

Using Range Manipulations to Increase Pronghorn Carrying Capacity

Anis Aoude and Rick E. Danvir, Deseret Land and Livestock, Woodruff UT, 84086

Abstract: Pronghorn investigations, 1984-1995, suggested density dependence limited pronghorn population growth and fawn production on 390 km² of sagebrush steppe on Deseret Land and Livestock ranch (Danvir 2000). Danvir (2000) also showed that does and fawns selected summer habitats of greatest forb abundance. Doe groups avoided crested wheatgrass monocultures and dense sagebrush (>25% shrub cover) June-September. This caused us to hypothesize that population size and fawn production were limited by the availability of forbs. From 1995-2001 we increased forb availability on 2,500 ha (6% of pronghorn habitat) through burning, chemical and mechanical range manipulations. Population size and fawn production were negatively correlated pre treatment ($r^2=0.89$), suggesting density dependence. Conversely a positive correlation between population size and fawn production post treatment ($r^2=0.74$) suggests an increase in carrying capacity. Doe groups strongly selected burned and seeded areas having abundant broadleaf forbs. This supports our hypothesis that forb availability limited fawn production and population size. The various treatments used to reduce shrub and increase forb availability will be discussed.