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Ashes, Afterbirth, and Evacuation

Recovering from Hurricane Helene

Finding Refuge in a Fractured World



We Recover from Hurricane Helene

(And Seek Better Climate Resilience for the Future)

By Diana Leafé Christian and Grace Birch



In midday after the wind and rain subsided, residents of Earthaven's Hut Hamlet neighborhood, who'd hastily moved all their cars and storage-shed items to higher ground, were now stranded; their whole neighborhood became "Hamlet Island."

Carmen Lescher

At about 8:00 a.m. on the morning of Friday, September 27, the wind suddenly picked up. Bruce, Eric, and Zev, three Earthaven members from the Hut Hamlet neighborhood, wanted to check on their cars, and so made their way along a narrow trail in the trees uphill from the community's main road as the wind roared and rain pelted their faces. The forest rose steeply uphill to their right, and sloped down 50 feet or so to the main road. This was the third day of what they'd thought was just another rainstorm.

The night before, they'd parked their cars on the main road past our first bridge coming in, a low-water cement-and-culvert structure designed so the usual six to eight inches of flooded stream could flow easily over the bridge, and subside about an hour later. But that morning the wind picked up at an astonishing speed, tearing limbs off trees and hurling them through the air.

As they got about 150 feet along the trail, a huge uphill oak slowly tilted, groaned, and crashed onto the trail with a loud *thump!*, shaking the ground. Then another, and another heavy tree crashed across the trail.

"We need to get out of here!" Bruce yelled over the wind. "We could get killed!"

The three quickly made their way back along the trail, dodging flying branches and hearing and feeling tremendous thumps of more falling trees. "Huge red oaks were snapping like matchsticks," Bruce recalled. They finally reached their homes and safety, soaked through to the skin and abashed they hadn't realized the danger.

This was no ordinary storm, they now knew; this seemed far worse. "It felt like a freakin' hurricane," Bruce recalled. But hurricanes *never* swept this far inland. Did they?

"I'd never seen the creek like that," Bruce added. "It was like a river. The road coming down from the Village Terraces neighborhood was a river. Another Way was a river. The small creek to the east of the Hut Hamlet field was a river five or six feet deep. The nearby

Peace Garden was covered with water three to four feet deep. I couldn't believe it, I'd never seen anything like it."

This was the morning climate change suddenly arrived at our ecovillage.

Our Mountain Setting—Beautiful, and Sometimes Dangerous

Earthaven is located in western North Carolina's rainy southern Appalachian Mountains about an hour from Asheville. If you viewed us from the air you'd see steep and gentle slopes and ridge tops, tiny valleys covered with forest, small fields and pastures, and many streams and springs. The main gravel road enters from the west, with one small cluster of houses by the entrance. Another neighborhood is on the main road shortly beyond, then a low-water bridge crossing one of our streams, then the Village Center less than a mile in. Here the gravel road converges with several other roads on either side of our larger, second bridge—each road curving uphill and

leading to other small neighborhoods.

Most neighborhoods are built on gentle south-facing slopes, and most have massive trees growing on steep slopes above. Our small neighborhoods are widely separated from each other and accessible only by gravel roads, foot trails, and bridges. For this reason we're unable to see everything all at once, and so walk, bicycle, or drive a few minutes to get from one place to another. Our main road in is also our only exit, leading uphill and out of the village through our immediate rural neighborhood to "the top of the road," where it joins in a T-intersection to another mountain road, one which leads in opposite directions to two small towns 30 minutes away.

Our Village Center includes a large lawn, our Village Green; a round community building, our Council Hall; a large outdoor dining pavilion; and a small kitchen building. The Village Center is powered by a nearby micro-hydro system. Each household or whole neighborhood generates electricity from its off-grid photovoltaic (PV) power systems too, so our community is hardly ever without power.

Because we live in the mountains we don't have cell service on most parts of our land, and few landlines, so most of us now use voice-over-internet phone service and a local internet "bounce" service.

Like most mountain areas in the temperate zone we're blessed with abundant springs and streams. The streams flow downhill mostly from west to east, converging in some places and branching out in others. One stream runs along our main road in two places. The main road crosses streams too, so we built bridges. The first bridge coming in is a concrete low-water bridge over small culverts; the second, just past the Village Center, is the "Crystal Bridge," arching over two large culverts, with low stone wall railings embedded with crystals. The third bridge shortly past that is a longer low-water bridge in the central Hut Hamlet neighborhood. Because of our wells and spring water, with power generated from our onsite PV and micro-hydro systems—we're hardly ever without water either.

Each time we have a multiple-day storm, especially after several days of rain followed by high winds, a few large trees usually fall. After the ground is saturated

by days of rain, tree roots become more loosely anchored in the ground. Wind gusting against branches and leaves is like wind pushing against a sail. If it blows for a long enough time and with enough force against loosened trees in rain-soaked ground, the trees can suddenly crash to the ground downhill. This is significant, as we build many of our homes on gentle slopes, saving our limited flat land for agriculture. But in these mountains gentle slopes almost always rise up to steep slopes with large trees. Our roads and parking lots are in areas surrounded by trees. Normal rain storms usually flood our first bridge temporarily, although not the two higher bridges further down the road.

