Anson Stevens-Bollen

The Heart of Darkness: a walk through the scorched landscapes where our forest used to be and a glimpse of our future fires

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By Laura Paskus

First there's a spark, and then the fire. We all stare at the sky, smell the smoke. After the trees and brush and roots are gone, floods roar through arroyos and down hillsides. Weeds invade as soon as the ground has cooled.

Often, the long-term changes aren't that obvious, especially when compared with flames and floods. But what's been happening across tens of thousands of acres within the Jemez Mountains isn't subtle. Nor are changes happening slowly.

In what amounts to the blink of an eye, the Jemez have experienced landscape-level changes in their forests and watersheds. Some of the woodsy playlands New Mexicans have known for generations won't ever return.

"It's easy to look out here and see all the dead trees and feel all bad about it, all depressed about it," says Collin Haffey, an ecologist with the US Geological Survey. "It's harder to see the remnant forests."

In April, Haffey and a team of artists and conservationists went to look at those remnant forests, indulging a journalist in tow. On the Saturday before Easter, we visited the "heart of darkness"—it's the name Haffey and some of his colleagues have given a 33,000 acre area of the Jemez Mountains scorched by an inferno in 2011's Las Conchas fire.

In the Jemez, aspens are growing up where pine forests once stood. Laura Paskus

Since the 1980s, an increasing number of big fires of over 1,000 acres have been burning in the western United States. They come on the heels of decades of fire suppression in the forests. And as the climate warms, the sheer number of fires has grown, too, and the wildfire season has lengthened by about two months. Even this year, with a bumper snowpack in the mountains and recent cool rains, the National Interagency Fire Center is predicting significant wildfire danger for southwestern and central New Mexico.

Outside Santa Fe, the Sangre de Cristos have experienced big blazes in recent years, and the Gila National Forest is the current record-holder for the state's largest fire. In 2012, the Whitewater-Baldy Fire burned nearly 300,000 acres of forest. But perhaps no place better illustrates how southwestern forests will continue changing in the warming world than the Jemez Mountains.

The Jemez forests have been hammered by bigger and nastier fires since the late 1990s. To mention just a few: In 1996, the Dome Fire burned about 16,000 acres of the Santa Fe National Forest and Bandelier National Monument. Started as a prescribed fire, the 2000 Cerro Grande burned out of control, lighting up 48,000 acres, destroying or damaging 280 homes in Los Alamos and wiping out 40 buildings at the national laboratory.

Then six years ago, Las Conchas devoured 156,000 acres, with flames visible from the Santa Fe city limits. That fire's behavior, growing from 40 to 43,000 acres in its first 14 hours, defied the rules. That fire also changed our expectations when it comes to fire—and what comes back after the flames.

From Highway 4, we turn down a gravel road where live ponderosa pines still tower above, blocking out the sky. Las Conchas burned through here, but it's still cool and green, shady and quiet. Haffey points out "graduation flats" where high school kids come to party. Today, that meadow is green, dotted with the spring's first dandelions.

As we continue southeast, the vista opens up. Nothing here stands taller than a basketball hoop, except for spindly, blackened tree trunks. The skeletons with thick trunks and black branches are ponderosas, Haffey points out. Douglas firs have skinnier trunks and white branches.

These ponderosa pines survived Las Conchas, but new ponderosas aren't sprouting here. Instead, the lands are being overgrown with locust. Laura Paskus

On one side of the road, aspen trees are beginning to spread light green leaves to the spring. On the other, the predominant plant is the thorny locust. When Haffey was out here 10 days after Las Conchas burned through, the locust sprouts were already a foot tall. "That was with zero rain," he says.

But there are also rabbits and squirrels here, and a chipmunk runs past, its tail poking straight into the air. Where the aspens are taking over, it feels like this will be a forest someday. Not a ponderosa forest. But a forest, nonetheless.

Kathleen Brennan, a documentarian, and Shawn Skabelund, an installation artist, are here as part of the East Jemez Landscapes Futures project, which Haffey hopes can incorporate art and storytelling into land management. He's taking them into the burn scar so the artists can see what's been happening on the ground since Las Conchas in 2011 and the Dome Fire in 1996.

“Art and story can be used in ways to inform, engage and involve a community, and in Northern New Mexico, people have really strong ties to place,” he says. “I want art to be that conduit between communities, scientists and managers, and back and forth.”

