
ASSESSING INTEGRATED CARNIVORE-UNGULATE MANAGEMENT IN THE BITTERROOT VALLEY

Mark Hebblewhite*, University of Montana, Wildlife Biology Program, Missoula, MT

Kelly M. Proffitt, Montana Fish, Wildlife and Parks, Bozeman, MT

Mike Thompson, Montana Fish, Wildlife and Parks, Missoula, MT

Justin Gude, Montana Fish, Wildlife and Parks, Helena, MT

Ben Jimenez, Montana Fish, Wildlife and Parks, Missoula, MT

Daniel Eacker, University of Montana, Wildlife Biology Program, Missoula, MT

Whether increasing large carnivore harvest can increase ungulate populations is uncertain for several reasons. One primary ecological uncertainty is whether carnivores limit ungulate population dynamics. A second results from partial controllability of large carnivore populations; whether large carnivore hunting seasons will reduce carnivores to the extent that ungulates increase. We first review cases of ‘integrated carnivore-ungulate’ management from western North America, highlighting where key uncertainties were addressed. Then, using the Bitterroot valley of MT as a case study, we present results from a research project designed to provide quantitative measurements of (1) elk population dynamics and limiting factors, (2) mountain lion densities, (3) the effect of harvest on mountain lion densities under a management plan designed to differentially affect lion density across western Montana, and (4) the ultimate effect of changes in mountain lion seasons on elk population dynamics. During the first phase of research, mountain lions caused 6-8 times more mortality than wolves, limiting elk populations via calf survival and recruitment. We estimated mountain lion densities in the Bitterroot and Granite County to help address scientific uncertainty, the effect of lion hunting on lion densities and ultimately elk recruitment and populations. In 2016, following implementation of 4 years of mountain lion seasons intended to reduce lion density in the Bitterroot and stabilize lion density in Granite county, we plan to return to the Bitterroot to monitor both lion and ungulate populations to quantify the effects of this integrated carnivore-elk management strategy. This research will provide objective information to inform public decision-making processes about carnivore and elk management, but it cannot provide direction regarding what strategy for carnivore or elk management should be pursued. Balancing the input and desires of divergent stakeholders is perhaps the most challenging facet surrounding integrated carnivore-elk management.