

20 YEARS AGO

A PERSONAL MOUNT ST. HELENS EXPERIENCE

WILLIAM S. FULLER

A FIRST-PERSON ACCOUNT OF THE VOLCANO'S DESTRUCTIVE POWER.

AN ACTIVE VOLCANO IS AN ATTRACTION ANYWHERE IN the world. An active volcano in the United States is a rare occurrence and a potentially dangerous curiosity. During the spring of 1980, the increasing activity of Mount St. Helens did not concern most of us Pacific Northwest natives. It was about 100 miles away from our home. Geologists monitoring it did not seem to be overly concerned. Most residents of the immediate area were evacuated and geologists watched over the volcano closely. Several safety zones were established around the mountain to restrict public access, including a "Red Zone" from zero to five miles, a "Blue Zone" from five to 10 miles out, and a roadblock at roughly 20 miles from the epicenter on the Spirit Lake Highway. Some logging continued by permit in the Blue Zone, but almost no access was permitted in the Red Zone.

Despite these precautions, Mount St. Helens became a tourist attraction. Campers enjoyed the diverse terrain of valleys, rivers, lakes, and a healthy second-growth forest. This forest was the primary resource for the large Weyerhaeuser complex of wood products and pulp and paper operations in nearby Longview, WA. I was familiar with this forest. As a wood technologist, I'd conducted several forest residual utilization studies aimed at recovering more wood from harvest operations.

On May 17, 1980, our family took one of our daughters to a Girl Scout event at a farm near Mount Rainier, one of the really big, dormant volcanoes of the region. We decided a side trip and picnic on the Toutle River near Mount St. Helens would be a fun way to complete the day. After lunch, the girls picked spring wildflowers at the

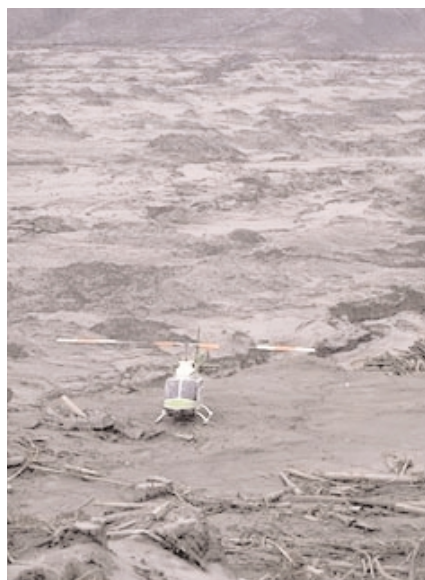
border of the Blue Zone. They played on the swings at the Harry Morgan State Park a little further down the river and saw wildlife of all kinds on the logging roads. It was a great day and the flowers went into a vase on the kitchen table that night.



The next morning, as we returned home from church, we heard news of an eruption. As we sat down to lunch, the television was tuned into non-stop news reports of the eruption. The eruption was not just a lot of ash and some lava that we had seen from other parts of the world. It was a violent explosion triggered by a landslide on the north slope that released tremendous

pressure from within the mountain. The entire summit and north slope of the mountain was blown away. A video shot from a helicopter showed a 20-foot mudflow moving rapidly down the Toutle River bed...right at the spot where we had picked the wildflowers just 24 hours earlier. The girls pressed and dried those flowers. They serve as a reminder that God had protected us from the unexpected and violent eruption.

Weyerhaeuser's timber and equipment losses in the eruption were enormous. A full generation of trees was lost. Salvage and reforestation was the only option. We had no experience in how to do this and it was decided to send in a study team. I was asked to join the team that also included a forester, a wood product engineer, a logger, and a forest engineer to study the blast zone. We made several helicopter trips into the blast zone beginning about a month after the blast. Armed with chain saws, measuring equipment, and dozens of rolls of film, we were some of the first people to set foot in the blast zone for the purpose of something other than hunting



for victims of the eruption. The helicopter kept running while we were on the ground and we stayed in constant radio contact. The volcano was still active, periodically erupting at a much smaller level than the initial blast.

The force of the blast made a direct hit on the ridges just across the lake from the North Slope. Only a few shredded stumps imbedded in bare rock remained. The entire forest was thrown over the ridge into the valley below. The hot blast leveled vast forest areas like straw. The stems were all lined up on the ground in one direction with most of the bark on the south side of the trees removed. Where the blast was diverted around a slope or a valley, the direction of felled trees shifted abruptly. Heavy logging equipment was overturned and logging towers twisted. As we traveled further away from the summit, the blast effects dissipated. Trees were still standing but were completely defoliated by the hot ash. Lakes and streams were completely filled with all shapes and sizes of wood chunks. We took roll after roll of photos and at times just stood in awe of the destruction.

Gray ash covered the entire area in depths up to a foot or more. It ranged from fine powder to beach sand size. Small eruptions after the main blast spewed out light pumice rocks that made great “show-and-tell” objects for the girls to take to school. Rocks that floated on water were great fun to show their friends.

Little of the wood in the blast zone was actually charred. A few fires started, but ash prevented them from spreading far. We concluded that the blast wood was damaged similar to what we had experienced in high wind blowdowns from hurricanes and other storms. The hot blast whipped the trees violently, breaking them off anywhere from the stump to about 1/3 the tree height. Uprooting was common, too. The breakage was extensive, but in addition, we found compression failures

caused by the whipping action. The compression “wrinkles” would fail under load if the wood was made into structural lumber. We recommended rapid salvage. Drying, fire, and eventually decay would further degrade the wood. The wood could be used for pulp chips or for wood products where high strength was not critical. Volcanic ash is highly abrasive. This required new chain saw materials and high efficiency air filters for all the motors on saws, trucks, and tractors. Bucking stems was time-consuming, as loggers had to inspect stems carefully for defects before deciding where to cut and then brush away ash to make the cuts.

The forestland showed signs of recovery within weeks of the blast. A herd of elk found their way back into the Toutle River valley, followed by coyotes, of course. Canadian thistle was sprouting up through inches of ash. That wasn’t surprising to me since it can sprout through inches of asphalt in my driveway. A few defoliated cottonwoods were resprouting from dormant buds. The recovery capacity of wildlife and forest plants was amazing to see. Weyerhaeuser’s commitment to quick salvage and replanting was rewarded by rapid seedling growth. Seedlings were planted by digging down to the old topsoil. Within three years, most of the wood had been salvaged and the new forest that flourishes today was established. Weyerhaeuser and its employees were at their best during this time. While technology played a part in the recovery, it was the creativity, resourcefulness, and teamwork that made it possible. Our family’s close call and the outstanding recovery operation stands out as a major highlight in my 33-year career at Weyerhaeuser. TJ

Fuller is scientific advisor, Weyerhaeuser Technology Center, Tacoma, WA; email: bill.fuller@weyerhaeuser.com