The Cactus Wren

by

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If you were to happen across a coastal cactus wren while wandering around in some of Orange County's last farmland, he would look at you with unmistakable contempt. He would take a moment to consider your presence, cock his speckled little head, contract his fierce white eyebrows and then emit the most sinister "*Charcharcharchar*" you will ever hear. He might be staring you down from atop the branches of the Mexican elderberry tree that is swaying slightly with his weight, while his formidable mate stays below in the family's prickly pear cactus nest, protecting the children from harm. The nest itself is a football-shaped fortress, covered in crackling, spiky plant fibers and nestled among the menacing thorns of a cactus. When it comes to the safety of his family, the cactus wren doesn't take chances and he doesn't make mistakes. He builds decoy nests in the neighborhood to trick his predators while his mate lines the cool and quiet home-nest with feathers so the chicks can nestle, safe and comfortable, against the surprisingly soft interior of their stronghold. The sun blazes in this harsh and desolate coastal sage scrub, and only the fiercest in nature can survive the barren conditions, this cactus wren among them. The bird can live even without water, taking liquid instead from the plant-life that he eats. The cactus wren is tough, and his eight-inch frame certainly doesn't prevent him from being able to take on the fiercest enemies that the coastal sage scrub has to offer. Until, of course, fire begins to rage.

Fire is like nothing else that a cactus wren has ever encountered, like nothing that it could possibly adapt to. It rages, scorching and unstoppable, through the cactus wren's carefully defended home in a matter of minutes and then it is gone, moving on to terrorize more of nature's flammable coastal sage scrub. Seconds ago, the prickly pear cactus housed an entire family, and now it is decimated, black, and empty. The nest, so carefully lined with the mother wren's own feathers, is melted into nothingness. The cactus wren family is nowhere to be found. It is never seen again.

It is unknown what happens to the cactus wren immediately after its home is destroyed by fire. Organizations that are responsible for overseeing or managing the coastal sage scrub reserves in Southern California, such as the Nature Reserve of Orange County and the Irvine Ranch Conservancy (IRC), suspect that most of them simply die in the blaze. Other Orange County birds, like the California gnatcatcher, have been similarly affected by coastal sage scrub fires, but unlike the gnatcatcher, the coastal cactus wren population has been unable to recover because its habitat of prickly pear and cholla cactus does not regrow fast enough on its own. Cactus wrens will only make nests in cacti that are more than a meter tall; they don't feel safe from ground predators in anything shorter. Because it takes the slow-growing cacti around twenty years to reach this height, it is no wonder that this particular bird, with its nesting preferences, has a harder time recovering from habitat destruction than other avian species. This Southern California burn area is home to the only coastal variety of cactus wren in existence, so if the habitat is not restored, the cactus wren faces local extinction. Aware of this possible loss,

the Nature Reserve of Orange County and the Irvine Ranch Conservancy have stepped in with a plan to restore fire-wrecked cactus wren habitats in Orange County.

After the Santiago fire of 2007, a staggering seventy-five percent of the cactus scrub inhabited by the cactus wren in the 20,000 acres of their central reserve was burned to the ground. In 1993, the similarly destructive Laguna fire burned seventy-five percent of the 17,000-acre coastal reserve. The coastal and the central reserves are the only two protected locations in Orange County inhabited by the coastal cactus wren. Since this species of bird has a particularly difficult time adapting to a new environment, such decimation makes it nearly impossible for the cactus wren to recover on its own. In 2008, surveys conducted by the Nature Reserve of Orange County revealed that there were only 67 territories occupied by the bird in the central reserve, down from 374 territories in 2006. Similar surveys of the coastal reserve show that 186 acres were occupied by cactus wrens in 2006, down from the 1,473 acres occupied in 1992. This means that the central reserve and the costal reserve have respectively experienced 82.1% and 87% declines in cactus wren populations since the fires blazed through their lands.

Although the Laguna and Santiago fires were immediately destructive, their long-term effects on the coastal sage scrub ecosystem are just as damaging to the cactus wren's chances of survival as was the initial burning of their homes. Surveys have found that even in the areas where much of the cacti managed to survive the fire, populations are still rapidly decreasing. Biologists at the Nature Reserve attribute this to the destruction of other important parts of the delicately balanced ecosystem that a cactus wren depends on for survival.