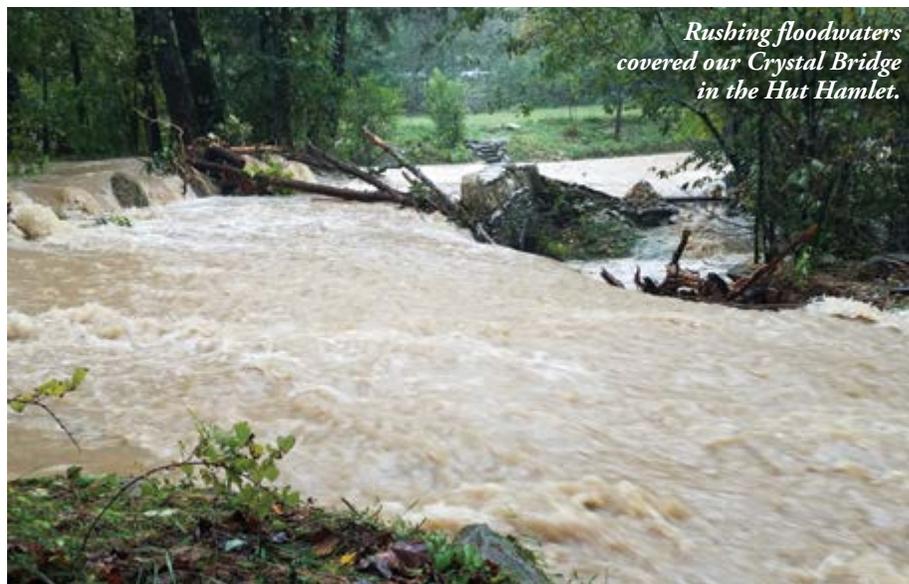
With Hurricane Helene, our beautiful setting became a trap, as you'll see.

Another Harrowing Expedition

About the same time that Bruce, Eric, and Zev were out on the trail, Greg, a certified public accountant, and Rachel, a farmer (one of our two Rachels), left the Village Terraces neighborhood to see if their cows were OK. They and other farmers kept cows and other livestock in the large pasture by the entrance gate. Greg and Rachel couldn't have contacted anyone who lived out by the pasture to check on the cows as the phones and internet were out, so they went to see for themselves. The wind and rain were intense. Because they couldn't use their flooded road, they cut across fields and short stretches of forest, dodging falling branches.

In the high wind and stinging rain, they hurried past the campground and turned towards the main road again where they'd emerge on the Village Center side of the first bridge, believing this part of the main road might be passable. But the bridge was now covered by a fast-moving current. The road just past the bridge next to the swollen stream was not flooded, held in check by the sandbag retaining wall Earthaven members had rushed to create years before to protect the road during a previous storm. But as Greg and Rachel watched with dismay, the swollen stream rose rapidly and spilled over onto the main road, demolishing and dispersing sandbags everywhere. To their amazement, the now-roaring stream immediately flooded the road, churned under and around a parked Prius, lifted it up, and carried it to a spot near the middle of the road. Just then a gigantic oak crashed across the flooded road the near side of the Prius, barely missing it, followed almost immediately by another oak splashing down on the far side.

They returned to the trees to cross the creek on an I-beam footbridge, but it too was now covered with five feet of water! Still determined to see their cows, they continued crossing fields and forest areas until they reached the pasture. But this smaller stream at the edge of the pasture was also too high and fast to cross. Realizing at that point there was no way to reach their cows while the storm raged, they turned back, dodging cracking and falling branches in dangerous forest areas, all senses on high alert. (We later learned their cows and all our other animals were OK.)



Rushing floodwaters covered our Crystal Bridge in the Hut Hamlet.

Courtesy of Diana Leaf Christian

Our Council Hall was packed with Earthaven residents and neighbors in our first meeting after the storm, with some having to ford the new river road and clamber over fallen trees to get there.



Dhyana Miller

When Greg and Rachel emerged from the field below their neighborhood, their flooded road looked about a foot deep, which Greg thought they could easily ford. But he misjudged the location of a drainage ditch, stepped in, and plunged into water up to his waist, where the swift current could have pulled him under. With effort he pulled himself out, drenched to the core and chilled by the wind. He and Rachel returned to Village Terraces, safe but shaken.

The Storm Dies Down...We Look Around

The Persimmon Grove neighborhood is located before the first bridge with no nearby stream, so we can always get out during a storm. Trees on the slopes are too far above most of our houses to threaten them. However, that morning massive oaks fell from the slope just above two tiny houses at the east end of our neighborhood—a miracle neither was flattened! Fortunately neither resident was home: Rachel was out looking for cows with Greg; Tam, an attorney and farmer, was actually down at the barn milking those cows, braving the wild wind and rain to get there. About midday the wind and rain died down, although the creeks were still rivers. We could hear the sound of chainsaws in the distance and assumed people were out cutting up fallen trees to clear them off the roads. When Andy, an electrician and Persimmon Grove resident, decided to go out to see, he discovered the main road between the tiny-house homesites and the Village Center had about 50 to 80 downed trees strewn across the road like toothpicks, including the massive oaks that now lay either side of the flooded Prius. Crossing fields and stretches of forest, he reached the Council Hall and Village Center.

Andy saw the Hut Hamlet was now cut off by the rushing river road, with the only way out being the treacherous tree-strewn trail some had tried earlier. Hamlet residents were marooned on an island. The road coming down from Village Terraces, though no longer flooded, was now blocked with fallen trees.

Hamlet residents also went out to see what was going on. It was clear that without phone service or internet and with trees blocking almost every road, the immediate challenge was to find ways to communicate with each other to learn if everyone was all right. People from Village Terraces neighborhood with the same idea had come downhill to the river road cutting off Hamlet Island. It was an especially poignant moment, Bruce recalls, as Village Terraces members shouted greetings and waved across the rushing water to their friends on the other side.

Many of us had walkie talkies at home, used to communicate during community work days. We soon realized that, with the internet down and no cell service, we could use these to call people. Village Terrace residents rushed back uphill to get their walkie talkies; one threw a walkie talkie across the river road to the crowd of Hamlet

residents—the first step in getting reconnected. People returned to their neighborhoods and spread the word to get out their walkie talkies, and soon people were able to reach each other.

