
EPIDEMIOLOGIC FINDINGS AND MANAGEMENT RESPONSE DURING A BIGHORN SHEEP DIE-OFF IN THE ELKHORN MOUNTAINS OF WEST-CENTRAL MONTANA

Neil Anderson,* Deborah L. McCauley, and Jennifer Ramsey, Montana Department of Fish, Wildlife and Parks 1400 South 19th Ave., Bozeman, Montana 59718

Tom Carlsen and Fred Jakubowski, Montana Fish, Wildlife and Parks, 56 Manor Drive, Townsend, Montana 59644

Jenny L. Sika, Montana Fish, Wildlife and Parks, 930 Custer Avenue West, Helena, Montana 59620

Bighorn sheep (*Ovis canadensis*) were introduced into the Elkhorn Mountains of west-central Montana in the mid 1990s. The population increased in number to approximately 250 animals until the winter of 2007-2008 when about 84 percent of the population died from a pneumonia related epizootic. Management actions during the die-off were geared toward removing as many sick animals as possible in efforts to reduce overall mortality. Due to the stage of the epizootic removal of sick sheep was not effective in interrupting the die-off. Samples were collected from bighorn sheep, domestic sheep, mule deer (*Odocoileus hemionus*), elk (*Cervus elaphus*) and domestic goats utilizing the same winter range. *Pasteurella* spp, *Moraxella ovis* and *Mycoplasma ovipneumonia* were isolated from lung tissue of dead bighorns and pharyngeal swabs collected from domestic sheep occupying similar range during the epizootic. Both the bighorn sheep and domestic sheep also shared similar gastro-intestinal parasites including *Nematodirus* spp and *Eimeria* spp. Testing tissues and fecal samples from sympatric mule deer suggested no shared bacterial pathogens and limited shared gastrointestinal parasites. Evaluation of fecal samples from domestic goats and elk also occupying bighorn sheep range identified few shared parasites that may have contributed to the epizootic.