

Ocotillo Awakening

On the wall of my office is a composite satellite photograph of the entire world. A close look at the northern end of the Sea of Cortez in western Mexico shows a landscape lighter than any other in the region. Known as the Gran Desierto, this is the largest sand dune field in North America. Just to the east of the dunes is a tiny black dot. For me, this barely noticeable spot on this vast satellite image has been a magnet for numerous desert excursions over the last two decades. This dot has a name. It is called the Pinacate.

Formed through numerous volcanic eruptions over the last million years, the Pinacate is a rugged landscape of lava flows, cinder cones, and massive explosion craters. Averaging just four inches of precipitation annually, it is one of the driest deserts in North America. It is also one of the hottest. Rather than reflecting sunlight as many light-colored desert soils do, the dark volcanic substrates of the Pinacate absorb light and convert it into radiant heat. Daytime summer temperatures here regularly rise above 120 degrees and surface temperatures can burn exposed skin. Yet following winters with ample rainfall, the Pinacate's spring bloom is unrivaled—an intoxicating celebration of life, painted with a bold and robust palate.

In most deserts with light soils, colors are washed out by the mid-day sun. But here in the Pinacate, the black volcanic surface acts to magnify them. During a good year, the Pinacate's cindery substrates come alive in radiant purple mats of Nama. Less than an inch in height and with blossoms that completely cover its tiny foliage, the Nama appears to be painted on the desert floor. Mixed in are elegant golden Mexican poppies, blue lupines, cream-colored ghost flowers, apricot mallows, bright yellow desert marigolds, and the deep indigo blooms of the Chia, a species of sage whose pungent scent rises with each footfall.

Above this carpet of color are clumps of brittlebush, its luminous blue-gray foliage mantled in a dense array of yellow blossoms. Saguaro cacti and desert lavender grace the landscape in all directions, and thick stands of teddy bear cholla add dramatically to the verdant display. Although the teddy bear doesn't produce a showy flower, its tightly-packed spines refract light in a halo around the entire cactus. Unwary animals that pass too close to the cholla become impaled by these spines; the plant's jointed stems then detach and cling to their hosts, who carry them to new territories. Beautiful

though they are, it is certainly no celebration bumping into a teddy bear in the Pinacate.

For sheer visual effect, however, the grandest of all the Pinacate's spring-blooming plants is the ocotillo. With numerous long, arching, crooked wands that radiate from its root system up to twenty feet in height, the ocotillo is unique among desert vegetation. During most of the year its slender arms are leafless, grayish-green, and coated in white spines. But after a soaking rain, the ocotillo undergoes an astounding transformation: it cloaks its arms in emerald green leaves, and tops each one with a cone-shaped cluster of scarlet blossoms. Together they create a startling effect. With its bold green branches and flaming-red flowers, the ocotillo is so striking that I sometimes forget I am in a desert, and not a tropical garden, when wandering through an ocotillo grove in March. As the desert celebrates its spring symphony of color, it is the ocotillo, with waving arms, that is the conductor.

Every bit as remarkable as its spring transformation is the ocotillo's ability to withstand sustained drought better than any other desert perennial. Desert plants cope with drought in different ways. Annuals evade it by residing in the soil as seeds that will only break dormancy if there is enough rain to leach out germination-inhibiting chemicals. Cacti and agaves store water for hard times in succulent stems and leaves. Softwood shrubs like brittlebush and desert lavender shed unneeded branches, eventually dying back all the way to their roots. Ocotillo simply endures.

In 2003, the Pinacate was in the midst of an intense five-year drought. The columnar saguaro and senita cacti were waifs of their earlier selves, having shrunk to almost half of their former stem diameters. Slopes that had once been covered in bright-yellow brittlebush showed no evidence that the species had ever existed there. Desert lavender was nowhere to be found. But the hardy ocotillo blazed forth in full bloom. When every other desert plant was struggling simply to survive, the ocotillo blossomed brilliantly, just as it does every year.

The timing of the ocotillo bloom is so consistent that many species of western hummingbirds stage their spring migration to follow its flowering season from Mexico up through the southwestern United States. The hummingbirds and the ocotillo have a long-standing coevolved relationship. The red ocotillo flowers, dressed in the hummingbird's favorite color, are

long and tubular in shape, perfectly structured for the beaks of the nectivorous birds. In return for the ocotillo's nutritious nectar, the hummingbirds ensure efficient cross-pollination.