We Rescue the Crystal Bridge

To get to the Hut Hamlet and Village Terraces neighborhoods, we cross the Crystal Bridge. But because its big culverts were now clogged with branches, rocks, and mud, water streamed over the bridge like a waterfall, damaging its stone railings. Scotty, skilled with earth-moving equipment, was intently hauling brush out of the culverts with an excavator, while 15-year-old Stone, immersed chest deep in the swift current, ducked under long enough to attach chains to logs and branches. Again and again Scotty drove the excavator forward, Stone plunged under the cold flood and hooked the chains to logs and branches, Scotty and the excavator heaved out the debris, and other Hamlet residents dragged them off the road. After about an hour of this strenuous work they'd cleared the culverts enough for the stream to first trickle and then rush through them again. The waterfall slowed down and stopped. Our beloved Crystal Bridge, though battered and bruised, was traversable again.

People were now coming down from all roads to see what was happening, and it soon became obvious to Andy we needed a community meeting to share news and learn if everyone was all right, assess the damage, and figure out what to do. So Andy called a meeting for 2:30 in the Council Hall, asking us to tell everyone we saw—"New Roots" (non-member residents) and neighbors outside the gate too. Word of the meeting spread fast over the next hour.

We Gather at the Council Hall

"Just getting to and from the Council Hall that first day was an ordeal," Bruce recalls. People in the Hamlet had to ford the still-raging stream to get to the third bridge, which had been knocked off its foundations and now tilted upwards. Some took their clothes off and held them over their heads as they crossed. "It was deep, up to my chest, and the current was strong," he continued. After fording the stream Hamlet residents had to heave

themselves up out of current to climb onto the tilted bridge. Once across the stream they still had to jump over gullies in the road and clamber over and under fallen trees. "Trees were down everywhere you looked," Bruce said, "many tangled up in clumps, some sticking up at an angle eight or nine feet in the air."

By 2:30 word had spread throughout the village and about 60-70 people from all over the land and neighbors outside Earthaven converged at the Council Hall. "First we needed to know if everyone was accounted for, especially those in the more distant neighborhoods," Andy recalled. "Was anyone trapped by fallen trees? Did everyone have enough food and water?" We learned no one was injured and everyone was safe, though it was worrying to know one villager's daily pain medicine would run out in a week. A family of five had been so concerned the night before about potential mudslides from the cut bank uphill of their site they'd slept in the Council Hall.

At this first meeting people didn't so much express grief as confusion. Radios were out everywhere; there was no signal and we had no news of the outside world. "We were all stunned," Bruce remembers. "We were really happy to be alive and know everyone was OK, but we were also just...stunned."

After learning everyone was safe, we realized our first tasks were to clear pathways through tangles of fallen trees blocking roads and driveways and survey our damage. At that point we believed we'd be able to clear all the fallen trees in three or four days and be able to get out. However with no outside communication, and assuming that if this many trees were down here they'd also be blocking roads in the

wider area, we actually had no idea when we might be able to leave again. When could we next get food, medicine, and other supplies?

Assessing the Damage

"Many of us were astonished at the damage," Bruce recalls. "Fallen and broken trees everywhere. Gullies in the roads two to three feet deep; one almost five feet deep."

Not only was the sandbag retaining wall now smashed apart, but a second retaining wall of massive cement barrier blocks was also demolished by the flood, the huge blocks tossed across the road like tinker toys. Streams were choked with trees and brush. The micro-hydro system for the Village Center was damaged but still functioning. Our Free Store, an old hunting cabin where we'd drop off and pick up giveaway items, was knocked off its foundations and tilting dangerously.

An older couple's Earthship home had been damaged and some of its solar panels cracked. A mudslide partially covered the construction site of the family of five. Our fundraiser Amy's Hobbit House was badly damaged, though fortunately she wasn't there at the time. This three-story structure has a cob and earth-brick first floor and stick-framed second and third floors. A huge oak had crushed half of the third floor, splitting and smashing its metal roof into shards and compressing the second floor so its doors could no longer open or close. Sections of the back wall of both floors were torn open, leaving the interior exposed to the elements.

The Hut Hamlet was the most badly damaged. Besides erosion of part the low stone wall railings of the Crystal Bridge and our third bridge knocked off its foundations, a narrow wooden footbridge leading into the neighborhood had washed away. The Hamlet's water system was damaged. Although the neighborhood's 10,000-gallon holding tank was full, no new water could flow in, so Hamlet residents would be on drought rationing soon. A cabin had damage to its roof and a retaining wall. High winds had forced rain sideways into and under the metal roof seams of Bruce's house and water streamed into the floor. A cabinet shop was flooded, mud inside everywhere.

However, neighborhoods where trees had been cleared uphill of the houses and with no roads adjacent to streams were relatively undamaged.

Getting Organized

Unlike almost all neighbors in that part of southern Appalachia, Earthaven still had power and water: our PV and hydro systems still functioned. Our storm-damaged micro-hydro still worked, and neighborhood water tanks were all full. So we set out to clear roads and driveways.

Many members, men and women both, are skilled in operating chainsaws and tractors. "At that point we quickly organized into 'Go!' mode," Andy recalls. People with these skills went off to cut trees apart and drag them off the road inside Earthaven so we could get from one place to another. Farmer, an electrician and builder, and several others were intent on clearing the road leading out of Earthaven to learn if we could get out at all, and, if so, what was happening in the outside world. Andy volunteered to help organize daily morning and afternoon road-clearing crews.