"They don't have enough food sources to raise their young," says Kris Preston, a biologist who has been at the Nature Reserve for the last two years. The destruction of other native vegetation leaves the coastal sage scrub inadequate as a food source to the wren, which depends on seeds, insects and small animal life for survival. Drought conditions in the last several years have exacerbated this problem—plant life has been unable to recover and cactus wren populations consequently drop.

Even before the destructive fires, the Nature Reserve of Orange County and the IRC targeted the cactus wren as a species of concern. Urban development in Orange County is slowly consuming the cactus wren's natural habitat.

Not only does human expansion encroach on natural coastal sage scrub, it also plays a major role in causing the devastating fires. There is a direct link between population and fire—a man who flicks a cigarette butt out of his car window on a highway surrounded by brush can start a fire that will burn thousands of acres and he will never even know that it happened.

"People might be out there with their power mowers at the wrong time of year and spark something. You might have people out there driving…catalytic converters malfunctioning are a big source of fire," says Preston. People start fires. And that's a fact without even considering the effects of arson—there were 10,674 California arson crimes in 2008 alone. Not only do people physically ignite fires, increases in population also accompany an introduction of flammable, non-native vegetation to the coastal sage scrub. According to Preston, urban development tends to introduce foreign weeds—weeds that are much more flammable than the native vegetation that surrounds them. "Native vegetation is flammable and will burn, but it doesn't start up and carry like this grassy stuff that you see at the side of the road and near people's houses. We've changed the environment," says Preston. The extra flammability combined with drought conditions is especially lethal—dead, dried-out bushes and plants provide even more sustenance for an inferno.

"You can't stop fire. You can't control it because there's just too many people," says Barry Nerhus, conservation chair for the Orange County Society for Biological Conservation (OCSBC). "The biggest fear is that this bird is going to go extinct."

But if the IRC and the Nature Reserve have any say, the cactus wren at least will have a fighting chance at survival. Habitat restoration in the central reserve began with the IRC's 2009 proposal to the California Department of Fish and Game under their Natural Community Conservation Planning program (NCCP). Populations were becoming dangerously low. The NCCP is a program created by the California Department of Fish and Game to preserve entire ecosystems in order to prevent the loss of single species within them. The program is overseen in Orange County by the Nature Reserve of Orange County and the IRC manages land for some participating landowners. The cactus restoration program begun in 2009 is taking place on lands largely formally owned by the Irvine Company, for example in the Portola Orchard at the end of Portola Road in Irvine and adjacent to the 241 freeway. Other sites being rehabilitated include areas in Limestone Canyon, Shoestring Ridge, and areas near the Siphon Reservoir.

The IRC called for volunteers in November of 2009, and forty of these sites in Orange County were planted with tiny prickly pear cactus cuttings. The cuttings come from healthy populations of Orange County cacti from areas where the plant is not in jeopardy. The method for transplanting, while effective, is not particularly scientific. "We take barbeque tongs, clamp down on the cactus, and twist," explains Quinn with energetic hand motions. "We collect thousands at a time, three to four thousand a day."

Once these pieces, called cactus pads, are collected from healthy cacti, they are carefully laid out on a bed of gravel so that the end that was severed from the mature cactus can recover from the shock of removal. The severed end is exposed and glistening with the moisture retained by the desert plant. Like a cut in human flesh, the cactus piece must heal itself by forming a scab over its wound before it can be transplanted in the habitat restoration sites. Once the cactus pads have completed the process of what Quinn calls "callusing over," they are planted in carefully selected burn areas, two per square meter. Now there is little to do but wait twenty years for the tiny leaves to reach a height that's tall enough for the finicky cactus wren.

