

EMERGENCE AND GROWTH OF WINTERFAT IN RESPONSE TO CHEATGRASS (*BROMUS TECTORUM*) DENSITY

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Winterfat (*Krascheninnikovia lanata* [Pursh] A. D. J. Meeuse & Smit; synonym: *Ceratoides lanata* [Pursh] J. T. Howell) is a desired shrub species and an integral component of salt desert shrublands in the Intermountain West. On the Snake River Birds of Prey National Conservation Area (BOP) in southwestern Idaho, extensive loss of winterfat-dominated communities has been linked to altered fire regimes associated with cheatgrass (*Bromus tectorum* L.) invasions. Post-fire revegetation efforts are often hampered by the quick emergence of cheatgrass seedlings with autumn or spring moisture. We compare the establishment of four winterfat populations (Birds of Prey; northeastern New Mexico; Northern Cold Desert Select Germplasm, and Open Range Tested Germplasm) with and without cheatgrass competition. Seed of each accession was planted in 15 cm diameter pots containing four densities of cheatgrass (0, 2, 4, and 8 plants per pot) in a greenhouse. Plant measurements were made 4, 5, 7, 9, 11, 13, 15, 17, 19, and 21 weeks after planting. Measurements included winterfat survival, height and two canopy diameters and cheatgrass height and number of leaves and culms per plant. Initial establishment was greatest for the New Mexico winterfat source at all cheatgrass levels. Growth of this source exceeded the others in the absence of cheatgrass. However, the presence of cheatgrass depressed growth of all sources by at least 90 percent. Establishment of winterfat on cheatgrass infested rangelands necessitates seeding on sites where cheatgrass densities are low or reduced by site preparation procedures.