Desert Chaparral

Edge places — places that cannot be identified as belonging to established stereotypes. They’re not neat. Unusual things live there. Unusual things happen there. Diversity is the norm. They make people nervous. They are also the best places to discover new things, to discover what evolution has wrought. Edges are the haunts of iconoclasts like Arthur Rimbaud, Charles Bukowski, and Ed Abbey, as well as iconic species like roadrunners, coyotes, and manzanita.

Edges define both social and natural places. Consider Naples, Italy, stuck in between the living vibrancy of modern Rome and the encased ghosts of Pompeii — gritty, home to more than a hundred crime clans, and the place where pizza became pizza. Or take the space between pond and air where the water strider lives. Skating around like it does, defying convention. Does it belong to the water or the air? It’s about as close to a cross-dimensional animal that you’ll ever see.

Then there is desert chaparral, interior chaparral. A place of neither cactus nor dense shrubbery, it exists in a narrow band where water teases life. Nature provides just enough moisture to keep green leaves attached, mostly, and prevents the complete annexation by creosote and thorn.

Desert chaparral is one of the most restricted and fragile native shrubland habitats in the West. Found along the eastern edges of mountains that lose their way into the Mojave Desert, along the Mogollon Rim in the Sonoran Desert, and on sky islands in the Catalina Mountains above Tucson, Arizona, desert chaparral is accessible. Unlike its dense cousin on the coastal ranges, its more open nature allows a hiker to walk through it without coming out bleeding.

Desert chaparral is fragile because of water, or rather the lack thereof. When northern forests are disturbed by fire or logging (if natural succession is allowed to proceed), the plentiful rainfall allows trees to come back. When coastal and montane chaparral burns within its natural fire regime (high severity fire with a return interval greater than 30 years), there is usually enough moisture for the system to reach a closed canopy condition within a decade and a half.

But desert chaparral is not so resilient to disturbance. It takes many decades for the system to recover. With an increase in ignitions by careless humans and the associated spread of highly flammable, non-native weeds like foxtails (Bromus species) and Sahara mustard (Brassica tournefortii), desert chaparral is extremely susceptible to damage at the hand of ignorance.

Unfortunately, the fragility of desert chaparral is not adequately appreciated by some.

Continued on page 12
Desert Chaparral

Continued from page 4

who are charged with protecting it, a consequence of misunderstandings concerning the system’s sensitivity to fire. A trail side sign at one notable California State Park suggests that old-growth desert chaparral is “unproductive” and “needs” to burn. Productivity has traditionally meant more forage to support more deer for more hunters. Another sign at a desert museum in Arizona claims desert chaparral will be replaced by woodland if fires do not “sweep through the area every few decades.” Replaced by woodland in the desert?

Such misconceptions can be linked to the ever-present fire-suppression myth, a damaging generalization that has permeated conversations about wildland fire. While past fire-suppression has hampered the natural fire regime in some forests, it has been critical in protecting native shrublands from too much fire. Many do not recognize the distinction.

Sadly, misconceptions about fire are not limited to interpretive panels. In an effort to “improve habitat” for the purpose of improving deer grazing and to eliminate non-native weeds, Cal Fire (California’s state fire agency) conducted a prescribed burn in the San Felipe Valley Wildlife Area between Anza-Borrego State Park and the mountain community of Julian in 2013. The flames escaped control and ended up burning 2,781 acres, damaging habitat, and spreading (not eliminating) non-native weeds.

Within the fire perimeter were approximately 320 acres of fragile desert chaparral, the last remaining, healthy old-growth stand in the entire area. Also burned were the Valley’s eastern-most grove of Engelmann oak and a lone, ancient sycamore at the valley/mountain interface. The damage was magnified because much of area burned by the escaped fire had been charred 11 years before. In fact, most of the region has suffered multiple fires over the past decade. The consequence will be the spread of invasive grasses that have colonized adjacent areas burned in 2010 and 2012 and the likely elimination of a keystone obligate seeding chaparral shrub, cupped leaf ceanothus (Ceanothus perplexans). Obligate seeding species depend on fire cues for their seeds to germinate, but need decades between fires to properly restore the soil seed bank in order for the species to re-colonize. The ceanothus was too young when the out-of-control flames hit.

Non-native grasses increase the flammability of desert chaparral, and deserts in general, leading to increased fire frequencies. Where fires were once small and spaced on the order of a century or more, today, non-native grasses can spread a fire every year and fuel huge fires like the 80,000-acre, 2006 Sawtooth Fire near Yucca Valley. The blaze severely damaged populations of desert pinyon pine, Joshua tree, and blackbush, species that are extremely sensitive to fire and do not recover well after being burned.

If left alone, however, desert chaparral is a beautiful, thriving ecosystem.

