

John T. Harrington Forestry Research Center

The JTH Forestry Research Center, located in Mora, New Mexico, provides science-based solutions for private, tribal, state and federal forest managers who face the threat of catastrophic fires due to overgrown forests and the inability of post-fire forest communities and ecosystems to naturally regenerate after such fires. The center is the only program in the Four Corners states focusing on research efforts along the entire reforestation pipeline.



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MISSION

The mission of the John T. Harrington Forestry Research Center at Mora is to advance the understanding of restoration activities in forested areas in New Mexico through multidisciplinary research, education and stakeholder collaborations.

VISION

Leading the nation in climate-smart reforestation research that supports the entire reforestation pipeline from seed to nursery systems, to tree planting.

VALUE ADDED TO NEW MEXICO

- Seedling development, nursery systems and tree planting efforts
- Provides value to ecosystem services such as water, recreation, wildlife and timber
- Post-fire restoration research
- Investigating drought tolerant tree varieties

Research Focus

At the JTH Forestry Research Center, we lead applied research advancing post-fire reforestation based on the reforestation pipeline — beginning with seed source selection and extending through nursery production to field establishment. Our provenance and common garden trials are identifying climate-resilient genetic sources of *Pinus ponderosa* that exhibit superior growth, survival and carbon sequestration potential across a range of environmental conditions. By establishing regionally adapted seed sources, we are ensuring that reforestation efforts in the southwestern United States are grounded in strong genetic foundations that can withstand future climate stressors.



We are also advancing the nursery phase of the pipeline by refining cultural practices, container systems and irrigation regimes to produce high-quality, disease-resistant seedlings. Our work on rhizosphere microbiome-pathobiome interactions is revealing how microbial communities influence seedling health during production and after outplanting. In the planting and post-planting phases, we are testing nucleation planting strategies, planting densities and microsite manipulations to increase seedling survival and accelerate ecosystem recovery. Complementary modeling efforts quantify carbon accumulation and growth trajectories across time and climate gradients. Together, these studies form an integrated, science-based framework that is redefining reforestation across fire-impacted landscapes throughout the western United States.

Recent Impacts

- The JTH FRC is defining a science-based framework for restoring forests after wildfire by integrating seed selection, nursery production and field establishment research to improve reforestation success across the western United States.
- Through research on nursery cultural practices, container systems, irrigation, and rhizosphere microbiome dynamics, the JTH FRC is producing healthier, more resilient seedlings capable of thriving in harsh post-fire environments.
- By testing nucleation planting designs, planting densities and microsite manipulations, the JTH FRC is identifying practical, scalable approaches that increase seedling survival and accelerate forest recovery.
- The JTH FRC's carbon modeling and allometric research are providing critical data to evaluate how post-fire reforestation contributes to carbon sequestration and long-term climate mitigation.



COMMUNITY ENGAGEMENT

The 2025 Forestry Day at the JTH FRC served as a major community engagement event that brought together university, agency and tribal partners to showcase New Mexico's coordinated reforestation efforts from seed to planting. Through interactive booths and demonstrations, community members learned how research, seed programs, nursery production and field planting are integrated to restore forests following wildfire. The event highlighted how the JTH FRC and its partners are addressing low seedling survival rates by advancing science-based practices that strengthen ecological resilience and promote long-term forest recovery across the state.

