

**Abstract: NeSA202100oral-17: Relative influence of wild prey and livestock abundance on carnivore caused livestock predation**

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Conservation conflict over livestock depredation is one of the key drivers of large mammalian carnivore declines worldwide. Mitigating this conflict requires strategies informed by reliable knowledge of factors influencing livestock depredation. Wild prey and livestock abundance are critical factors influencing the extent of livestock depredation. We compared whether the extent of livestock predation by snow leopards *Panthera uncia* differed in relation to densities of wild prey, livestock and snow leopards at two sites in Shey Phoksundo National Park, Nepal. We used camera trap-based spatially explicit capture-recapture models to estimate snow leopard density; double-observer surveys to estimate the density of their main prey species, the blue sheep *Pseudois nayaur*; and interview-based household surveys to estimate livestock population and number of livestock killed by snow leopards. The proportion of livestock lost per household was seven times higher in Upper Dolpa, the site which had higher snow leopard density (2.51 snow leopards per 100 km<sup>2</sup>) and higher livestock density (17.21 livestock per km<sup>2</sup>) compared to Lower Dolpa (1.21 snow leopards per 100 km<sup>2</sup>; 4.5 livestock per km<sup>2</sup>). The wild prey density was similar across the two sites (1.81 and 1.57 animals per km<sup>2</sup> in Upper and Lower Dolpa, respectively). Our results suggest that livestock depredation level may largely be determined by the abundances of the snow leopards and livestock and predation levels on livestock can vary even at similar levels of wild prey density. In large parts of the snow leopard range, livestock production is indispensable to local livelihoods and livestock population is expected to increase to meet the demand of cashmere. Hence, we recommend that any efforts to increase livestock populations or conservation initiatives aimed at recovering or increasing snow leopard population be accompanied by better herding practices (e.g., predator-proof corrals) to protect livestock from snow leopard.