Robert Steers, an edge explorer from the University of California, Riverside, conducted one of the few studies that has examined the transitional gymnastics of desert chaparral. In a simple, yet elegant design, Steers selected four study sites along a 12 mile line running west to east, north of Palm Springs with the community of Morongo Valley sitting between sites two and three. Although the equally spaced study areas are all located at roughly the same elevation (2,900 feet), the mean annual precipitation drops precipitously from west to east due to the rain shadow effect from the San Bernardino Mountains (from an estimated 18 inches to 8 inches per year). Since the influence of aspect (which way the slope faces) determines what type of plant community can exist in this region, all sites were located on north facing slopes with similar angles (20 to 30 degrees).

One of the peculiarities of eking out an existence as a plant in southern California is that the direction it faces can mean life or death. Even though rainfall can be the same on both sides of a hill, the south facing slope typically has less vegetation because of evaporative loss from sunlight hitting the ground more directly. As a result, opposing hillsides have completely different plant communities. This is one reason why there is so much natural diversity in southern California. You can do a 360 degree spin and see three or more radically different habitat types within yards of each other. That doesn’t happen in wetter climates.

Steers found that species richness and diversity were highest at the two sites in the middle of the gradient which straddled the transition zone between the California and desert floristic provinces (floristic provinces are geographical areas with a relatively uniform assortment of plant species). One keystone California desert chaparral species, the extremely dense and prickly Muller’s scrub oak (Quercus corneliuss-mulleri), peaked at site 2 (77% cover), but faded at sites 1 and 4 (approx 4% cover). The ever present chaparral shrub chamise (Adenostoma fasciulatum) dominated site one (44% cover).

The eastern most desert chaparral study site (#4) dominated by California juniper (Juniperus californica) and Muller’s scrub oak (Quercus corneliuss-mulleri).
but completely vanished in the other three, as did cupped leaved ceanothus (Ceanothus perplexans) and the yellow-flowering bush poppy (Dendromecon rigida). As the sites progressed eastward, and annual rainfall dropped, chaparral shrub cover decreased.

Plant diversity begets animal diversity. In the desert chaparral of San Diego County, flying black dragons with a blue sheen and orange wings, known as tarantula hawks, patrol the air searching for their prey. Roadrunners dash about while barefoot geckos (its common name, not reflecting the lack of footware) hide under the rocks. Mountain lions pursue scattered mule deer and are tempted by the occasional gathering of peninsular bighorn sheep. Shiny black phainopeplas and rufous-sided towhees color the air with their songs.

While coastal chaparral is often disregarded, desert chaparral is nearly invisible. It’s like that wide spot on the road you pass up, or fail to even see, because you are on your way to more established destinations, the desert or the mountains. Yet desert chaparral is a cosmopolitan border land, an edge place that collects some of the most interesting life forms inhabiting both worlds. Like all edges, it is a place that foment evolution, embraces diversity, and inspires poets. It deserves recognition for the wonder it possesses, although not too much. Edges disappear when they garner too much attention.

“I am—really am—an extremist, one who lives and loves by choice far out on the very verge of things, on the edge of the abyss, where this world falls off into the depths of another. That’s the way I like it.” - Edward Abbey

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Adding Insult To Injury

Continued from page 11

routes right on top of county service area (CSA) roads, the BLM is in direct conflict with San Bernardino County Ordinance 3973 which prohibits ORVs on CSA roads.

While the BLM claims the WEMO plan is closely coordinated with the larger concurrent Desert Renewable Energy Conservation Plan (DRECP), there is no evidence of this claim. The preferred route network in WEMO undermines the proposed conservation goals in the DRECP and will imperil that planning effort.

Evidence on the ground demonstrates that the BLM has failed to protect valuable desert resources and private property from ORV damage. The most workable solutions are to close sensitive areas to ORV access while focusing on enforcement and education. Additional reforms at the state level, including requiring visible license plates on all ORVs, age limits for riders, and a requirement for ORV insurance will help BLM do their job more effectively. Desert public lands belong to all Americans, and a balanced approach to motorized access will benefit all desert lovers.

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Criteria for Route Designation

The federally mandated minimization standards (43 CFR Section 8342.1) call for route designations to be “based on the protection of resources of the public lands, the promotion of the safety of all the users of public land, and the minimization of conflicts among the various users of public lands.” The minimization criteria include:

Areas and trails shall be located to minimize damage to soil, watershed, vegetation, air, or other resources of the public lands, and to prevent impairment of wilderness suitability;

Areas and trails shall be located to minimize harassment of wildlife or significant disruption of wildlife habitats. Special attention will be given to protect endangered or threatened species and their habitats;

Areas and trails shall be located to minimize conflicts between off-road vehicle use and other existing or proposed recreational uses of the same or neighboring public lands, and to ensure the compatibility of such uses with existing conditions in populated areas, taking into account noise and other factors;

Areas and trails shall be located in natural areas only if the authorized officer determines that off-road vehicle use in such locations will not adversely affect their natural, esthetic, scenic, or other values for which such areas are established.