Grace Birch



On our main road, gravel washed away and eroded, with some gullies five feet deep; our beloved Crystal Bridge was damaged; and our Free Store cabin flooded out and was knocked off its foundations.



Grace Birch

That first afternoon our beautiful cooks—many who were also community leaders, farmers, or chainsaw-wielding road-crew workers—immediately began preparing dinner for us and our neighbors.

Normally we have meals at home and share a community meal at a weekly cookout. However, we realized we'd be better off organizing lunches and dinners for everyone for a while, partly to save time by consolidating our food and meal preparation and share meals in one central place, and partly to connect every day for emotional support. Many of our members grew vegetables; some raised cows, pigs, sheep, or chickens on small agricultural sites leased from the community. Some had stores of dehydrated food, water-canned food, or frozen food. "Our family of five had three months of food and our neighbor Leon had a half-acre of sweet potatoes ready to dig up," recalls our other Rachel, a meeting facilitator and community governance leader. "We did the math at that meeting and figured we collectively had enough food on hand to feed ourselves for a month."

While other villagers went off to clear roads, Rachel and several other leader-facilitators gathered available food and assembled in the kitchen to prepare dinner for everyone, given what we expected would be an afternoon's grueling labor. Our nonprofit educational organization, School of Integrated Living (SOIL), had recently bought enough food to feed participants for an outdoor workshop, which we'd canceled three days earlier given the expected storm. Fortunately that food could feed everyone for an estimated two days. We decided to prepare daily community lunches and dinner for however long was needed, and invite our outside neighbors too, as we knew most of them couldn't cook without power or water and may not have much food on hand either. That evening our leader/facilitator cooks prepared a hearty dinner for everyone, knowing many would return in a few hours, hungry and exhausted.

Clearing Roads in Water up to Our Knees

Many Earthaven members are adept at felling trees so they will land exactly where we want them—quite different from trees in rain-soaked ground hurled down by wind.



NikiAnne Feinberg



Grace Birch

After our first Council meeting we immediately started cutting apart fallen trees and dragging logs and brush off our roads by hand and with our older tractor.

Dozens of fallen trees had knocked into other trees, creating tangles of branches and trunks snaking out at crazy angles, and often in still-flooded roads.

We couldn't cut trunks into the eight- to 12-foot lengths we usually do to mill them locally into dimensional lumber. Our newer tractor, powerful enough to drag heavy trunks off the road, was still marooned on Hamlet Island, though we had access to our older, less powerful tractor. Because much of the road beyond the Crystal Bridge was still a small river, we could only start clearing roads up to the Hut Hamlet, though not in any neighborhoods beyond. Our work crews cut trunks into short lengths light enough for our older tractor to push or drag off the road.

Even with the tractor, skilled chainsaw operators, and enough people to drag trunks and branches, the job was quite dangerous at this point. First, tangled-up trunks and branches are often under tension and when cutting the branches releases the tension, they can suddenly twist and fly outwards and injure people.

"It was also dangerous to use chainsaws while trying to balance in chilly water up to our knees," Andy recalls. People could lose their footing in the strong current and fall in, risking losing control of their still-running chainsaws and sustaining severe injury. Trying to manage this precise and demanding task in fast-flowing streams was also uncomfortable. People became thoroughly chilled, many shaking with the effort of concentrating on safely cutting apart tangled trees while balancing knee-deep in cold rushing water.

We Venture Beyond the Gate

Our road to the front gate was passable now, so Farmer and several others jumped

in a van with chainsaws and ropes. They spent hours clearing one tangle of trees and downed power lines after another, reaching the top of the road and the T-intersection about an hour before dark. Several neighbors joined them, and this larger group began clearing trees on the road leading to one of the towns.

Their work was also dangerous, partly from cutting into trees under tension, and partly because people dragging brush had to get close to workers with running chainsaws, so the latter could reach the next tangle of branches. And it was risky for inexperienced people to work so close together, as they could get in each other's way and get cut. Farmer was hyper-focused on clearing as many trees as he could while constantly looking around to make sure everyone was safe.

As they came around the first bend they were blocked by a mudslide—a chaotic mix of mud, trees, and construction debris from above—and beyond that, a brand new waterfall 15 feet wide and several feet deep rushing down the slope and eroding out the road below. An underground culvert must have clogged up, they thought. The rushing torrent was carving a channel down the slope, eating the asphalt on the outer edge of the road and undercutting the bank beneath, leaving only one lane barely wide enough to drive on. “Oh, my god; this is really it!” Farmer thought, shocked by the magnitude of the destruction. Assuming the road might be like this all the way to town, he wondered if we'd ever get out of Earthaven again. It was now full dark, so they stopped for the night.

The Flood Recedes

By the next morning, Saturday, September 28, the stream by the main road had dropped enough that Hamlet residents could get out, though still with difficulty. Much of the road near the Hamlet was blocked by trees, covered with water ankle-deep, and pockmarked by divots and gullies, with all the gravel washed away.

At the 9:30 and 2:30 meetings even more people gathered in the Village Center. Three inside-the-property crews left to clear Earthaven's roads and driveways, each heading off in a different direction and working from the center out, as Farmer and the outside-the-property crew con-

tinued clearing the roads beyond the gate.

To backfill the eroded gullies on either side of the third bridge and Crystal Bridge, we needed to dump huge amounts of soil into the gullies and pack it down hard, which required liberating the beefier new tractor from the Hamlet. Andy drove the tractor to the lowest part of the still-high stream, while Scotty shouted instructions about when to throttle up or slow down, drive forward or back up. Andy charged the tractor full speed ahead through the rapid current, with water halfway up the wheels. Just as he made it most of the way to the other side the tractor plunged into deep mud, leaving it halfway in and halfway out of the stream. Finally one of our members in a truck hauled the tractor the rest of the way out.

