part 1 Biology and Ecology*.

(2) <http://www.calacademy.org/explore-science/biodiversity-hotspot-case-study-california>

(3) *The California Desert: An Introduction to Natural Resources and Man's Impact*. Editors June Latting and Peter Rowlands. 1995.

(4) Thank you PhD candidate Michael Orr for your research presentation on 8/2/2016 at the Black Rock Visitor Center, JTNP.

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