



## The Nature Conservancy of Arizona

**THE PROBLEM** Climate change is making Arizona dryer and more susceptible to forest fires. Small diameter logging restrictions have filled forests with fuel. The dangerous combination of too many small-diameter trees in an overly dry forest has caused Arizona to lose a quarter of its Ponderosa pine forests in the last ten years. What's more, timber-based businesses have disappeared, depleting the local economy.

**THE CLIENT** The Nature Conservancy of Arizona

**THE SERVICE** Regional economic and ecological assessment and economic viability modeling

**THE SOLUTION** Based on research by the Sustainability Solutions Services team of small diameter wood industries that would fit Arizona's environment and economy, a portfolio of restorative thinning businesses and technologies was created that includes logging, sawmill, biomass-to-energy, manufacturing and pulp mills. The data was then entered into a customized economic viability model where five scenarios were tested using the Ponderosa pine Four Forest Restoration Initiative region in northern Arizona and the juniper-filled Prescott National Forest. The modeling showed multiple processor and consumer "business clusters" would form, taking care of harvesting, processing and product development. For example, the White Mountain Stewardship Program in the Show Low-Springerville area includes logging operations, a pellet mill, a biomass-to-energy plant and a lumber mill. These business clusters would eliminate costly federal thinning subsidies and replace them with a use for small diameter wood that would lower fire risk.

**THE OUTLOOK** For these business clusters to form, U.S. Forest Service and local policymakers will need to take a systems-focused view of Arizona's forests and fire-adapted ecosystems. Innovative but lesser-known technologies can be developed and employed to find new uses of small diameter wood and ensure a healthy balance between the economy and the environment. If Arizona's forests are sustainably harvested, fewer fires will prevent soil erosion and dam sedimentation and improve the forest's ability to filter groundwater. These ecosystem services could also be monetized by the government to add additional value to restorative thinning.

**"The Nature Conservancy proposed the study because there was uncertainty about how to attract more business investment to accelerate ecologically sound forest thinning before it's too late. These results give us hope that we can once again have healthy forests and communities."**

**Patrick Graham, state director of The Nature Conservancy in Arizona**