To the distant buzz of chainsaws and chugging of tractor engines, and the new whop-whop-whop of helicopters flying low overhead, our cooks prepared the day's lunch and dinner. At each meal our crews reported their progress. We slowly understood how serious the storm had been from the outward crew, who told us how badly damaged the roads and many houses were outside Earthaven.

Our First Council Meeting

That afternoon of the second day we held our first official business meeting, a “Council Meeting.” We'd realized we needed two kinds of meetings: Council Meetings to plan strategies and decide next steps, and informal morning and afternoon meetings to organize work crews.

We debated various strategies to repair the worst road damage between Persimmon Grove and the Hamlet, but by the time the meeting ended Scotty had already half-repaired it. Using the newly liberated tractor he'd packed dirt back into the gullies so the road was drivable again. Leon, a farmer neighbor just outside our gate, then used his excavator to drag many of the trunks, branches, and other brush out of the way in a nearby field.

While we were certainly making progress, we still had no internet, cell service, landlines, or radio signals. We communicated with each other only at meals or by walkie talkie. We still didn't know the extent of the storm damage.

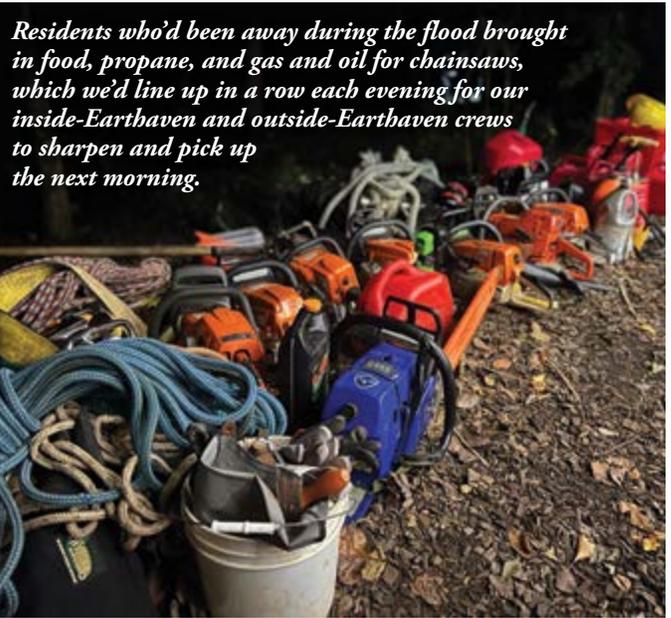
We Get Internet Again...and Learn How Bad It Was

The third day, Sunday, our neighbor Allie loaned us her satellite dish, which we immediately set up near the Council Hall. Being able to connect with the outside world again was an immense relief—now we could let our friends and relatives know we were all right, and our telecommuters could resume their jobs. But it was also heartbreaking. We gradually learned over the next few days, to our increasing dismay and alarm—and for some, a dawning sense of horror—just how bad the destruction had been, and over a wider area than we'd realized. We learned many in western North Carolina and eastern Tennessee were homeless, or trapped in their homes with trees blocking their driveways



Sometimes when releasing downed trees under tension, chainsaw operators had to quickly leap out of the way as logs suddenly flew through the air.

Griffin Abee



Residents who'd been away during the flood brought in food, propane, and gas and oil for chainsaws, which we'd line up in a row each evening for our inside-Earthaven and outside-Earthaven crews to sharpen and pick up the next morning.

and little to no water, food, or power. People had died, killed by drowning, falling trees, or mudslides. We realized the constant low-flying helicopters were rescuing stranded people and ferrying out the dead. Some of the nearby towns along rivers were badly damaged. One of our closest towns, Chimney Rock, a single row of houses and shops along a road hugging a river, was completely wiped out—the river had changed course, the road had vanished, the buildings now twisted, tangled wrecks.

Emergency Supplies!

While one road leading to a nearby town was blocked, the other was passable, but dangerous. Saturated soil on steep slopes above and below the road could give way anytime with more falling trees, mudslides, and road washouts.

Fortunately, two of our members had been away during the storm. Liz, one of our farmers and governance leaders, was the first to return with a truckload of food and supplies—demonstrating to us we *could* still get in and out on one recently cleared road, though precariously.

Then Christian, a nonprofit administrator, arrived from Charlotte, a city two hours away where he worked during the week, with a truckload of rice, beans, and other bulk food items; chainsaw supplies; and 150 gallons of diesel fuel and gas. Taking a series of small back roads, he skirted mudslides and washouts and fallen trees. At one point where a mudslide covered the road, one man on an excavator, another on a bobcat, and members of a local church were working hard to clear the road. Christian grabbed his shovel and joined them, shoveling mud he sank into up to his knees. After about an hour they'd cleared the mudslide enough to drive around, and Christian finally reached Earthaven late that night. He continued bringing truckloads of supplies from Charlotte every week for the next few weeks.

Our New Normal

Over the 10 days or so after the storm we settled into the same daily routine. Every morning we'd line up our chainsaws and gas cans at the end of the dining pavilion, and someone would sharpen the chains before the work crews headed out. Each crew had eight or 10 people and three to six chainsaws each, Andy recalls, with some people designated to cut up trees and others to drag branches and brush off the road. Our outside crew kept running into other people further along the roads out who were clearing stretches of the road too, and began to have hope that soon the entire road to our nearby towns would be cleared and we'd be able to get out after all.

