Population Dynamics of the Northern Yellowstone Mule Deer[TWS]

Peter J. P. Gogan and Edward M. Olexa
Biological Resources Division-USGS, Department of Biology, Montana State University, Bozeman 59717

Thomas O. Lemke
Montana Fish, Wildlife and Parks, SC 85, Box 4126, Livingston 59047

Kevin Podruzny,
Department of Biology, Montana State University, Bozeman 59717

We report trends in numbers and age and sex structure of mule deer wintering in the Gardiner Basin area of the northern Yellowstone winter range between 1987 and 1998. The ratios of fawns: 100 adults in early winter and spring are related to an index of winter severity and its component parts. Early winter fawn: 100 adult ratios are related significantly to the winter forage index as predicted by previous spring precipitation. Spring fawn: 100 adult ratios are related significantly to an index of snow water equivalency and the overall winter severity index. Survival of adult female mule deer from 1993 to 1997 as determined from radiotelemetry averaged 0.80 per year. Models of survival constrained by the components of the index of winter severity are all more parsimonious than a year-varying survival model. We conclude that variation in annual survival of adult females was a function of winter severity.