

The US Nuclear Weapons Program Left 'a Horrible Legacy' of Environmental Destruction and Death Across the Navajo Nation

Navajo uranium miners have died of lung cancer and other respiratory illnesses. They weren't told of the risks, and they want compensation for radiation exposure continued.

By Cheyanne M. Daniels
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Phil Harrison views a uranium loading bin left behind from the mining era, which stretched from the 1940s to the 1980s. Credit: Cheyanne M. Daniels/MNS

COVE CHAPTER, Ariz. — Phil Harrison walks the Lukachukai mountain range that towers over the Cove Chapter of the Navajo Nation in northeast Arizona. The mountains rise against a clear blue sky, and the red sand is dotted with sagebrush and flowers.

On a clear, warm day in May, he pauses, picks up a sprig of sagebrush and rubs it between his hands.

“This is good medicine; it restores your brain,” he says.

He brings the crushed sage to his nose and inhales the sharp scent, holding out his hand and showing the green leaves in his palm. “Boil it, run it through a filter and you can drink that and it restores your

memory, provides youth,” he says, then drops the sage and adds, “but I don’t know if this is contaminated.”

He shakes his head and moves on.

Despite the stunning beauty of the 27,000-square-mile Navajo Nation, which encompasses parts of Arizona, New Mexico and Utah, the land is marred by a toxic history: a “horrible legacy” of uranium mining and processing that began in 1944, with the U.S. nuclear weapons program and has slowly killed Navajo miners and their families, littered the land with 523 abandoned mines and tainted pristine aquifers with radioactive ore and the dry air with radioactive dust.

It’s a legacy Harrison is intimately familiar with.

Harrison, 70, and his father Phil Harrison Sr., were both uranium miners. Harrison worked in the mines for only three months, but his father worked there for 20 years and died at 44 from lung cancer. The 1990 Radiation Exposure Compensation Act presumes that an increased incidence of lung cancer and other respiratory illnesses among the miners was caused by large doses of radiation and other airborne hazards they were exposed to.

The Navajo fought for years to have this law enacted. To date, \$2.5 billion in benefits have been paid out to 37,000 claimants—uranium miners and so-called “downwinders” affected by nuclear weapons testing in the 1950s and 1960s at the Nevada Test Site, 65 miles northwest of Las Vegas.

Now, with the law scheduled to “sunset” in July 2022, another reckoning is at hand, as Harrison and other Navajo activists, downwinders, Catholic leaders and peace and environmental organizations like the Union of Concerned Scientists lobby Congress to extend the act and add new beneficiaries. Those include all uranium miners who have come down with cancer or respiratory illnesses since 1972 and thousands of additional downwinders in Nevada and Arizona.

“The tragic legacy of uranium mining on the Navajo Nation continues to this day, perhaps to an extent that would not have occurred if it weren’t taking place in a rural American Indian community,” Navajo Nation President Jonathan Nez told a House Judiciary subcommittee in March. In prior testimony, he referred to the Navajo’s “horrible legacy,” and said that “past uranium activity has devastated Navajo families, traditions, and our Mother Earth.”

With the Biden administration making environmental racism a top priority, and pressure building to extend the radiation compensation act, an international campaign is gaining momentum to make “ecocide”—systematic and longlasting environmental devastation—a crime, like genocide, before the International Criminal Court in the Hague.

The United States is not among the 123 member nations of the court and thus would not be subject to sanction for environmental destruction in America, should ecocide eventually become a crime, in a process that could take seven years or more. But ecocide’s champions say that making it an international crime would have a powerful moral impact by associating environmental destruction with genocide, crimes against humanity and war crimes that are an affront to humanity at large.