After a few days a whole group of Earthaven residents converged on Amy's crushed

Hobbit House. They first cut off the largest branches of the fallen oak and tied a rope around the trunk. Then they'd yell, "One, Two, Three—heave!" and haul the massive weight with all their might, doing this over and over moving the tree a few inches or feet at a time, finally managing to haul it off the roof. Later, Earthaven carpenters crawled under the broken roof and pushed it back into place and straightened out the sharp pieces of metal roof, then built a temporary frame with a tarp to keep out the elements.

Due to the widespread damage to our region many villagers couldn't go to work, and didn't know if their jobs still existed. One member's house-cleaning service was based mostly in Chimney Rock—now completely wiped out. Bruce couldn't get to his teaching job in Asheville, but Asheville was so hard-hit the school was probably not open anyway. However, now that we had internet again, some could resume their jobs. Greg returned to his work as a CPA, Amy could now continue her work on Earthaven's Development Team and fundraising, and both managed to grab up chainsaws and join the road crews for part of the day.

Our local volunteer fire department was ordinarily *the* central communication hub and emergency supply depot for our local fire district, but it was now without power or water. They asked Farmer for help in restoring electricity so he and several of the outside crew drove to the district

We met each morning in the Village Center to plan the day's road-clearing work, with the goal to cut up fallen trees and drag them off the road, using our chainsaws, dump truck, tractors, and excavator.

Grace Birch



NikiAnne Feinberg

headquarters. The site was a disaster! The first floor had been five feet under water and was now inches deep in mud. Their back-up generator was damaged. They'd lost two vehicles and their propane tank had floated down the river.

Standing in mud up to his ankles in the utility room—now a mad jumble of muddy wires, plumbing hoses, and an old air compressor—Farmer began clearing mud out of the breaker panels, as others mucked out the first floor with shovels. People were coming in and going out of the building at all hours, desperate for help and seeking food, water, and supplies. Finally the fire department chief called a halt to all the visitors, and asked local churches in the area to become their own neighborhood supply depots, as it would be a long time before the fire department could help people again. Farmer got the fire department headquarters breaker panels working, and the nearby Stone Mountain Baptist Church became our local central supply depot, where villagers dropped off and picked up supplies

for neighbors in need.

Each afternoon we'd hold a Council Meeting to plan next steps. "During our first meetings, we were just one big circle of Earthaven residents and neighbors all making decisions together about whatever we needed to do," recalls Kaitlin, who had served as Earthaven's president, our "Firekeeper," several times. "But as the days went on we returned to the usual way we organize specialized work," she continued, "with different groups of people clearing roads and repairing structural damage, feeding people, handling communications inside the community and with the outside, addressing health and wellness issues, or managing finances and fundraising."

Our cooks prepared daily lunches and dinners for everyone, including many neighbors. Some were neighbors and friends who had been closely involved with Earthaven for years; others we hadn't met yet but needed help. The Council Hall became our information hub: every day we'd update our Roads Board, describing road conditions, and our Needs Board where people wrote what they needed and offers of help. Villagers and many neighbors converged at the Council Hall daily for news, water, food, internet, and the relief of seeing other people. "The Council Hall was like a beehive all the time," Bruce recalls.

Our Healers Mobilize

Members of Earthaven's Care Team normally organize hot meals, rides to town, and other services for villagers and neighbors who are ill or having other difficulties. We also have many healers, offering modalities ranging from craniosacral therapy, nursing, and naturopathy, to acupuncture, Reiki, empathetic listening, and psychotherapy. Care Team members and many of our healers realized we also needed to provide medical help for anyone injured in the road-clearing work and comfort anyone with emotional distress or even trauma from what we'd all just been through, so they set up two healing tents on the Village Green—one to treat physical issues; the other to address emotional

Our daily routine: repairing our damage and helping neighbors, meeting to plan our work, and sharing community meals. Our Council Hall became the news and communications hub for everyone.



Grace Birch

For 10 days after the flood we enjoyed connecting our friends and neighbors every day at lunches and dinners.



Grace Birch

Our healers prepared a table of herbal tinctures and first aid supplies, and set up healing tents with a daily schedule of healers for Earthaven residents and neighbors in need. We quickly organized into teams and roles.



Grace Birch

Dhyana Miller

issues and trauma. Various healers and empathetic listeners were scheduled to help at different times of day with a sign-up sheet to reserve the help.

People’s emotional responses ranged from excitement about how quickly we were clearing roads and helping neighbors, to feeling devastated and depressed. One villager, for example, didn’t leave her house. When she finally emerged she seemed lost and barely able to speak. Another told us at first he’d felt stunned and demoralized. “Even though we were accomplishing so much, I still thought we all might die. I had no idea how long it might take to dig ourselves out, or how we’d survive without more food and supplies. If another storm washed out the only road out, how would we ever get out?”

Some were worried that FEMA would funnel emergency resources to cities first and rural areas last, leaving us vulnerable to running out of food or needing emergency medical supplies. Still others were grieving the widespread death and destruction in the towns around us—the constant low-flying helicopters reminding us every day. It was a poignant time. Many of us felt elated that we were doing so well that we now had energy, time, and skills to help ourselves and neighbors, but as we continued to learn of the widespread devastation, we wondered if we had the right to feel so good when others in the region were desperate for food and water or grieving the loss of loved ones.

