



U.S. Fish and Wildlife Service
National Elk Refuge

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NATIONAL ELK REFUGE TO INCREASE HERD HEALTH MONITORING


National Elk Refuge Manager Steve Kallin has announced the refuge will increase monitoring of the Jackson elk and bison herds wintering on the refuge as part of a multi-year program focusing on health assessment of the animals in relation to their environment during the supplemental feeding season. The work will be led by Dr. Thomas Roffe, Wildlife Veterinarian with the U.S. Fish and Wildlife Service.

The goal of the project is to more critically look at wildlife health and determine how diseases are influenced by environmental conditions such as snow compaction, icing, and fecal contamination. Roffe and his team of two biologists will broadly look at diseases affecting elk on the refuge but will emphasize infectious pododermatitis, parasites, and surveillance for chronic wasting disease (CWD). "As the National Elk Refuge adjusts management of elk toward less reliance on supplemental feed, we need to better understand how conditions on feedgrounds contribute to or exacerbate diseases," Kallin explained. Dr. Roffe added, "This project is designed to specifically look at management-related factors that affect disease expression."

Historically, the National Elk Refuge has had a high incidence of infectious pododermatitis during the winter feeding season, a condition known as "foot rot." The most common cause of foot rot in elk wintering on the refuge is *Fusobacterium necrophorum* bacteria. Even minor trauma to the foot, such as cuts or abrasions that occur from impact with hard snowpack or icy conditions, can allow the bacteria to enter an animal's body and set up infection. Toxins release by the bacteria can travel beyond the initial injury, causing negative effects throughout the animal's body, including possible death. Areas with heavy fecal contamination from large numbers of animals are also likely to have a higher incidence of the bacteria. The environmental monitoring will include measurements of snow compaction and surface hardness every two weeks throughout the feeding season, a practice common on the refuge prior to the initiation of supplemental feeding. The team will also measure dry fecal matter, noting its depth and horizontal distribution in areas where elk are fed. Since affected animals usually limp or display signs of foot injuries, feed truck drivers will make regular lameness assessments while on the feedgrounds and document their observations.

The studies will also assess parasite abundance, which tends to increase with animal density, fecal contamination, and reuse of the same pieces of habitat by animals. However, winter conditions in Jackson may

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effectively decrease survival and infectivity of some parasites, particularly endoparasites, or those that live inside the body of their host. The team will also examine elk for ectoparasites such as scabies mites. Scabies can lead to substantial hair loss in animals that affects survival during cold winter conditions.

Staff from the National Elk Refuge, Wyoming Game and Fish Department, and Wildlife Health Office will collect elk and bison carcasses for complete postmortem exams as part of the intensive health assessment. Postmortem exams, or necropsies, are a pathologist's tool for determining the cause of death and significance of other disease problems. In addition, animals exhibiting significant visible signs of disease may be removed from the herd. Those showing signs consistent with CWD will be immediately harvested and removed. Tissue samples will be subjected to a variety of veterinary tests to aid in disease diagnosis, with samples for CWD surveillance sent to the Wyoming State Veterinary Laboratory in Laramie, Wyoming.

“Disease is the biggest challenge we face on the refuge,” Kallin noted. “The information we gather from this project will establish baseline data and allow us to study trends that can guide future management decisions.”

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