

## Dangerous Liaisons: Domestic Sheep, Disease, and Die-offs

Similar to the deadly impact experienced by North American First Nations from disease carried by European settlers, wild sheep in North America have little immunity to many of the diseases carried by domestic animals, particularly sheep and goats. Wild sheep and domestic sheep are closely related genetically, but they have vastly different reactions to respiratory diseases. Wild sheep herds across BC, Alberta, and the western United States, have suffered catastrophic die-offs and poor lamb survival for years after contact with domestic sheep has happened.

Disease can transfer in a moment – it's as simple and innocent as a single nose-to-nose contact between one wild sheep and one domestic sheep. Domestic sheep can carry certain bacteria with no negative impacts to themselves, but the transfer of these bacteria can result in fatal pneumonia for the wild sheep. During the late fall mating season (rut), young rams often leave their herd home range on "forays", during which time they're easily attracted to a field of domestic ewes. Just one nuzzle through a wire fence can be enough for disease transmission to occur resulting in pneumonia spreading through the wild sheep herd when the ram returns home. There are not many domestic sheep farms in BC that are within wild sheep range, but the few that are occur within BC's southern bighorn ranges and pose great risk to the conservation of BC's California and Rocky Mountain bighorn sheep. Because of this threat, disease remains the single most important factor limiting wild bighorn sheep recovery and distribution in North America today.

Die-offs of bighorn sheep herds have occurred for decades across BC, Alberta and in 14 western US states. The thornhorn sheep (Dall's and Stone's sheep) in the northern part of BC have had only isolated cases of contact with domestic sheep, and are generally naïve to respiratory infections. These northern thornhorn herds need protection now to avoid the catastrophic die-offs that we have witnessed across bighorn sheep range in the south.

The mechanism of disease transmission is well-understood – we know that we can control it through effective separation of wild and domestic sheep. We must act proactively to protect wild sheep health in BC. We can't wait for the same pattern of die-offs to occur in our unique thornhorn herds. Agriculture is important to BC and the domestic sheep industry is expanding – it is a good industry that can flourish in parts of BC that are suitable for that species. However, it presents an unacceptable risk to wild sheep that can be easily avoided by separation.