In the meantime, the IRC and the Nature Reserve are attempting to provide a temporary solution to the wren's habitat problem. Prior to the fire in 2007, the IRC used a local research grant from the California Department of Fish and Game to build artificial nesting structures to see if they could serve as habitat for the cactus wren during the long wait for the real cactus to grow to a suitable height. It was determined last year that the birds were not willing to nest in these man-made cacti, and this year the IRC has set out wooden and wire boxes on meter-tall poles in which they're hoping the wrens will want to build their own nests. Many of these nesting recommendations are suggested by Robb Hamilton, a biologist who conducts cactus wren population surveys in both the central and coastal reserves. According to Hamilton, the IRC's main goal in the central reserve should be to expand existing cactus wren sites outward so that the young of the existing birds will have a place to migrate to. In the coastal reserve, it is more important to plant new sites in such a way that they close the gaps between existing sites. The coastal reserve has plenty of unburned coastal sage scrub that is perfect for nesting, but the cactus wrens seem unable to find this land on their own.

With so much habitat to recover and so few resources, allocation is one of the project's main concerns. "Because it's over such a large area, the first phase of our restoration program was to make sure that our efforts were in strategic locations that would most likely benefit existing

cactus wren pairs," says the IRC's Megan Lulow, senior ecologist and head of the restoration project. Because the cactus wren is not a bird that likes to move around, restoration must occur within one kilometer of an identified cactus wren couple and within two hundred meters of a fairly intact existing habitat.

"Traveling over miles is something they don't do," says the OCSBC's Nerhus. "They have stubby little wings. They can fly, but they'll fly up to a tree, or they'll kind of bounce up a slope." When new habitats are put in place close to existing habitats, it means that the young of any current pairs will have an accessible place to go when its time for them to move out of the parental nest.

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Quinn Sorenson has been working with the Irvine Ranch Conservancy and the transplanted cacti for more than three months, but he has never seen a cactus wren at the Portola Orchard. This is especially disappointing for him because this orchard is one of the surveyed sites that has numerous identified cactus wrens—around fifteen. The bird's distinctive call has taunted Quinn on many occasions, but stealthy searches always prove to be fruitless.

"They're pretty secretive," Quinn says as his hiking shoes crunch in the dirt of the site, which is part of an avocado orchard owned by the Irvine Valencia Company. This is the site located at the very end of Portola Parkway in Irvine, just past the 241 freeway. Entrance is barred to all those without authorization, but Quinn ignores the imposing signs as he drives the IRC's white Toyota pickup into what the staging area—something that turns out to be a locked gate at the entrance. As he drives, Quinn speaks a kind of gringo Spanish to Margarito and Abelino, two workers borrowed from the Irvine Valencia Growers. The three of them are headed up to the site for a day of weeding and hoeing.

After entering the orchard through the staging area, Quinn drives for about ten minutes to the actual site of the cacti, stopping along the way to unlock two chain-link gates. The day is uncharacteristically balmy and beautiful for February, but Quinn pays little attention to the weather as he drives with his head hanging out the open window. Suddenly a "*Charcharchar*" sounds from the scrubby bushes and cacti lining the side of the bumpy dirt road, and Quinn slams on the brakes so hard that all four of the truck's passengers lurch in their seatbelts.

"Did you hear it?" he asks excitedly as he cranes out the window to see if he can spot the tiny cactus wren in a clump of coastal sage scrub. His face falls slightly when he fails, but he still has a hopeful air about him as he continues to drive.

Quinn parks the truck alongside a weathered fence that bars access to the adjacent hillside. The fence is dilapidated and rusty, and he and the two workers simply step over a spot where it is bent all the way down to the ground. Brown and scrubby green dominate the landscape, brush and rocks cover the dirt floor and the unforgiving sun bakes the hillside with its rays. Here and there the skeleton of a cactus sprawls across the ground, burned black and curled in on itself like the legs of a charred octopus. Quinn, Margarito, and Abelino climb to the top, hoes in hand. Once there, the three barely pause to look at the spectacular view. The cities of Irvine, Lake Forest, and Tustin stretch into the great expanse, their skyscrapers dotting the horizon. The sky is a cloudless, pale blue, empty except for the thin line of faint brown smog that hovers at the point where sky meets land. Catalina Island is a faraway bump. There is an absence of sound at the top of the hill, a kind of silence that dominates even the freeway rumblings from the adjacent 241 and the faint buzzing of the hill's insect life. Down on the crude dirt road next to the truck, a deer picks her way along the path.

