
CORRELATES OF RECRUITMENT IN MONTANA BIGHORN SHEEP POPULATIONS: AN INITIATIVE TO SYNTHESIZE MONTANA BIGHORN SHEEP RECRUITMENT DATA AND GAIN BIOLOGICAL INSIGHT

Carson J. Butler*, Fish and Wildlife Ecology and Management Program, Ecology Department, Montana State University, Bozeman, Montana 59717

Robert A. Garrott, Fish and Wildlife Ecology and Management Program, Ecology Department, Montana State University, Bozeman, Montana 59717

Jay J. Rotella, Fish and Wildlife Ecology and Management Program, Ecology Department, Montana State University, Bozeman, Montana 59717

Bighorn sheep (*Ovis Canadensis*) populations in Montana have been strongly affected by disease outbreaks in recent years, resulting in the death of approximately 1500 bighorns as well as depressed recruitment rates in some affected herds. The ecology of these disease outbreaks is not well understood and there have been several proposals for a state-wide research project addressing disease ecology of bighorns in Montana. Such a project is a large investment and any extra knowledge of the bighorn populations that can be gained from existing data would improve study design and enhance the success of any future research effort. Last year we used management data to index bighorn recruitment rates of 23 bighorn herds in the Greater Yellowstone Area (GYA) and found strong correlations between recruitment and both annual and regional climate patterns. This year we have received funding from Montana Fish, Wildlife and Parks to conduct a similar analysis of bighorn recruitment rates across Montana. The planned analysis will investigate potential correlations between bighorn recruitment and climate covariates, similar to the GYA effort, but will also explore additional covariates to capture differences in management strategies, genetics, disease history, migration patterns, and population connectivity among the state's bighorn sheep populations. The presentation will focus on the goals of our work as well as the advantages of conducting preliminary data analysis prior to implementing large scale research projects.