In their 1995 book “Ecocide of Native America: Environmental Destruction of Indian Lands and Peoples,” Donald A. Grinde Jr. and Bruce E. Johansen wrote that Kerr-McGee opened the first uranium mine on the Navajo Nation in 1948:

“There were no taxes at the time, no health, safety or pollution regulations, and few other jobs for the many Navajos recently home from service in World War II,” they wrote. “Labor was cheap. Thirty years after mining began, an increasing number of deaths from lung cancer made evident the fact Kerr-

McGee had held miners' lives as cheaply as their labor. As Navajo miners continued to die, children who played in water that had flowed over or through abandoned mines and tailing piles came home with burning sores."

Harrison, who is president of the Navajo Radiation Victims Committee, an organization of Navajo activists that began in the 1970s, grew up in that world, with his father and many of his father's cousins working in the mines. "They all died," he said. "I think there's like 10 of them that died from lung disease."

On his morning walk, he gestures to an empty expanse of grass in the Cover Chapter where there used to be homes, including his family's.

"This was ... happy homes, one time," he said. "And now they're all passed. It's really sad to go back over there."

Harrison points into the distance, where a few houses can be seen. "Probably around 300 miners from this area alone have passed on from lung disease or lung cancer," Harrison said. "The fathers are gone from this area. ... So it's just the widows and the kids."



Phil Harrison on a trail in the Lukachukai Mountain range; Navajo men used the trail in the 1940s through the 1980s to get to the uranium mines. Credit: Cheyanne M. Daniels/MNS

'Strong Evidence' Links Uranium Mining to Lung Cancer

Uranium mining began in the Southwest in 1944, when the United States no longer wanted to depend on foreign sourcing of the uranium that was needed for nuclear research and weapons development

as part of the Manhattan Project, the secret World War II effort to develop the atomic bomb. The federal government was the sole purchaser of uranium ore until 1971, but private companies operated the mines.

Navajo miners were not fully informed about the dangers of uranium mining specifically, despite the fact that scientists had concluded by the late 1930s that uranium mining caused lung cancer, even if debate existed about exactly why, according to a 2002 study published in the [American Journal of Public Health](#). The miners were not informed about the potential risks of their work.

The investigation focused on white miners, although mortality rates were reported for non-white miners. One study looked at 3,238 white miners, while a second involved 757 non-whites, [mainly Navajos](#). The studies were performed without the consent of the workers.

In both white and non-white cohorts, “[strong evidence](#)” was found for an increased incidence of lung cancer. In the study of 757 non-white miners, 10 deaths were expected, but 34 were documented, meaning researchers found more than three times the number of lung cancer deaths than they expected.

Tommy Reed, 64, a member of the Navajo Radiation Victims Committee who began working in a uranium mine when he was in high school, said his father was one of the Navajo miners studied.

“They studied my father and a lot of the men ... and ladies that were in the mines there,” Reed said. “My dad, like many other men that were (miners), spent nine months on a ventilator. How much more of our story can cut deep, where one can comprehend the struggle that we have?”

For Reed, extending the Radiation Exposure Compensation Act isn't to place blame but to ensure that other miners, uranium workers and downwinders are compensated for illnesses related to radiation exposure. But if he had to place blame, Reed said, he would point to the federal agencies that allowed the mining to take place and the related illnesses to go undiagnosed and untreated.

“They knew, and they had numbers on them. They studied, it's on the books, there were human experimentations,” said Reed.

“We're just five-finger people,” he said, using a Navajo word for human beings. “But these five-finger people are the ones that they relied on, the people that are most expendable.”

In response to this legacy of environmental destruction, death and racism, the Navajo Nation Council passed the Diné Natural Resources Protection Act in 2005 to mandate that “no further damage to the culture, society and economy of the Navajo Nation occurs because of uranium processing until all adverse economic, environmental and human health effects from past uranium mining” have been eliminated or substantially reduced.

Radioactive Waste Contaminates the Land and Water

Uranium is recovered from the earth in two ways. The first is conventional mining of the ore, in which miners dig the rock out of open pits that strip away the topsoil. The second, which is the most common extraction method in the United States, pumps chemicals into groundwater to dissolve uranium from the rock, known as “situ leaching.”

After the extraction, the ore is taken to mills, where it is crushed, ground up and dissolved to be solidified, dried and packaged.

