

For tribes, reforestation means reconnecting to history and culture

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In western Montana's Mission Mountains, whitebark pine trees have been hit hard by blister rust, an invasive disease.

The trees, which grow slowly and live at high elevations, help shade snowpack and prevent it from melting. Their seeds are an important protein source for grizzly bears and many other animals. And the whitebark pine holds cultural meaning for a local tribe that's working to

replant it.

Tribal nations have been tending North America's forests, prairies and wetlands for millennia. Now, amid climate change, [habitat loss](#), droughts and wildfires, some tribes are taking the lead in growing the trees, wild foods and [pollinator species](#) that have become scarce on the landscape.

"Everything we plant right now is for our grandkids," said ShiNaasha Pete, reforestation forester with the Confederated Salish and Kootenai Tribes. "Whitebark pine was a supplement to the original diet of our ancestors. We want to keep our culture and our language and lifestyle in our younger generations."

Pete oversees a program to restore whitebark pine trees to tribal lands and nearby forests. After identifying a handful of trees with genetic resistance to the blister rust, the team has collected enough seeds to repopulate the tribe's entire 105,000 acres of whitebark pine habitat.

"It's a keystone species," Pete said. "It has over 100 different species that are reliant upon it. If we lose whitebark pine, it's going to eliminate that ecosystem and habitat at the higher elevations, and that will have an effect on everything down below."

The program has produced almost 11,000 seedlings, with plans to plant 4,300 of them next spring. Pete hopes to scale up to planting 50,000 seedlings a year. It will take 60 to 80 years before the trees she [plants](#) produce their own seeds.

Pete said she hopes to plant enough trees to reintroduce seeds as food for tribal winter ceremonies.

While many tribes are reasserting practices such as cultural burning to restore healthy forests, some are emphasizing the cultivation of the plant

species that are struggling to regenerate on their own. Even as many states have closed or cut back on nursery programs, many tribes are increasing seedling production or planning to build greenhouses.

"If you have an area with some sort of disturbance and invasive species move in, it's displaced a lot of native species in that area," said Jeremiah Pinto, research plant physiologist and tribal nursery specialist with the U.S. Forest Service. "Those culturally significant species are no longer there to be gathered. A greenhouse or nursery is a great tool for reforestation or restoration."

State-run and commercial nurseries often specialize in the species used for large-scale timber production, such as Douglas fir or loblolly pine. Some tribal programs similarly supply logging operations.

Many, though, have focused on species that are critical to ecosystems, and those that are woven into tribal history and culture.

"Our forest management isn't based on revenue. It's based on restoration," said Tony Incashola, Jr., head of forestry with the Confederated Salish and Kootenai Tribes.

The tribes grow more than 1 million seedlings each year at nurseries on the reservation, and the operation has doubled its conifer production over the last five years. Roughly half of the plants are grown for [restoration projects](#) on tribal lands, while the remaining half are sold to partners, including state agencies and other tribes.

"A lot of these native plants, we have words for them in our language," Incashola said. "We know what they are. We know where they grew. Having our people [grow them] in-house restores that cultural connection to that plant and to our land."

Tribal nations oversee more than 56 million acres of reservation lands, and some have focused their growing efforts for restoration within their borders. Many, though, grow species to be planted throughout their ancestral lands and eco-regions, partnering with state and federal agencies and private landowners to bolster projects over a wide area.

State and tribal growing operations will see another boost from funding included in the infrastructure law President Joe Biden signed last year. This year, six tribal nurseries will receive up to \$250,000 each to bolster their operations. More funding will be available in future years and may include additional programs or aid tribes looking to build a nursery.

"The funding we'll receive will really help us out," said Philbert Smith, who oversees the Mescalero Apache Tribe's nursery operations in southern New Mexico. "We'll be able to catch back up with technology."

Money from the initial round of federal investments will help Smith's program replace aging infrastructure and upgrade some of its equipment, he said.

