



# Santa Cruz/Embudo Creek Watershed Multi-jurisdictional Restoration and Protection Project

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## Abstract

The Santa Cruz/Embudo Creek Watershed Multi-jurisdictional Restoration and Protection Project is a Collaborative Forest Restoration Program CFRP grant awarded to the Forest Guild in 2007 that is aimed at reducing the threat of catastrophic wildfire to a number of small communities in northern New Mexico through forest restoration in nearby watersheds.

The watersheds are classified as high priority for restoration due to their current ecological conditions and their close proximity to a number of small, forest-dependent communities. The Forest Guild worked with various land management agencies in the area, including the Camino Real District of the Carson National Forest, the Taos Field office of the BLM, and the Board of the Truchas Land Grant, to identify treatments sites. Specific silvicultural prescriptions were then developed through a collaborative process involving independent scientists and professionals representing industry, conservation organizations, and land

management agencies.

The Collaborative Forest Restoration Program (CFRP) originated with the Community Forest Restoration Act of 2000 (Title VI, Public Law 106-393). It provides cost-share grants for public land forest restoration projects that involve numerous stakeholders in their design and implementation.

## Project Objectives

- ◆ Restore ecosystem structure and function on 575 acres of ponderosa pine and piñon-juniper forests through watershed-scale collaboration
- ◆ Protect large and old trees in the treatment areas
- ◆ Train, safety certify and employ local workers to perform restoration work
- ◆ Educate, train, and employ local youth through participation in ecological restoration, multiparty monitoring, and wood utilization marketing.

## Longleaf Pine Seedling Growth in Response to Light and Moisture under varying Canopy Densities

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## Abstract

The longleaf pine (*Pinus palustris* Mill.) ecosystem's decline has resulted in the loss of 97 percent of the 60-90 million acres it covered prior to European settlement, but interest in longleaf pine restoration and management has increased in recent decades. This project seeks to determine what level of residual overstory in selection silviculture promotes adequate longleaf pine seedling recruitment. Six hundred containerized longleaf pine seedlings were planted on two sites, one xeric and one mesic, in December, 2007, and February, 2008, respectively. Half of the seedlings at each site were randomly selected for understory removal (with herbicide) in order to differentiate overstory from understory influences. Each seedling's canopy gap fraction was determined using hemispherical photography, and average soil moisture was determined from four time

domain reflectometer (TDR) measurements at each seedling from May to August, 2008. Seedling groundline diameter (GLD) was measured in August, 2008. First year results indicate that mean moisture was not significantly different between herbicide and control treatments at either site. Both treatments at the xeric site showed significantly greater growth than the same treatments at the mesic site ( $p < 0.0001$ ). Regression analyses indicate loosely positive relationships between moisture and seedling growth for both treatments at both sites. At the mesic site, gap fraction was a significant predictor for growth only within the control treatment ( $p = 0.015$ ). At the xeric site, a significant regression existed only within the herbicide treatment; gap fraction was not significant in either treatment. Second year results are expected to show clearer relationships.