



Dall Sheep Hunters

Results of Nasal Swab Samples from Hunter-harvested Sheep

The Alaska Department of Fish and Game is grateful to all hunters who participated in the *Mycoplasma ovipneumoniae* surveillance effort. Through your contributions the Division of Wildlife Conservation has furthered its knowledge and understanding of respiratory diseases in Alaskan wildlife. We would like to share some of what we learned thus far.

What is *Mycoplasma ovipneumoniae*?

Mycoplasma ovipneumoniae (also called M. ovi for short) is a bacterium that in combination with other pathogens can lead to respiratory disease such as pneumonia in wild and domestic sheep and goats. M. ovi does not affect humans.



Until the nasal swab sampling of hunter-harvested Dall sheep during the 2017–2019 seasons, little was known about M. ovi in Alaska's wildlife. Mycoplasmas are simple organisms lacking cell walls; more than 100 known species exist but there are likely many more that are unknown. Mycoplasma species are divided further into various genetic types or strains.

What did we do with the samples?

Nasal swabs collected during horn sealing were sent to several out-of-state laboratories for analysis. Samples were tested for the presence of DNA that closely matched DNA from known M. ovi strains.

Why were samples sent to different laboratories?

For this project we utilized both a research lab and a diagnostic lab. Using multiple tests and laboratories on some sample increases our confidence in the results.

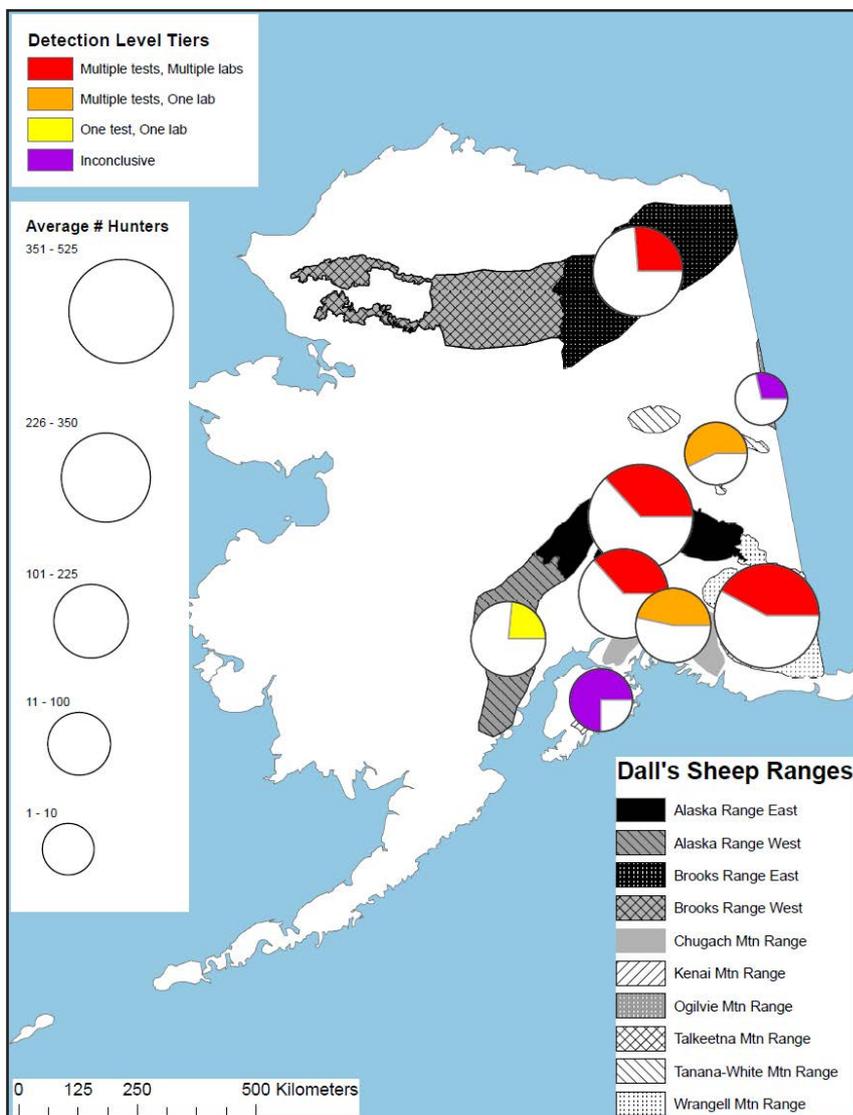
What did we find?

Hunter-harvest sampling focused on identifying which Dall sheep populations currently have M. ovi. During the 3 seasons, over 750 individual hunters participated in the sampling effort. We tested 797 Dall sheep and detected M. ovi in 42. Overall, 5% of sheep tested had M. ovi detected with only one of these reported by the hunter as having any respiratory symptoms. Therefore, nearly all sheep sampled were presumably healthy based on hunter observations.



More results on back

This map shows Dall sheep range areas with relative sampling effort and testing results from 2017–2019 hunter-harvest nasal swab samples. The size of the bubble is the average number of hunters and the size of the wedge is the proportion of sheep hunters whose sheep was tested. The color is the positive detection levels listed in the key.



Purple indicates populations that we have not yet detected any positive samples. Because we have tested so few animals for these populations, we must call the results “inconclusive” rather than negative.

Other new findings on *M. ovi* strains

In addition to hunter harvest sampling, we tested archived samples from live-captured or necropsied Dall sheep and caribou. A Dall sheep lamb that died in 2004 was the earliest available sample where *M. ovi* was detected.

Strain-typing of selected *M. ovi* positive samples from that lamb and all other samples collected to date, found only a single, Alaska-unique strain among Dall sheep and caribou populations and herds. Radio-collared sheep that had positive antibodies in blood collected in 2010

survived without subsequent lamb mortality events. There have been no recognized mass mortality events associated with this strain or any other strain of *M. ovi* in Alaska wildlife.

What we are doing in the future and how you can help

We are continuing to expand our knowledge about *M. ovi* in Alaskan wildlife focusing on understanding the potential health impacts on Dall sheep and other wildlife. During the upcoming season we are asking hunters and the public to promptly report and collect samples from sick animals. If you see wildlife that are coughing or have nasal discharge, please report. If you harvest an animal with symptoms or the lungs look abnormal, please bring unfrozen, chilled samples of the lung and the unskinned head to your local ADF&G office for prompt diagnostic testing.

If you harvest a sheep from the Western Brooks, Western Alaska, Kenai, or Ogilvie Mtn. ranges and bring it for sealing within a week of harvest, we would like to collect samples.

