

Sagebrush recruitment following juniper mastication in western Utah

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Pinyon-juniper expansion and infilling has led to sagebrush habitat degradation throughout the Intermountain West. Often, sites dominated by pinyon-juniper have nearly complete loss of sagebrush and other important understory species. In response, land managers in Utah are increasingly using mastication (mechanical shredding) as the treatment of choice to reduce tree cover and restore sagebrush habitat. Tree removal alone can lead to substantial vegetative response if there is sufficient understory prior to treatment. However, where the understory is depleted and sagebrush is absent seeding becomes necessary. In Utah's West Desert, masticated juniper sites where sagebrush was present prior to treatment showed prolific natural sagebrush recruitment 3-5 years post treatment relative to adjacent untreated sites which showed virtually no recruitment. Seeding sagebrush in masticated sites, where it was lacking prior to treatment, has also been successful. It's not clear what the mechanism is that promotes sagebrush recruitment and successful seeding in masticated sites. Tree removal appears to invigorate remnant sagebrush potentially leading to greater leader growth and seed production, and the mulch produced by shredding may provide additional safe sites for germination. However, the majority of sagebrush recruits occur within the interspace rather than the mulch regardless of whether the recruitment was natural or from seeding. Our observations suggest that the disturbance created by mechanically shredding juniper can stimulate natural recruitment of sagebrush and create conditions suitable for seeded sagebrush to emerge and establish.