

WINTER MOVEMENT PATTERNS OF A RECOLONIZING WOLF POPULATION^{TWS}

Eric J. Bergman and Robert A. Garrott
Montana State University
Bozeman, MT 59717

A largely unanswered question concerning the ecology of wolves (*Canis lupus*) centers around what habitat and landscape factors substantially influence their movement patterns. To address this question, we are studying fine-scale movements and broader-scale habitat use of wolves in a Yellowstone prey system. By focusing on the winter ranges of Yellowstone's non-migratory Madison-Firehole elk herd and Central bison herd, we hope to use intensively studied ungulate populations as well as other environmental features to tease apart the influential drivers of wolf movement. Wolf spatial data were collected on multiple scales over the past four winters. At the broadest scale, wolf core-use areas have been delineated based on 522 ground-based telemetry locations. At a finer scale, snow tracking resulted in 1287 km of data that are being used to model wolf movement patterns across a heterogeneous landscape of terrain, vegetation, and prey availability. At the finest scale, 272 wolf-kill sites were visited to gain insight into locations of concentrated wolf hunting efforts and sites of higher elk vulnerability. We present preliminary conclusions in the context of potential management implications as well as possible affects on predator-prey models in large mammal systems.