

This ponderosa pine lived above Horn Creek Rapids in the Grand Canyon's Inner Gorge, at an elevation — around 3,000 feet — that's inhospitable to the species.

GROWING, GROWING, GONE

Four or five years ago, a tree died in the Inner Gorge of the Grand Canyon. That's not unusual — trees die all the time — but this tree, a 150-year-old ponderosa pine, should never have been living there in the first place. It was a freak of nature.

BY TYLER WILLIAMS
PHOTOGRAPHS BY
BILL HATCHER

WASN'T SURE IF I SHOULD BELIEVE THE RUMOR — a ponderosa pine growing above Horn Creek Rapids in the Inner Gorge? River guides tell tall tales, so this might be a hoax, something to get me fidgety behind the oars as I approach the lip of the rapids. That spot is the most dramatic downstream view in the Grand Canyon: Black walls narrow to a “V,” and the river vanishes into an ominous, misty horizon. It's not the place one tends to be gazing toward the rim, looking for a pine tree.

Nonetheless, as the Colorado River gathers itself above the roar, I find myself stealing glances from water to rock like some distracted texting driver. And then, there it is: a tall pine silhouetted against cream-colored sandstone. A second later, it's gone, furtively vanishing behind a fin of schist, like a Sasquatch standing still in the forest as one speeds past. I plunge into the tumult of rapids and sluice out the bottom with whoops of relief, feeling cleansed of everything that came before and wondering if it was all a dream. Had I really seen a ponderosa in the Inner Gorge?

Pinus ponderosa is the dominant tree on both rims of the Grand Canyon, where the elevation is generally 7,000 to 8,000 feet. Once in Earth's history — about 10,000 years ago, when the climate was cooler — the trees commonly grew below the rims, down to 6,000 feet, but never as far down as the Inner Gorge. At 3,000 feet, it's a land of searing black rock and sparse desert shrubs. A ponderosa pine down there is about as likely as an aspen grove on Camelback Mountain in Phoenix.

Tell most non-Arizonans that we have the largest contiguous ponderosa pine forest in the world, and they'll look at you like some naive local. But the image of a robust, orange-barked ponderosa is iconic to Arizonans, as inextricable to our high country as the saguaro is to our deserts. Arizona exists at an optimal location for pine trees. The 35th parallel north, a circle of latitude that crosses the state about 20 miles south of downtown Flagstaff, is a bull's-eye for pines. There, ample sunshine and just enough moisture make conditions conducive to drought-tolerant pines, but not so great for thirsty competitors. It is the aridity of the Southwest that has allowed pines to exist in our mountain landscapes.

There are two varieties of ponderosas in Arizona: Rocky Mountain (*Pinus ponderosa scopulorum*) and Southwestern (*Pinus ponderosa brachyptera*). No matter the variety or location, ponderosas thrive where there are regular fires, fending off blaze after blaze with their thick, flame-resistant bark. Yet they still succumb to the hottest infernos, making forest fires a main cause of mortality. Within the depths of the Grand Canyon, fire isn't much of a threat, because the landscape is mostly treeless and thus lacking in fuel. Neither would a ponderosa down here be threatened by logging, or any other man-made impact, for that matter. Maybe a ponderosa *could* survive near the bottom of the Canyon. Maybe what I saw was no ghost.

THE RIVER RUMBLES A THOUSAND FEET BELOW and a hot sun saps our motivation as photographer Bill Hatcher and I scramble over ledges of Tapeats sandstone and speculate on where this supposed pine tree might reside. I'm lost in Canyon reverie when Bill's voice echoes over the rocks: “Hey, here's a pine tree.” It's the crown of a full-grown pine, its orange bark and long needles barely poking above the cliff where we stand. It's unmistakably ponderosa, and it's unmistakably dead.

“It probably died in 2012,” says George Koch, a Northern Arizona University professor and plant ecophysiologicalist who's climbed many of the world's largest trees to understand how their hydraulic systems work. “That year had a dry winter followed by a weak monsoon. It was tough on a lot of trees.”



Writer Tyler Williams studies the Inner Gorge ponderosa, which is thought to have died in 2012 — a year that had a dry winter and a weak monsoon.

To me, the tree's recent death isn't as surprising as its preceding survival — probably for 150 years or more, judging from its narrow-plated orange bark. Bill and I backtrack, descend a draw in the sandstone cliff and contour the base of that cliff for an hour to reach the tree. There we sit, in the same Tapeats shade that nurtured this bold pine.

We've been there for hours when I notice a crack leading into the wall. A low roof forces me onto hands and knees as I creep in carefully, scanning dark crevices for anything that might not want to share the overhang with me. Three crawls in, a cool breeze brushes across my neck. It's natural air conditioning, emanating from a series of shady fissures tucked inside the sandstone. Looking out, there's the pine, directly in line with the cool spilling air. Rain runoff surely follows this same crack system, giving extra moisture to the pine and a surrounding copse of greenery. Below the natural garden, a huge square block of fallen Tapeats sits like a dam, containing the moisture and the cool, humid air.

“When that tree was a seedling in the late 1800s,” says

climatologist Ken Cole, “the climate was in an exceptionally cool and wet period we call the Little Ice Age.” A few wet years, a perfect configuration of topography, a supporting cast of humidifying bushes — when this ponderosa sprouted, the neighborhood was perfectly hospitable. And so, year after year, this stalwart pine grew, pushing farther into the harsh atmosphere with each season, with every inch of dictated growth. The last couple of decades, no doubt, got tougher: more sunshine as the tree grew beyond the cliff's shade, more hot years as the climate entered a new era. Finally, this ponderosa pine, resolutely finding its niche in an obscure habitat amid a land of oven-hot rock, reached its limits.

It will soon topple, sadly but inevitably. Softening the loss is a young piñon pine growing a few feet away. This small tree is out of place down here, too, but less so than the ponderosa was. A charismatic little tree with drooping limbs, it's sure to cast a striking silhouette. Someday, if I'm lucky, I might float past in a haze of heat and say: “Look up there — a piñon pine growing in the Inner Gorge. Who would ever believe that?” [AH](#)