

Hemorrhagic Disease



- Hemorrhagic disease is a fatal viral disease in white-tailed deer, and a sometimes fatal, but less severe disease in other species.

Species Affected in Colorado

- White-tailed deer
- Less severe disease in mule deer, elk, bighorn sheep, pronghorn, and bison

What to Look For

- Multiple dead white-tailed deer, especially near water
- Dead animals during the fall season
- Edema (fluid) under the skin of harvested animals
- Cracked and sloughing hooves
- Abnormal antlers with retained velvet



Fluid under the skin of a pronghorn with EHD. The fluid is yellow and gelatinous.

Cause and Transmission

Hemorrhagic disease is caused by two closely-related viruses, epizootic hemorrhagic disease virus (EHDV) and bluetongue virus (BTV). The disease is transmitted by biting midges, usually in the late summer and early fall. In Colorado, large die-offs are uncommon in species other than white-tailed deer. In other species, animals that survive infection may show no signs of disease, or may have subtle signs of infection. In some species, particularly pronghorn, hunters may observe fluid under the skin when skinning the carcass at harvest. Affected deer may have cracked or sloughing hooves. In Colorado, mule deer bucks that have survived EHDV infection may have abnormal antlers with retained velvet that are not shed annually, and are covered by bumpy growths. These are sometimes referred to as “cactus bucks”.

Public Health Considerations

Neither EHDV nor BTV are transmissible to humans. Both viruses can be transmitted to cattle, but disease is typically mild. BTV causes significant disease in domestic sheep, and sheep are usually vaccinated against this virus. Although hemorrhagic disease is not a concern for human health, multiple dead animals can be a sign of other dangerous diseases. If hunters observe multiple sick or dead animals in an area, do not harvest animals from that area, do not handle dead carcasses, and report dead animals to CPW.

Additional Information/References:

Bluetongue, Epizootic Hemorrhagic Disease, and Other Orbivirus-related Diseases, in *Infectious Diseases of Wild Mammals* (Authors: Elizabeth W. Howerth, David E. Stallknecht, and Peter D. Kirkland)

Rev 12/2019