Regardless of the extraction method, mining and milling uranium leaves behind **radioactive waste that contaminates water and the land**, according to the Environmental Protection Agency. Waste from open pit mines is often left in piles outside the mine, while tailings from the milling process remain radioactive and contain hazardous chemicals.

“Wind can blow radioactive dust from the wastes into populated areas and the wastes can contaminate surface water used for drinking. Some sites also have considerable groundwater contamination,” according to the EPA website.

The EPA is conducting water studies at three areas on the reservation that have been affected by historical mining to “inform future investigations and potential cleanups by EPA and private parties.”



A view from atop Lukachukai Mountain of an old uranium mine in the Navajo Nation, sealed off by the Environmental Protection Agency, and a pile of mining waste next to it. Credit: Cheyanne M. Daniels/ MNS

The Journal of Contemporary Water Research & Education said in a June 2020 study that while high concentrations of uranium and arsenic may be found naturally in some areas, contamination is “especially troublesome on the Navajo Nation, where past (uranium) mining activity may have contaminated water supplies.”

Out of 82 unregulated wells sampled for the study, nine exceeded the maximum contaminant level for drinking water standards for uranium and 14 exceeded standards for arsenic. Because of these contaminants, a study published by the Journal of Vacuum Science & Technology in March 2020 found that nearly 30 percent of Navajo homes had to rely on hauling water to meet their needs.

The lack of drinking water affects not only the Navajo living on the reservation, but their livestock and land usability, as well.

The EPA began investigating the effects of the uranium mines in the Cove region in January 2015, after a [settlement](#) from Tronox, a company spun off from Kerr-McGee in 2006, provided almost \$4.4 billion for cleanup of more than 50 abandoned uranium mines. Forty-two of the mines are on or near the Navajo Nation, which received \$45 million in the settlement, and 32 are in the Cove area, where more than 7 million tons of ore were mined, according to the [EPA](#).

The funds allowed for the [assessment and cleanup](#) of 230 of the 523 abandoned uranium mines across the reservation, which is ongoing. In the Northern Abandoned Uranium Mine Region, where the Cove Chapter is located, 121 of the 229 mines are [targeted](#) in the cleanup process.

Kerr-McGee was among the companies that extracted a total of 30 million tons of uranium ore from the Navajo land from 1944 until 1986. In his testimony in March before the House Judiciary Subcommittee on the Constitution, Civil Rights and Civil Liberties, Nez, the Navajo Nation president, said that “not a single one” of the 523 abandoned mines on Navajo lands “has been cleaned up properly.”

Leslie Begay, a 65-year-old Marine Corps veteran and former uranium miner living in New Mexico, has traveled to Washington multiple times to testify before Congress. It’s an impressive feat because he carries a heavy oxygen tank with him everywhere, the result of his time working in the mines.

In 2015, when his granddaughter visited Begay and told him he looked sick, he went to the local hospital for help. Lacking the specialists he needed, he was flown to a hospital in Albuquerque. Three weeks later, he received a diagnosis. He never went back to work.

“I was doing good. I was happy. That one day, everything was gone. I got a problem that’s called interstitial lung disease, which I had encountered from uranium mining,” said Begay, who was finally approved for a lung transplant last month, after a long wait.

Begay, who is also a member of the Navajo Radiation Victims Committee, said he was never told of the health consequences that could arise if he took a job in the mines, just that it was a job, an opportunity. Now, in addition to using 26 oxygen tanks a week, Begay takes a host of medications and monitors his oxygen levels with an oximeter, a small device that clips onto his finger.

“We’re in a very difficult situation,” he said, speaking for himself and other Navajo miners facing major illnesses. “But the government is responsible for this. They need to acknowledge us.”

Extending the Radiation Exposure Compensation Act

The pending legislation for extending and expanding the Radiation Exposure Compensation Act, Navajo leaders and other proponents said, would acknowledge the suffering of miners like Begay.

