

THE ROCKY MOUNTAIN ELK AS A RESERVOIR HOST FOR PARASITES OF DOMESTIC ANIMALS IN WESTERN MONTANA

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Introduction

Aside from the value of studying wildlife diseases for evidence of their effects on game species, their potential for infecting domestic animals always remains a possibility. The long-term objective of this study was to determine if elk could serve as a reservoir for parasites of domestic ruminants by acting as a permanent source of mites, ticks and parasitic worms which are transmissible to livestock. The area involved in the study was in general the portion of Montana south and west of the Yellowstone River. This included the region adjoining Yellowstone National Park which is primarily National Forest land and is used as seasonal range by several thousand elk each year.

Our approach has been to compare the prevalence of similar parasites in elk and domestic ruminants within the same geographic area, as an indication of the potential rate of cross transmission which could occur in the area. As sources of information on livestock parasites, inci-

dence and intensity data were compiled from records of the Veterinary Research Laboratory at Montana State University and the Montana Livestock Sanitary Board. Information on elk parasites originated from a series of recent studies* on parasitism in elk from the northern section of Yellowstone Park and adjacent parts of western Montana. To supplement this information, the susceptibility of cattle and sheep to elk lungworms has been tested in cross transmission experiments using infective larvae cultured from captive wild elk.

Of special interest when considering the implications of elk as maintenance hosts for livestock parasites are the seasonal movements of elk herds, and the extensive use of National Forest rangeland for summer grazing by domestic livestock. Both factors would contribute to the dispersal of parasites and tend to increase the chances for contact between domestic animals and range areas contaminated by elk or other wildlife.

Results

Lungworms

In order of importance as a parasite of Montana elk, the thread lungworm (*Dictyocaulus* sp.) is probably the most significant. In one series of 298 animals, 35% of the calves and 44% of the adult elk were infected with an average of 47

worms per animal. Comparative rates of infection in cattle in western Montana averaged about 10% in calves and less than 1% in adult cows.⁴ There has been considerable speculation whether cattle and elk lungworms are interchangeable, since there are no clearcut morphological

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