

Predator Prey Model Clarifies Research Needs at McKinley

Three levels of research priority, keyed to an adaptive management approach, emerge from the University of Idaho CPSU Report "A Conceptual Simulation Model of Moose-Wolf-Habitat Interactions at Mt. McKinley National Park" by R. Gerald Wright.

A major objective of the study was to synthesize past data in a systems framework, establishing priorities as to what factors should be monitored and measured on each species, and outlining the development of a long-term integrated wildlife research program. Specific objectives included:

1. compiling, condensing and synthesizing information on the components of the biological system;
2. looking at interactions among these components;
3. developing conceptual models of the system based on these data, and
4. using the knowledge to evaluate individual components in terms of their importance to the system and to determine the areas where information gaps are most critical to sound management.

Priority 1 level needs include a better understanding of the age structure and sex ratios of the moose populations, development of an optimum procedure for doing annual or seasonal counts of ungulate species, better understanding of the rate of predation on newborn moose calves and a more thorough knowledge of the role of fire as a mechanism for improving habitat quality and forage quantity for moose.

Priority 2 level needs deal with the role of human disturbance as an influence on moose, development of fuel loadings model for use with burning indices and validation of the model with data on fire history, and the effects of past use by moose on forage quality and quantity.

Priority 3 level research needs included the effect of climatic factors on the quality of forage in the park, disease as a factor in moose mortality, the influence of human disturbance on wolf predation, the influence of human harvest and poaching on park wolf populations, and the role of density and competition in determining moose movement and habitat use.

Copies of the bulletin are available from the University of Idaho CPSU, College of Forestry, Wildlife and Range Sciences, Moscow, ID 83843.