The Forest Service's Pinto, a member of Navajo Nation, helps manage the Intertribal Nursery Council, an association that provides a forum for information-sharing and technical assistance. When the council was founded in 2001, only about 10 tribal nurseries were operating in the country. That number has increased many times over, though the group doesn't have an official tally.

"I'm constantly learning of new tribal nurseries popping up and interested in doing restoration," Pinto said. "There's an uptick in the diversity of the programs and the plants that they grow. It's a really good investment to be in control of the plants they're using, to ensure that the seed sources and types of plants are appropriate."

Some tribes have long-standing nursery programs that grow seedlings by the hundreds of thousands. Others have fledgling operations that are growing into important restoration roles. One such program is run by the Confederated Tribes of Grand Ronde in western Oregon. The community broke ground on its nursery in 2014, and today, it grows about 40 native plant species for restoration projects on tribal land.

Jeremy Ojua, the nursery supervisor, said the program focuses on producing culturally important species that aren't readily available at commercial nurseries. Such plants include camas, whose edible bulbs were a food staple for many tribes; yampa, a wild carrot; and cow parsnip, a pasture plant.

"The main goal is to be putting these plants back into our restoration areas, and hopefully over time, they'll be doing well enough that people will be able to come to those places and do traditional gathering," Ojua said.

Though Ojua is the nursery's only full-time employee, he said the program's presence in the community, along with a summer youth program, has helped tribal members reconnect with native plants.

In northeastern Oregon, the Confederated Tribes of the Umatilla Indian Reservation also have established a nursery program with a focus on restoration and culture. The nursery was founded in the 1990s to plant vegetation alongside streams to benefit salmon. The program has expanded to also grow plants to improve sage grouse habitat.

"When Indigenous people talk about their culture being lost, it's not just language," said Gail Redberg, the nursery manager. "It's also the way of looking and living with the Earth. Not everybody who's a tribal member has had the opportunity to be involved in cultural activities and had those experiences mold their formative years."

Redberg, who is not a tribal member, nonetheless believes her program is helping the community reconnect with those longstanding practices. Many of the 200,000 seedlings her nursery grows each year are "first foods"—the plants that were the staples of Indigenous diets before European colonization. Most of the plants Redberg grows supply habitat projects on the tribe's reservation, while some leftovers are sold to landscapers and individuals.

Some tribes have planted species to revive cultural practices such as basket weaving, Pinto said. In addition to landscape restoration, some programs grow heirloom agricultural foods like beans, squash and corn to improve food security in tribal communities.

In many tribal nations, nursery managers are growing tree species to help forests survive climate change, diseases and pests. The Mescalero Apache Tribe grows about 75,000 seedlings of ponderosa pine and Douglas fir each year.

"Our forest on the reservation is probably one of the healthiest in southern New Mexico," said Smith, the nursery manager. "We cut out all the diseased trees and go back and replant in that area."

Cut Douglas firs are used as lodgepoles for teepees, Smith said. Within the past five years, the [tribe](#) has grown more native plants to benefit wildlife using money from the U.S. Department of Agriculture's Natural Resources Conservation Service.

The Fort Belknap Indian Community, home to two Montana tribes, is seeking to restore subalpine fir, which a wildfire devastated in the 1930s. The tribes are in the first phase of their effort, conducting a study to see whether any remnant populations of the tree exist in its chain of mountains.

"If we do find some pockets of any remaining subalpine fir, we're going to collect some seeds and possibly use them to grow and propagate and plant them back up in our mountains," said Dennis Longknife Jr., the community's climate change coordinator. "If we don't have any, we have to find out where we can get some seed stock."

Longknife, Jr. said the tree has cultural significance to the tribes, used for ceremonial purposes. The next steps in the restoration process will include identifying sites to grow the plants and areas for restoration. He noted that grant programs in the federal infrastructure bill may provide funding opportunities to support that work.

As nursery operations proliferate and expand, such efforts stand to benefit many other tribal programs, said Pinto, the Forest Service [nursery](#) specialist.

"Tribes want to invest in making plants that are significant to their culture more accessible to elders or youth programs," he said. "It's really paying homage to a traditional way of land management."

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