He envisions an art collaborative, and soliciting art from local communities which can be exhibited in lobbies and visitors centers. “That would allow for people, as individuals or groups, to tell their story of how those big fires and landscape-scale changes affected them.” This idea isn’t separate, in his mind, from managing the land for healthy fire, species diversity and a warmer future.

Art and storytelling could be fundamental to that process, too. “We’ve all been to workshops with managers and scientists, we’ve been on the ground, walking around on the ‘Craig Allen field trip,’” he says, referring to the USGS scientist who’s been studying the forests in the Jemez since the 1980s and is, hands-down, the expert on what’s happening here. Allen is also one of Haffey’s mentors. “Maybe we replace Craig in this picture with an artist, and we have different conversations and different questions from participants.”

He thinks that’s one way to move forward as a community, as scientists and as land managers—to integrate not just science, but also art and story into land management strategies. “I’m still looking for help on that,” he laughs.

Driving further, we crest a hill. Everything changes.

The hills are stripped bare. Looking out across tens of thousands of acres, every canyon, divot and lump on the landscape is visible. It’s like looking at a map online. Slide the cursor to the left to see the vegetation; slide it right to see the geology. Only this is real life, and I’m overlooking what used to be a ponderosa forest and now looks like the Guadalupe Mountains in West Texas.

“I’ve probably taken about 100 people out here,” Haffey says. “I never get used to the scale of this.” In the canyon below, we can make out the matchstick skeletons of ponderosas. “Those survived the Dome Fire,” he says. “Hand crews saved those stands.”

Collin Haffey and Sasha Stortz look down into the “heart of darkness” on a visit there in April. Laura Paskus

But then Las Conchas roared through.

Haffey talks about those wild initial days of the fire, which broke out at the end of June. “It was still burning at midnight, long after normal fire weather,” he says. “Las Conchas broke all the rules. There were huge plumes blowing up, and then there’d be nothing to burn and the columns would collapse. It was like fluid dynamics more than fire.” Burning gases shot fireballs hundreds of feet into the air.

He describes seeing needles still on the trees right after the fire. They were flash-frozen, a grayish color. When the fire roared through the trees, it burned the windward side and created a back eddy on the leeward side, baking the needles rather than burning them.

Then we descend into the heart of darkness. We pass the spot where an abandoned campfire above Cochiti Canyon ignited the Dome Fire, then we park again. Everyone takes their time looking across the canyons, scuffling through the sands and pointing out scat or flakes of obsidian. In the canyon below, there are a handful of bighorn sheep.

The species had been extirpated from the area in the early 20th century. Biologists talked about relocating a population here earlier, but thanks to fire suppression and the dense forest that had grown up through the canyons, it wasn’t suitable habitat for the sheep. After Las Conchas, however, the New Mexico Department of Game and Fish moved Rocky Mountain bighorn sheep from the Wheeler Peak Wilderness to Cochiti Canyon.

Six years ago, we wouldn’t have been able to see more than a dozen feet ahead of us. Now, we look down the canyon, and hundreds of feet below the sheep peer up at us.

Then it’s off across a wide plain and up to St. Peter’s Dome. Today, the dome is a dusty knob on the eastern edge of the Jemez Mountains. In the Rio Grande Valley below, Cochiti Reservoir is visible. One side of the dome used to be covered with ponderosas and pines. On its other flank, it would have been a mixed alligator juniper and piñon forest.

Now, after the Dome and Las Conchas fires, patchy grasses push through the tan soil and scrubby oaks rattle with last fall’s orangish-brown leaves. “Historically, this was a frequent fire area,” Haffey explains, but it still would have been a pine forest. He didn’t live here before the Dome Fire, but from what he’s heard, this would have been a darker, more humid spot than it is today, when we’re gritty from the wind and dust. “We would be standing in the shadows, it would be hard to see through, crawl through.”

The biggest change since the Dome Fire, he says, was to those slopes miles to the west. “That was ponderosa as far as you can see.”

But he says that it’s pointless to feel depressed. It’s the first day of turkey season, and in addition to the hunters we’ve seen, there are three trucks parked on the dome, about 10 miles from the paved road, at the trailhead of a hike into Bandelier. While we’re eating lunch, two more guys pull up, hoping to get through the locked gate and four-wheel to the top of the dome. People talk about the weather, the view or ask for directions. Not one person we meet mentions the landscape or the fire scar.

