

## *What to Expect After Restoration*

The goals of forest restoration treatments are to restore degraded forest health and to help solve the problem of unnaturally severe wildfire. Sometimes restoration can be achieved by fire only. However, where tree density and structure prohibit safe use of fire, mechanical thinning followed by prescribed fire is recommended. These treatments leave larger, mature trees and reinvigorate the understory, which includes grasses, forbs, and wildflowers. In turn, this diverse ecosystem supports wildlife habitat and reduces the threat of catastrophic wildfire.

Forest restoration includes using heavy equipment to mechanically remove small trees. Treatments are designed to replicate conditions that evolved over time to be resilient to wildfire, drought, and insect and disease outbreaks. Thinning alone alters forest structure and density, but fails to address the issue of returning fire to the ecosystem. Successful restoration treatments permit the reintroduction of frequent, low-intensity fires through regular prescribed burns after thinning to help shape the forest into the future.

Treated areas look disturbed at first but quickly recover. Harvested trees are often stacked and later transported to processing facilities. Residual branches and bark, called biomass, is either transported off-site, left in piles for burning, or scattered to protect the soil. Some roads are temporarily constructed for access to harvest areas and later decommissioned and rehabilitated to a natural state.

The photo sequence to the right shows what the forest looked like before thinning operations (Fig. 1), immediately after thinning (Fig. 2), and one year after thinning and biomass removal operations (Fig. 3). Note the increase in understory grasses, flowers, and plants in Figure 3.



**Figure 1.** Before thinning, Ft. Tuthill County Park, Flagstaff, AZ (August 2017)



**Figure 2.** Immediately after mechanical thinning operations, Ft. Tuthill County Park, Flagstaff, AZ (September 2017)



**Figure 3.** One year post-thinning, Ft. Tuthill County Park, Flagstaff, AZ (September 2018)