

Writer Tyler Williams stands near a 43-foot-tall saguaro, with a trunk circumference of 7 feet, east of the Phoenix area. This was the largest saguaro Williams and photographer Bill Hatcher found during their search.



HO, HO, HO... GREEN GIANTS

No one knows for sure where the world's biggest saguaro is hiding, but there was a giant near Cave Creek that was said to have been more than 70 feet tall. It blew over in 1986. Another nearby giant grew to 46 feet before succumbing to the effects of a wildfire. There are other giants out there, and our writer and photographer went looking for them.

BY TYLER WILLIAMS
PHOTOGRAPHS BY BILL HATCHER

STOPPING IN THE MEAGER SHADE of a paloverde, we looked at our picture of the great saguaro, trying to match the photo's distinctive skyline with the ridges above. If we found that skyline, we could find the cactus, but all we saw was an array of strangely shaped volcanic formations, a jumble of puzzle pieces. All of them rose above forests of saguaros. This wasn't going to be easy.

We'd been waiting five months to resume our quest for the world's biggest saguaro cactus. Now, afternoon temperatures were finally below 100 degrees, so here we were, looking at a description written more than a decade ago. It claimed: "You

can't miss it. It's an icon." Yet Jon Orona, of the Arizona Department of Forestry and Fire Management, had come up empty in his three attempts to find it. Now, photographer Bill Hatcher and I stood in 90-something-degree heat, staring at a picture that could've been made anywhere in these jumbled Superstition Mountains. We had good binoculars, a few location clues and one quite provocative photograph. Still, between that elusive picture and the ubiquitous Sonoran Desert that stretched into a heat haze through my binocular lenses, our mission seemed somewhat desperate. We put the photo away and scurried toward the next piece of shade.

Saguaros love the heat. This is why they grow mostly on rocky, south-facing slopes, where daytime warmth lingers into the night. Bottomlands, where cold air settles, rarely have extensive saguaro groves, because if the temperature dips to 23 degrees, saguaro flesh is damaged, and if the temperature remains below freezing for long (20 hours, as a rule), the big cactuses die.

This cold intolerance is what limits the saguaro's range to the north and east. Driving east from Tucson on Interstate 10, you'll pass the last saguaro a few short minutes after the exit for Saguaro National Park, where they are obviously prolific. Near Milepost 285, a final saguaro lurks at an elevation of 3,400 feet. Above there, too many cold nights occur for saguaros to thrive.

They can grow higher, but it has to be a special spot. The northernmost saguaros exist at 4,260 feet, thriving in the embrace of a south-facing cliff among the Hualapai Mountains, near Kingman. It is not an area where one would expect to find saguaros. I clambered through an ecosystem of scrub oaks and banana yuccas en route to these outliers, doubtful that any tall cactuses grew nearby. But there they were, tucked in an amphitheater of rock. Scrambling down to them, I felt the warmth of the cliff, which radiated evening heat onto the fragile cactuses while a cool breeze blew just above. The story is similar for the easternmost saguaros, which grow among rocks several miles west of Safford, well above the valley floor. Their absence farther east isn't due to any longitudinal barrier, just the cold.

FREEZING NIGHTS were barely imaginable as we stood, now in full sun, with our picture, scrutinizing the landscape. A rocky promontory across the basin looked familiar, startling us both. "That sort of matches up," I said, although I knew Bill saw it, too. The heat was forgotten. As we hustled to the next high point, the great saguaro appeared slowly, like a furtive deer creeping out of the bushes. Its shape — stout, with broad, sweeping arms — was unmistakable. I raised my binoculars, confirming that this was definitely our champion. It also was definitely dead.

Woody ribs, the saguaro's "skeleton," hinted at what a tremendous specimen it once was. Even without its fleshy green skin, it retained a thick, stolid stature. Remnants of its many arms, now merely piles of pale wooden sticks, lay in the nearby rocks. Much of the cactus seemed to be missing, washed away or carried off by creatures of the desert. Bill and I sat with the wooden cactus shell for a long time, marveling at its swirling patterns of wood and the view from its perch. A black cliff, the one we'd been scouting for, rose behind us. It probably fun-

neled extra water to the cactus, which helped it get so big.

Saguaros grow only from summer monsoon rains (gentle winter rains are stored), collecting the quick downpours in their shallow roots, which extend roughly as wide as the cactus is tall. Soil composition plays a part in how much water reaches those roots, but studies have shown that about 0.2 inches of rain is required to penetrate enough to prompt saguaro growth.

A lack of monsoonal rain prevents saguaro growth west of Arizona. There are a few scattered individuals beyond the Colorado River near Parker, but they are hidden deep within California's Whipple Mountains, and few people have ever seen them. But as you enter Arizona along I-10, saguaros practically serve as a welcoming committee. The first ones appear south of the freeway about a mile from the river. By the time the interstate climbs into the Dome Rock Mountains a dozen miles from the border, saguaros are prolific. The monsoon reaches the Dome Rocks just enough.