There’s no returning the forest to what it once was, Haffey says. But the area can still be managed in a way that promotes a diversity of species. He and Sasha Stortz, from Northern Arizona University’s Landscape Conservation Initiative, talk about how some places out here still haven’t been surveyed or studied since Las Conchas and the floods and debris flows that wiped out fish populations. No one knows what might have come back since only bacteria and viruses likely survived.

“People say, ‘You don’t know what you’ve got until it’s gone,’” Stortz says, “but you also don’t know what you have until you know what was there before.”

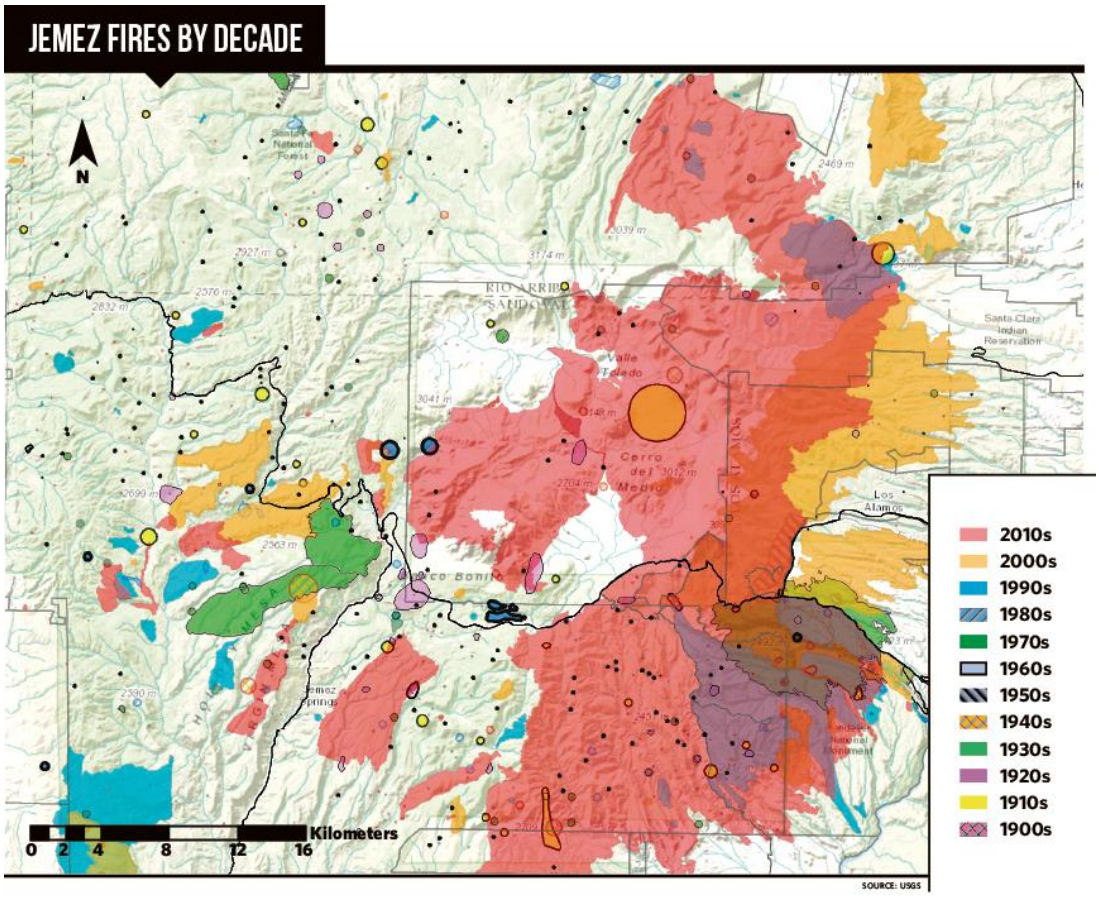
Haffey nods and adds, “And you don’t know until you go and look.”

Someone who has gone back, way back, is USGS research ecologist Ellis Margolis. He wants to know not just where fires have burned, but how they burned. He also wants to know if Las Conchas really was an extraordinary fire for the Jemez, or if fires burned like that before suppression and before they were recorded in government reports and news stories.

“People say, ‘The trees will come back. They always have,’” he says. “We’re digging in, to see.” There are multiple layers of evidence, including historical photos and written accounts, tree rings and fire scars and paleo-charcoal sediment records. “When you smash all those together,” he says, “you can get a really good record of what’s going on in any one location.”

