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CONCURRENT SESSION #3 (PREDATORS)

IMPACT OF PREVENTIVE AERIAL COYOTE HUNTING ON SHEEP LOSSES TO COYOTE PREDATION

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Abstract: Coyote (*Canis latrans*) predation is a serious problem for livestock producers in the Western U.S. In Utah, Idaho, and Wyoming, 34% of all producer-reported sheep and lamb losses were to coyote predation, amounting to \$4.8 million in losses during 1995. Although preventive aerial hunting is commonly used by agriculture agencies in the Intermountain West to reduce coyote (*Canis latrans*) predation on sheep (*Ovis aries*), only limited data are available on the efficacy of the technique. We assessed the impact of winter (January - March) aerial coyote hunting on sheep losses to coyotes and the need for predation management (hours of work, device nights) 3-6 months later during the ensuing summer grazing season. We compared lamb losses to coyote predation between paired Utah and Idaho grazing allotments with (treated allotments) and without (untreated allotments) winter aerial hunting from helicopters. Study areas were an average 38 km² with 1050 ewes and 1231 lambs per grazing allotment. Treated allotments received an average of 2.1 hours of aerial hunting, killing 5 coyotes per allotment. Confirmed lamb losses to coyote predation in treated allotments ($\bar{y} = 2.7$, SE = 0.6) were significantly less than in untreated allotments ($\bar{y} = 7.3$, SE = 1.6, P = 0.01), as were estimated lamb losses to coyotes (treated $\bar{y} = 11.8$, SE = 6.2; untreated $\bar{y} = 35.2$, SE = 8.1, P = 0.02). Hours required for summer coyote control also were significantly less (P = 0.01) in treated allotments ($\bar{y} = 37.3$, SE = 8.5) than in untreated allotments ($\bar{y} = 57.2$, SE = 11.3). Winter aerial hunting increased the mean number of coyotes killed annually per allotment from 2.0 (SE = 1.0) to 5.7 (SE = 1.1, P = 0.04). It did not impact the number of coyotes removed during summer coyote control (P = 0.52). Based on 1995 values for lambs, labor and helicopter rental, winter aerial hunting of coyotes had a benefit:cost ratio of 2.6:1. However, additional data on the mechanisms which make preventive aerial hunting effective are needed before we can make the best use of this technique.

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Key Words: coyote, (*Canis latrans*), aerial hunting, sheep, predator losses, predation

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