During migration, hummingbirds aggressively protect clumps of blooming ocotillo from rival birds, their aerial battles far more breathtaking than the maneuvers of fighter jets. But nothing can rival the flight of a male Costa's hummingbird dazzling a female in courtship. This dramatic ceremonial flight often involves loops a hundred or more feet in diameter at speeds well exceeding 80 miles per hour. At the bottom of the loop, the male gives a loud shrill call and shoots at high speed directly over the female's head. In 1923, W. L. Watson compared this courtship song to "the shriek of a glancing bullet, or a bit of shrapnel." 1

Wandering near camp during a recent field study trip to the Pinacate, two students and I walked right into the path of a courting Costa's male. We heard the high-pitched shriek as he came out of the east and passed just two feet overhead. We watched him climb high into the sky and come diving down again and again. The extraordinary change in pitch as the bird shot over our heads testified to his great speed. We were frozen in place by the repeated dive-bombing of this amorous male, who obviously cared little about our presence. His swiftness, startling sound, agility, and sheer exuberance were not just part of a hummingbird's nuptial ceremony, but also an exhilarating celebration for three awestruck human onlookers.

Not far from the courting hummingbirds, another celebration of procreation unfolded before us. We gazed wide-eyed at a pair of blister beetles, large gaudy insects with lustrous black bodies and bright orange heads. The male was mounted on a female, who was gorging herself on yellow brittlebush blossoms—consuming entire inch-long petals in a matter of seconds. Looking around, we found four more mated pairs on that one bush, all copulating and consuming copious amounts of flower petals. Here was truly a Bacchanalian revelry of the insect world.

The urgency expressed in these two mating ceremonies is a reflection of the ephemeral world of the desert spring. Annual plants like Nama germinate, grow, and wither in a matter of weeks. Ocotillo holds its leaves for the same time frame and its flowers for only half as long. As March draws to a close, the brilliant hues of a landscape in bloom are replaced by shades of brown, which soon fade into the Pinacate's black cinders.

Ocotillo, hummingbirds, and blister beetles are not the only ones to revel in the joy of a desert spring, following the hardship of a gripping drought. After the loss of a loved one or the experience of a tragic event, we too can enter a state where we wither like a parched brittlebush. During March of 1993 I was in such a state.

The previous summer, my Dad had been diagnosed with lung cancer. He underwent surgery, but the doctors were not able to remove all the cancerous tissue, and it then proceeded to spread throughout his body. Dad was an active outdoorsman and through our years together we tackled numerous physical projects—felling trees, removing stumps, cutting and splitting cordwood, building stonewalls. I can easily picture his strong, well-tanned frame as we worked side-by-side. So by Christmas it was a shock to see his body shrinking, not unlike a drought-stricken saguaro. During the bleak months of that winter, as I made frequent trips to my parents' home in Connecticut, I became shrouded under a dark emotional veil. It was as if the world had contracted around me, and colors faded into shades of gray. I departed for the Pinacate that year in an emotional pall, knowing that my Dad had only months to live.

That winter had brought ample rains to the trans-border region of Arizona and Mexico, but during our first few days in Organ Pipe Cactus National Monument I still felt barren. It wasn't until we entered the Pinacate and snaked our way through the black lava flows to our campsite that we saw our first leafed-out ocotillos adorned in brilliant scarlet blossoms. After setting up camp, I walked out to one of my favorite haunts. Once again I found myself standing within a glorious Pinacate bloom. I was awestruck by the sheer beauty that surrounded me. The exuberant desert spring literally eased the drought that had plagued my heart. I was filled with gratitude.

Life is a bitter-sweet experience, but at that moment I understood how we can taste the sweetness even when the bitterness is at hand. I realized that, no matter how bad things get, beauty always surrounds us and never fades away; it is simply in the darkness of our own hearts that we blind ourselves to its presence. I have had to relearn this lesson a number of times in my life. Each time, it has been the inherent beauty of the natural world that has brought me redemption.

Upon my return, Dad continued to decline, but luckily he didn't need much medication and was able to remain upbeat and alert until the last hours of his last day. My desert sojourn had given me the space and grace to regain my balance. The blooming ocotillo had offered me a profound gift—the ability to be present for my Dad's final days, something that was not possible in my previously shrouded state. I felt blessed, and can only imagine that Costa's hummingbirds and blister beetles experience similar feelings when the lush spring bloom bursts forth from the Pinacate's barren cinders.

No one truly knows how long an ocotillo can live but, like humans, some have thrived for more than a century. In the Pinacate, their death creates a moving display. The arms turn light gray and fall to the ground in a graceful, radial pattern, looking like long tresses that have been released to fall where they may. Against the black cinders the wands lie in peaceful repose, the beauty of their death equaled only by the splendor of their life.

1. Bent, Arthur C. 1964. *Life History of North American Cuckoos, Goatsuckers, Hummingbirds and Their Allies*. Dover Publications. New York. p. 363.