

THE EFFECT OF WOLF REDUCTION ON DALL SHEEP DEMOGRAPHY IN THE SOUTHWEST YUKON.

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Abstract: Wolf density in an 11,200 sq. km area in the southwest Yukon was reduced in 1984 from an estimated 1.2 to 0.2 wolves per 100 sq. km., providing the impetus to examine its effect on Dall sheep demography. Two areas were surveyed for sheep in July, from 1980 to 1986, one within the wolf removal area, another isolated from the area of systematic wolf reductions. Sheep population size, composition and mid-summer productivity were determined.

Population size varied between years, following a pattern that was consistent between areas. No clear association with wolf density was evident. Nursery sheep numbers in particular closely tracked one another between areas. Ram numbers in the removal area did not enjoy the growth observed in the control area, which appeared to be linked to harvest levels. The sheep harvest in the area within and surrounding the removal area since wolves were reduced occurred at a rate doubling that found in the control area. Nursery sheep numbers appeared to be linked to the rate of lamb production and on an area specific basis, to the previous year's production of lambs. The number of half curl rams across all subzones also varied strongly between years independent of area, and appeared to be linked to previous lamb production, implying that ram numbers are also influenced by gaps and pulses generated by variable lamb production.

Lamb production varied strongly between year, consistently between areas, and appeared to be tied to general weather patterns.

We suggest that general differences in sheep demography between the control and removal areas were associated with sheep density; areas with higher sheep density produced fewer lambs, with slightly less variability between years and appeared to enjoy higher rates of survival, particularly in the lamb year.

Variable densities of wolves, then, in time and across areas produced no predictable response in sheep demography. Rather, demographic trends appeared largely as an expression of lamb production, resulting in cohort gaps and pulses transferred over all sex and age segments.