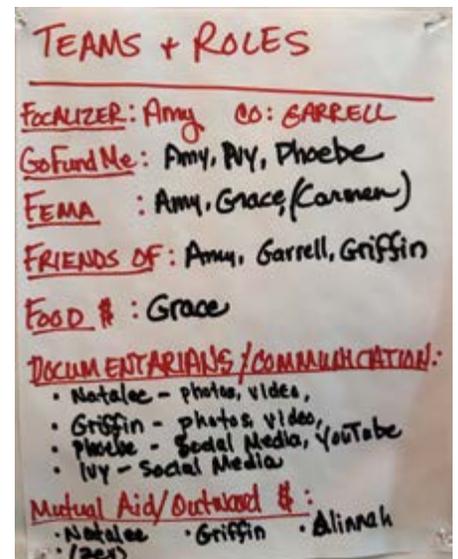
Two weeks into our recovery, facilitator and leader Rachel wrote in the Earthaven newsletter, “the intensity of the shock and devastation has worn off, the high of togetherness and the ‘We can do it!’ energy wanes, and we, as well as all of western North Carolina, are left with deep exhaustion looking at a long road ahead. We are slowing our pace, ending emergency protocols, and strategizing about how to move forward. We can do that because we have homes to rest in and power to cook with. So many do not. We are so fortunate and full of gratitude, while also grief-stricken at the state of the lives of our friends, neighbors, nearby towns, and the entire region.”

Our Fundraisers Leap into Action

Now that we had internet, our fundraiser Amy and other members of the fundraising team contacted several large donors and started our first GoFundMe campaign, seeking funds to repair roads and bridges, purchase emergency food and other supplies, reimburse Liz and Christian for their expenses, and even pay Allie a little for the kind loan of her satellite dish.

Amy and her team figured out how the FEMA process worked and helped register Earthaven members for FEMA funds. The team took photos and videos to document our damage and recovery efforts, promoted our campaign on social media, thanked our donors, and reported on our progress in our daily Council Meetings.

The GoFundMe campaign took off right away, enabled, Amy believes, by national news coverage of the devastation in this area; the large base of support Earthaven has



Grace Birch

built over three decades from all our tours, classes, work exchange programs; and years of good will from family members and friends of Earthaven residents.

The team promoted the GoFundMe campaign on Earthaven’s Facebook and Instagram accounts and email list, and to Amy’s own network of donors from her past nonprofit work. She was already a part of hundreds of social media groups focused on environmental and community interests with the same kinds of values and goals as Earthaven, and she joined more. She and the team posted messages describing the impacts of the hurricane on Earthaven, what we’re raising money for, and asking people to donate if they felt moved to support us. They also asked Earthaven people to share posts from the Earthaven Facebook page on their own Facebook pages, and to

ask friends to share these also. They asked villagers to forward these posts to friends and family members. This worked well; the family of one close friend and neighbor donated several thousand dollars, and many others followed suit.

Over the next few weeks our first GoFundMe campaign raised almost \$120,000.

We Gradually Restore Our Village

Over the next several weeks we continued clearing roads and repairing damage. We helped Leon harvest his sweet potatoes, and helped Adam and his family clear the mudslide off their new construction site. Bruce and Scotty located and fixed the problem in the Hut Hamlet water line and the Hamlet could fill their tank again. Andy and another electrician, Matt, repaired the micro-hydro system powering the Council Hall and Village Center. It wasn't badly damaged, but they still thoroughly cleaned every part and replaced its valves and bearings with new ones we had on hand. "We took this as an opportunity to make the hydro system much better able to handle future floods," Andy told us. "Many of us realized it's time we create more resilience for future storms."

We finally did get out to the two nearest towns, which required driving carefully on severely damaged roads, skirting partially cleared mudslides and stretches eroded to barely one lane and marked with traffic cones. The towns sustained heavy flood damage but at least they were there, and FEMA and the National Guard were distributing food, water, and other supplies. Some brave souls made it all the way to Asheville, which was equally devastated.

In later weeks Leon operated an excavator and Johnny helped on the ground to set the third bridge back on its foundations. We spent a morning at the Free Store, removing all its giveaway items and preparing it to later be torn down. Brandon, also skilled in earth-moving equipment, operated an excavator, and, with a ground crew, spent several days repairing gullies on either side of the Crystal Bridge and repositioning big rocks to stabilize its bank below. Brandon also spent days on the excavator building new earth-bermed retaining walls to protect the main road from future floods. Our Care Team continued visiting people in distress, our healers still offered help in the healing tents, and Amy and our fundraising team carried on promoting our GoFundMe campaign.

"We were able to accomplish so much," Kaitlin recalls, "because we already had years of experience managing our community. Learning all the needed physical labor tasks and relying on the self-governance process we've all done over all the years laid the foundation for how well we're able to handle emergencies—to know what's needed, and organize ourselves step-by-step. Having lived and worked together at Earthaven over many years made it possible for us to recover as well as we did."

Amy also remembers the days and weeks after the storm. "I was moved to tears by all the energy and love people put into all the work we had to do. People just 'threw down' from the moment they woke up in the morning until they dropped from exhaustion at night."



NikiAnne Feinberg

Our excavator operator and a crew of helpers repaired our massive-block retaining wall.

Creating Resiliency in the Face of Climate Risk

When Earthaven was founded, climate change resilience was captured in the process that our early Permaculture designers followed: Design a human settlement that is attuned to our ecology and the dynamics of water, fire, wind, plants, and animals.

"Climate Change (as we know it today) may have not been an original design lens in 1995 when we were first laying out Earthaven," said Zev, founder of a local mutual-aid nonprofit, Cooperate Western North Carolina. "But what our founders were doing was designing resilient systems that provide for humans in all kinds of different circumstances, and attune to the actual ways that energy and materials flow in systems."

Examples of how we apply resilient systems at Earthaven include catching and distributing stormwater into landscapes, composting and creating topsoil that is less likely to erode, emphasizing plant diversity to prevent pests and disease—and of course using alternative sources of energy. Our strong social fabric as well as our existing social structure and community governance were also key to weathering challenges of the storm.

