

Uniting population and habitat analysis to better manage ungulate populations

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Long-term study of population demographics (survival and reproduction), combined with monitoring programs of movements and habitat use, allows us to link the environment that animals experience to their population dynamics. By an animal's "environment", I mean not only the habitat in which an animal is found, but also modifiers of habitat quality including important ecological processes such as competition, predation, and trends of disturbance and ecological succession. This information can be important for identifying "critical" habitat for species: components of habitat that can explain the greatest amount of variation in population growth under different ecological conditions. For example, we might be interested in identifying vegetation associations that can be expected to best promote survival and reproduction when a population is at its lowest (most critical) density. I present examples of such analyses for red deer, roe deer, and woodland caribou, and highlight applications for improving wildlife management.