With occasional drenching rains over many seasons, a saguaro can grow to giant proportions. The oldest saguaros have been growing for more than 200 years. These monarchs have escaped damaging cold, scorching fire and toppling wind. In a strong breeze, you can stand beneath a saguaro and hear a loud whisper whistling through its spines as the tall being sways gently in the atmosphere. At 40 feet off the ground, winds are stronger, and it's also a long way for nutrients to be transported from the roots. It's easy to find a 35-foot saguaro, but find a 40-footer, and you've got something special. Fifty-footers are the stuff of legend.

There was a cactus near Cave Creek, north of Phoenix, said to have been more than 70 feet tall before it blew over in 1986. The Grand One, near Horseshoe Reservoir, was the recognized champ at 46 feet until it burned in the Cave Creek Complex Fire of 2005. Saguaros can withstand moderate fires, as this one did, but it was still weakened; it toppled two years later. Both of those ex-champs grew in the foothills of Arizona's central mountains, where rainfall is maximized by topography and the saguaros are less drought-stressed and a little more primed to grow when the summer deluges come. Leaving our skeletal champion remnant, Bill and I packed up and headed for those central mountain slopes, to a particular hillside in the low Mazatzals where the saguaros grow dense — and where I'd spotted a giant or two before.

THE FOOTING WAS TERRIBLE, with head-sized black basalt precariously perched at the angle of repose. The saguaros seemed to love it, growing in such profusion that you might legitimately call it a forest. We scanned and measured, eyeballing distant behemoths through my laser clinometer: 35 feet, 38, 39. An hour into our survey, a new view revealed a saguaro spire rising above the rest. "Forty-eight feet," I said, looking to Bill with a grin. "We just might have a new champion."

Height is the most important parameter in measuring overall saguaro size, but it's not the only consideration. Two other factors — the same two elements used when sizing a big tree — are calculated: trunk circumference and crown spread. Most saguaro trunks are similar in girth, which is why



This saguaro in the Superstition Mountains once was considered a champion specimen, but now, only its "skeleton" remains.



Williams searches for a champion saguaro in the lower elevations of the Mazatzal Mountains, northeast of Phoenix.

height is usually the difference maker. Still, a fat trunk can play a role. Crown spread is least important and rarely varies much from cactus to cactus, because saguaro arms all tend to reach for the sky. Extending horizontally, like an oak branch, creates too much leverage — too much weight for the fleshy main stem to support.

Saguaro arms make the species especially alluring to humans, mirroring our own shape in charismatic splendor. They seemingly rejoice to the universe, or perhaps signal a touchdown. Twisted, downturned arms are usually the result of frost damage, with a weakened joint causing the arms to droop with gravity before curving back upward or sideways, sometimes wrapping a companion cactus in a hug. Arms emerge on adult saguaros when the time is right, not on any set schedule. They often don't emerge until a cactus is 10 feet tall, at which point a saguaro is usually 40 or 50 years old. Most mature saguaros develop a dozen or more arms, but a specimen that once grew in Saguaro National Park boasted 52. The total number of arms is not an officially recognized factor in saguaro measurement, but the arm count on a saguaro certainly increases the overall cactus coolness factor.

Confident that we'd found the biggest saguaro in this Mazatzal hot spot, we decided it was time to visit one more giant on our list. This one was recorded as co-champion with the now-deceased individual, which meant it now held the title unless our 48-footer in the Mazatzals was bigger. The tape, and laser, would tell.

Map coordinates led us down the Bush Highway along the lower Salt River. After our backcountry suffering, we were incredulous. Here we were in an outdoor playground on the cusp of Phoenix, hardly a clandestine redoubt of desert mythos. Driving down a paved road off the highway, I peered between cell towers and through cholla fields with barely a saguaro in sight. And then, a very tall cactus came into view.

At first glance, it looked 50 feet tall. Its trunk was bigger than most, gray and furrowed and thick as your average ponderosa pine. Its arms, 13 in all, glowed olive green. They were pocked with 33 different bird holes, portals of security to the wrens that called them home. Its four principal arms all pierced the 30-foot mark in a close, organized fashion. The entire arrangement leaned slightly to the east, pulled that way by a rare saguaro crest, a fan-shaped blossom of cactus developed from frost damage or some genetic quirk — experts aren't sure.

The laser said 43 feet. The trunk: a whopping 7 feet around. Combined, the measurements made it slightly bigger than the Mazatzal cactus — enough to call it the champion.

Surely there are bigger ones out there. The Superstitions hold plenty of nooks to hide a 50-footer. The Mazatzal foothills have barely been surveyed. Southwestern Arizona is the heart of saguaro country, and Sonora, Mexico, has saguaros for 300 miles south of the border. There, they grow among cardons, an even bigger cactus species that might encourage the saguaros to grow a little more.

Wherever that hidden giant might be, I'm forever altered by the quest, compelled now to stop and measure every big saguaro I pass. Usually, they're plenty short of champion status, but I don't mind. Big saguaros thrill me, ground me and speak to me. Sometimes, I speak back. Standing beneath their animated giant-ness, I raise my own arms in humble emulation and whisper, "You are awesome." **AH**