We’ve all pressed our fingers to tree rings, looking for the fat rings representing wet years and the slim lines showing when times were dry. Some trees also respond to summer and winter precipitation, explains Margolis. Looking at those samples, dendrochronologists can gauge snowpack and the strength of the monsoons.

By cross-dating tree ring samples, Margolis can tell the story of fire in the Jemez from the present day all the way back to the mid-1500s. He and his colleagues have even identified some samples from the 1100s. In that record, he’s been able to identify more than 100 fires. Most of those were low-severity fires, in ponderosa and mixed conifer forests.



The year 1664 was his favorite, he says: “It was burning through the whole year. The monsoon was weak or shut down that year.” Another in 1729 had a huge footprint, likely bigger than the size of Las Conchas. And in 1752, a mid-summer fire burned just as big as Las Conchas, too, but was low-severity. In the following decades there were more; their scars fit together like a jigsaw puzzle on his map. Following a wet decade in the 1790s, a huge fire in 1801 burned about 300,000 acres. “There was fire all over the place,” he says. “That should be our goal, to get the good fire back in.”

So what about Las Conchas? Was it an uncharacteristic fire for the Jemez?

In the record, it’s not unusual to find fires bigger than 100,000 acres. But they were low-severity. Big fires burned in regular cycles, but they didn’t change the makeup of the forests.

“Once you wipe out the seeds’ source,” he says, “in a hotter environment, you can’t get those trees back into those areas, especially as it gets warmer and drier.”

In other words: No, those forests aren’t coming back.

After our goodbyes, I head back down the gravel road, past that patch of ponderosa pine that burned during Las Conchas. Water bubbles up from the ground where the last of the snow patches are melting or little seeps emerge from the ground. The air smells like vanilla and as the wind blows, it brushes through the green needles with a whisper.

I drive past the graduation flats and through the thickets of oak and locusts. At the turnoff to a road near Capulin Canyon, I park and start walking.

There’s a high whistle behind me, but even when I stop and turn, I can’t figure out where it’s coming from. It disappears by the time I cross an open patch of grass and come to a stand of a dozen live ponderosas. They’re maybe a hundred feet tall, their trunks mostly bare of live branches. But their crowns are tufted with live green needles.

The pine forests haven’t—and won’t—return to Cochiti Canyon. Laura Paskus

Everywhere else, there are waves of oak and walls of locust, punctured by the occasional charcoal-black trunks of ponderosas poking up like tapered, burned-out candles. Some look like sewing needles, blue sky peeking through holes eroded through the tops. One trunk rises 50 or 60 feet. Most of it is scorched, but a little more than halfway up from the ground, there's a chunk of brown wood still wrapped with bark. It's like a marshmallow shoved too far down a roasting stick.

From the edge of Alamo Canyon, White Rock is visible over the lip of a ridge and the Sangre de Cristos still have snow on their peaks. Across the entire vista, ponderosa trunks lie on the ground, pointing downhill on both sides of the canyon. The town is spotted with white buildings and the mountains in the distance are blue and white. But everything else is brown or gray. Until I see, on the near flank of the canyon below, the light green fuzz of aspen saplings.

In the road cut, there's coyote scat, and above, five or six turkey vultures circle, an ambassador occasionally breaking ranks to check me out. A pair of robins keep watch, and one nosey little bird—too far away to identify even with the camera's zoom lens—follows, flitting from the top of one scorched snag to the next.

There's also a red-tailed hawk and what looks like the peregrine we saw earlier in the day below St. Peter's Dome.

Back at the truck, I realize my skin is coated with sand, and I hear that whistling sound again. It's the wind from Capulin Canyon passing through the ponderosa skeletons.

This isn't a forest anymore.

Tens of thousands of acres of forests are gone from the Jemez Mountains. In our warming world, they won't grow back, and the evidence of that was clear today.

Leaving the burn scar and heading toward Jemez Springs on Highway 4, I don't relax into the landscape the way I thought I would. The forest looks too dark, too dense. I can't imagine living within this thicket. Where the Jemez River chugs alongside the road and the canyon widens out, the slopes above the road are monotonously green, crowded with tall pines.

These probably aren't the forests of our futures. And I finally, viscerally, understand what firefighters and land managers have been saying for decades: This forest is not sustainable in our warming world.

It took just one day in the burn scar to understand that.