

Pinyon Trees Response to Wildfires and Tree Thinning Treatments in Northern Arizona

Jared Litson Begay¹, Amy V. Whipple², Donald Busse³, Peter Z. Fulé⁴

¹ Research and Mentoring for Post-Baccalaureates Fellow, Northern Arizona University, Flagstaff, AZ, USA

² Center for Adaptable Western Landscapes, Northern Arizona University, Flagstaff, AZ, USA

³ NAU School of Forestry, Forest Ecology Lab

The pinyon-juniper woodlands occupy a wide range in Northern Arizona, and the region has been experiencing many ecological disturbances such as lethal wildfires and extreme drought conditions. These pinyon pine (*Pinus edulis*) and juniper spp. ecosystems provide many ecosystem services to the Diné people, such as the production of pinyon nuts, which provide a food source for humans and wildlife through thousands of masting events. There is growing concern of rising pinyon mortality and decrease in pinyon pine nut production due to climate change. We are studying the comparison in cone production among two different sites, post-wildfire and a recently thinned site, coupled with a control site to compare the cone production. The methods also involve using the cone-abscission-scar methods developed by M. Redmond to estimate the dates of previous masting events. We are comparing the current cone production to past masting events to determine the effects of wildfire and tree thinning practices. We hypothesize that the areas with the implementation of tree thinning treatments and have experienced wildfire will increase the pinyon cone production in the treated plots compared to control plots due to the release from competition. Our research will help inform how forest management treatments could preserve this important traditional food source and ecosystem health for future generations.

Contact Information: Jared Litson Begay, Northern Arizona University, Flagstaff, AZ, USA 86001, Phone: (928) 255-2871,
Email: jared.begay@nau.edu