Facing an uncertain future in a deeply divided Congress, the bill speaks to the enormity of the disaster wrought by uranium mining and weapons testing on the Navajo Nation and many others. Rep. Steve Cohen (D-Tenn.), chairman of the House Judiciary Subcommittee on the Constitution, Civil Rights and Civil Liberties has called it “a national shame.”

The bill would extend the current July 10, 2022 deadline for filing claims, and make miners and mine workers who worked after 1971, when U.S. government procurement of uranium ended, eligible for

compensation, along with additional categories of mine workers and Department of Energy mine remediation specialists like Harrison.



Phil Harrison and members of the Navajo Uranium Radiation Committee meeting with the Laguna Pueblo tribe to discuss lobbying plans to get Congress to extend the Radiation Exposure Compensation Act, which is set to expire in 2022. Credit: Cheyanne M. Daniels/MNS

It would expand benefits to cover prostate and uterine cancer, in addition to lung and kidney failure. It would include all those who lived downwind from test sites who can show they suffered from these and other covered diseases in Idaho, Colorado, Montana, Nevada, Utah and Guam, recognizing the 106 atomic weapons tests the United States conducted at various locations in the Pacific.

The measure also would increase maximum compensation from \$100,000 to \$200,000. Under the current law, pre-1972 miners and other uranium workers are eligible for \$100,000; on-site participants in nuclear tests can receive \$75,000; and those who lived downwind from the Nevada Test Site are eligible for \$50,000.

Harrison said he has no idea how much gamma radiation he and his fellow miners were exposed to. After finishing high school, he enlisted in the Air Force in 1970, right before he learned his father was ill.

After several years on active duty, Harrison switched to the Air Force Reserve and left the military in 1976. He returned to mining operations as a Department of Energy civil engineer and technologist in

Tuba City, Arizona. For two years, Harrison mapped where contaminated materials were stored underground. Then, in 1999, he got sick.

“I had a rash all over my body,” said Harrison. “I don’t know what was happening. I went to a clinic and I got examined in November of 1999. A week later ... they told me that my kidneys were failing. Both of them.”

Harrison was told he needed dialysis and, eventually, an artificial kidney. He was 50.

The Environmental Protection Agency has found that contact with uranium can cause kidney damage. Harrison said industrial hygienists and medical consultants conducted investigations into his work for the Department of Energy and concluded that he had been exposed to seven different toxic substances that led to his kidney failure.

When he applied for medical compensation, however, he was rejected. He was told he hadn’t worked underground long enough during his three months as a miner to be eligible. The new language in the bill would extend and expand RECA to cover him and other workers, as well as downwinders.

Harrison also said the amount of compensation should be increased from \$100,000 to at least \$200,000 to sufficiently cover health costs and lost wages.

“They develop these criteria, where it’s really hard to qualify,” Harrison said. “I don’t think there’s a price that’s for loss of life. People are deprived of their livelihood. My dad would have lived another 40, 50 years. And then as far as income is concerned, he would have probably earned about another \$800,000.”

Sen. Ben Ray Luján (D-N.M.), long an ally in Congress of Harrison’s Navajo Uranium Radiation Victims Committee, has said that failure to extend the law and include additional uranium workers and downwinders would be a monumental injustice. “Many families back in New Mexico, including Navajo women (and) elders, have said in committee and have shared with me, ‘What are people waiting in Washington waiting for? For us to all die so that the problem goes away?’” said Luján. “That’s profound and what I’m hoping is that we can build more support to get this across the finish line.”

House Speaker Nancy Pelosi (D-Calif.) has supported the bill, which Luján said he has brought to the attention of President Joe Biden and Vice President Kamala Harris. Still, some members of Congress oppose the extension.

Some of the opposition, Luján explained, comes from the price tag, which is unknown but could be billions of additional dollars.

“Some of our colleagues, they say, ‘It costs too much.’” said Luján. “And I understand that this is an expensive piece of legislation. But nobody asked these families if they were willing to die to mine uranium.”