

# Management of Piñon Juniper Woodlands in the Southwestern Great Basin: Evaluating the Effects of Thinning Treatments

A proposal for the Joint Fire Science Program, AFP 2004-2-Task 1

## Objectives and Hypotheses

- Compare thinning treatments where woodlands are just beginning to invade sagebrush steppe (early successional woodlands dominated by class 1 and 2 trees) with areas where woodlands are approaching canopy closure (late successional woodlands dominated by class 3 and 4 trees). **Need to determine the thinning prescription. LAME used 80% stem density reduction of post-settlement trees (class 1 and 2). Need to decide how to define post-settlement P and J trees. For example, the maximum trunk diameter for thinned trees will need be smaller for P than J.**
- Evaluate the cost effectiveness of mechanical and chemical thinning treatments for reducing density and cover of piñon and juniper trees
- Evaluate the effects of thinning treatments on cover, soil seedbank densities, plant species diversity, and fuelbed characteristics.

## Study Design

Each combination of 2 successional stages and 4 thinning treatments will be applied to 5 replicate treatment units (n=40 total). Each treatment unit will be 2.5 acres (1 ha, 100 x 100m). **Consider larger treatments, and/or possibly one more treatment replicate. Also consider adding a “fuelbreak” treatment, cutting and removing all trees. Removed trees could be either be chipped and spread off-site, or onsite as a fifth treatment (fuelbreak plus mulch).**

Table 1. Thinning treatments to be applied during fall and winter FY05.

Successional stages <sup>1</sup>	Thinning Treatments		
	Treatments	Thinning area	Cost per treatment
Early (class 1-2 trees)	Cut, limb, & scatter	25 acres (10ha)	\$12,500 (\$500/acre)
Late (class 1-4 trees)	Cut, chip, & mulch	25 acres (10ha)	\$ 12,500 (\$500/acre)
	Herbicide	25 acres (10ha)	\$2,500 (\$100/acre)
	Untreated control	25 acres (10ha)	0\$
	<b>TOTAL COST</b>		<b>\$27,500</b>

<sup>1</sup> 20 ha (50 acres) total for each successional status category

<sup>2</sup> 10 ha (25 acres) total for each thinning treatment category

## **BLM Contributed Funding**

\$25K FY04 – Planning, Native American consultation, EA prep.

\$40K FY05 – treatment applications and other project support

\$15-20K FY06-08 – follow up treatments and other project support