"Social systems are similar to ecological systems in the sense that the things that make a good community are also the things that make effective disaster response," Zev added. "Things that make effective ecological design also make effective climate resilience design. When disasters come they can shine an intense spotlight on where our weak points are, but a lot of people here have been talking about those weak points for a long time." (See "Earthaven Member Facilitates Mutual Aid in Hurricane Helene Territory," p. 20.)

Earthaven continues to explore ways to strengthen food systems on the land; support our village-scale economy, housing plans, energy independence, and care for our land; and expand our mission-based impact. Our roads hugging the streams were built 100 years ago. Why don't we move them to higher ground in this time of climate change? The storm sparked us to seek funding in a new GoFundMe campaign to reroute our roads out of the floodplain, rebuild damaged bridges in a

Earthaven's GoFundMe Campaign to Develop More Climate Resilience

This crowdfunding campaign seeks funds to support Earthaven's readiness for future storms by moving the community's main road to higher ground, stabilizing creek banks, and improving riparian zones along creeks, as well as harvesting what we learn about climate adaptation to share with other communities. If you feel moved to support the community's efforts, please donate online at www.gofundme.com/f/Earthaven-Climate-Resilience, call (828) 419-4460, or email Amy@earthaveneducation.org.

If you'd like to contribute to helping repair Amy's damaged Hobbit House, here's the GoFundMe account: www.gofundme.com/f/AmysHome.

Six Climate Resilience Tips for our Readers

Earthaven has been gathering what we're learning about climate resilience to share as part of our living laboratory model of social change. Download our offering, "Rooted in Resilience: 6 Simple Tips for Climate Resilience," from the Earthaven home page, www.earthaven.org.

—DLC

Earthaven Member Facilitates Mutual Aid in Hurricane Helene Territory

Cooperate WNC, founded by Earthaven member Zev Friedman, is a nonprofit working since 2018 to develop a mutual aid network in western North Carolina, with relationships with individuals and groups in all 22 counties of western North Carolina. Cooperate WNC activities include purchasing and distributing bulk food throughout rural hubs, facilitating training work around transformational conflict systems, and assisting groups in forming savings pools with cooperative financing. The organization focuses on different scales of cooperation and resource-sharing to help make people's lives better in western North Carolina and create more collective power through its connective platforms and events. Upcoming initiatives include access to land for farming and focusing on affordable housing. Cooperate WNC: cooperatewnc.org.

—GB

way that works with the natural flow of our streams and springs, restore our riparian zones, and look ahead to our longer-term resilience goals.

"When we shift to climate-adaptive approaches, we save time, energy, money, and possibly human lives down the line," said Amy. "The opportunity cost of rebuilding and fighting to maintain a home, road, or anything else that wasn't designed with nature in mind—only to see greater damage in the next storm—is too high. For our own well-being, for the land, and for our budgets, it makes more sense to work with nature than to fight against it.

"We've been raising funds through grants, donations, and loans for the expensive task of repairing our roads, bridges, and riparian zones, and clearing the immense tree fall before it becomes wildfire fodder.

"We want to do more than minimal recovery," she continued. "The world is being called to respond to climate change in an adaptive way. So we want to approach our recovery through a resiliency and adaptation lens. Rather than just fixing our roads and bridges, we want to stabilize our creek banks and do a better job of tending our riparian zones. And instead of continually repairing our main road after storms, the most climate-adaptive and ecologically sound approach is to surrender that part of the land back to the creek and move the road to higher ground." (See "Earthaven's GoFundMe Campaign to Develop More Climate Resilience," left.)

National Public Radio (NPR) visited Earthaven in April to highlight strengths and strategies ecovillages have to offer the world for greater climate resilience. (See "Six Climate Resilience Tips for our Readers," left.)

The contrast between Hurricane Helene's impacts on Earthaven and its impacts elsewhere in western North Carolina deeply underscored the decades of work we've done to create and strengthen our ecovillage as a living laboratory for a regenerative future. "Our resilience didn't come from last-minute efforts," observes our facilitator/leader Rachel. "It came from decades of designing and growing a community with ecologically and socially regenerative principles and lifestyles in mind." 🐦

*Diana Leafe Christian and Grace Birch are friends and neighbors at Earthaven. Grace is a journalist and publicist with New Orleans roots and has over 20 years' experience in communications and hurricanes. Diana, author of *Creating a Life Together* and *Finding Community*, speaks at conferences, offers consultations, and leads workshops and online training on creating successful new communities, on working effectively with conflict in community, and on Sociocracy—an especially effective self-governance and decision-making method.*

The authors thank Andy Bosley, Amy Belanger, Bruce Johnston, Chris Farmer, Greg Clark, Griffin Abee, Kaitlin Ilya Wolf, Rachel Fee, Zev Friedman, and many other villagers they spoke with for kindly sharing stories, and those who worked so valiantly to make sure everyone on the land and all the neighbors we could reach were safely housed, fed, and comforted in the devastating aftermath of the storm.



We aim to make our community more climate-resilient both now and for these Earthaven people, our future generations.

Courtesy of Diana Leafe Christian

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Diverse groups help to provide support, education, and networking for those interested in and/or living in ecovillages and other intentional communities worldwide, including:

- FIC (Foundation for Intentional Community): ic.org
- BIPOC ICC (BIPOC Intentional Communities Council): bipocicc.org
- CohoUS (Cohousing Association of the United States): cohousing.org
- CSA (Communal Studies Association): communalstudies.org
- ICSA (International CSA): icsacommunity.org
- GEN (Global Ecovillage Network): ecovillage.org and its regions:
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ecovillage.org/region/gen-europe
ecovillage.org/region/casa
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- NextGEN (Youth Network): nextgen-ecovillage.org

We welcome stories and connections from throughout these and related networks, and hope to hear from you!

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