"Here it is," says Quinn, pointing to an anticlimactic collection of tiny prickly-pear cacti, just barely poking single, spiky leaves out of the hard ground. They look impossibly delicate, as if a strong gust of wind would knock them tumbling downhill. They also look impossibly small, vfar short of the meter's height the cactus wren requires. The prickly-pears are planted in a circle, a little collection of bright green stubs that couldn't possibly protect a cactus wren from anything in this barren expanse of lonely brown.

Just outside the perimeter of the circle is a curious-looking cylindrical tube, sticking three feet out of the ground. This is a Mexican Elderberry, a tree that has been determined to be closely linked to the cactus wren's survival. The IRC plants Mexican elderberry trees in all of its restoration sites because the bird, for reasons unknown, prefers to nest in cacti growing close to this species. Encasing the tree in this tube is supposed to keep the tree at the level of moisture necessary for it to grow, and it is also supposed to keep it growing vertically. Looking at the cloistered elderberry, however, it is difficult to realize that this foreign feature sitting in this setting of coastal sage scrub contains an element that is native to the land.

Once again, the elusive call of the cactus wren sounds from nearby. Quinn abandons his speech mid-sentence to scamper into the brush toward the sound, but returns looking dejected.

"I really want to see that cactus wren!" he exclaims, still looking wistfully toward the bushes. But it's back to business as he looks at Margarito and Abelino, examining the raking motions they're making with their hoes. It is imperative that they hoe gently, not just for the sake of the fragile cactus, but so that none of the other native species are killed. These include tiny Blue Dick flowers, Deerweed, Wishbone plants, the California Sagebrush, and California Buckwheat. Quinn instructs Margarito and Abelino in more of his rudimentary Spanish, pointing at the ground as he speaks. He pauses every so often to listen again for that distinctive call, his ears cocked and his face hopeful.

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It is unknown exactly what role the cactus wren plays in its environment. The OCSBC's Nerhus believes that the bird is responsible for seed dispersal of the Mexican elderberry tree, which would actually make the wren a vital component of the local ecosystem because of the important role played by that tree. Besides scrub oak trees, the Mexican Elderberry is the tallest tree in the ecosystem, making it one of the only perches from which coastal sage scrub birds can hunt, as well as one of the only sources of shade. Berries from the tree provide a food source in the summer when most other plant food sources are dormant, and the elderberry also provides shelter for lizards and other small animals. Besides possibly dispersing tree seeds, biologists know that cactus wrens eat insects and provide warning calls to other birds in the wild. Biologist Robb Hamilton, however, believes that the disappearance of the cactus wren, which in spite of its small size is the largest North American wren, may well be a warning sign that the entire ecosystem is beginning to crash, as the bird is one of its most advanced members. For him the cactus wren is an indicator species.

"They represent the apex of what has evolved in this area…if they disappear, then we're just left with an impoverished natural environment," he says. Hamilton's colleague and fellow wren enthusiast Kris Preston agrees. "We're simplifying and homogenizing our ecosystem," she says. "I feel a real sense of loss. What would it have been like two hundred years ago? What other things aren't here that we're not aware of?" Hamilton also says that the decline of the wren's ecosystem is a direct reflection of the way that humans utilize resources and build right over nature, a view that is shared by most people involved in the restoration project. Cactus wrens in Orange County once had the contiguous habitat that they needed, until it was

fragmented by human development and burned by human error. “What does it take to make people care? People don’t have to care,” Hamilton says. “You can still get on the Internet and enjoy life.”

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Quinn Sorenson cares. He has spent the last three months at the IRC, working to save a bird that he has never seen. As Quinn drives the pickup back over the dirt road and towards the staging area, he still hasn’t given up hope. He resumes his practice of stopping about every two hundred feet or so to stick his head out the window to scan the nearby cacti. Finally, *finally* he hears the bird right outside the truck. He flings open the door and stands in the doorway, his mouth gaping and his eyes wide with anticipation.

“There it is! *There it is*!” he shouts, pointing as the tiny wren, streaked with brown and white, stares him down from atop the branches of a tree that is swaying slightly with his weight. Man and wren make eye contact for just a few seconds. After the cactus wren considers Quinn in all his humanity, he cocks his speckled little head, contracts his fierce white eyebrows, and flies off into the brush.