

Screening packgoats for *Mycoplasma ovipneumoniae* and agents of keratoconjunctivitis (“pinkeye”), *Mycoplasma conjunctivae* and *Chlamydia* spp, throughout the United States

Animal Disease Research Unit-ARS-USDA (Pullman, WA)

Purpose: Collect nasal and conjunctival swabs from packgoats across the United States to screen for carriage of *Mycoplasma ovipneumoniae* and agents associated with keratoconjunctivitis (“pinkeye”).

Justification:

Packgoat use on public lands defined as bighorn sheep habitat is being prohibited across the Western United States. This prohibition is based on the potential that domestic goats, including packgoats, can carry *Mycoplasma ovipneumoniae*, a primary bacterial agent associated with bighorn sheep pneumonia, and bacterial agents that cause pinkeye (*Mycoplasma conjunctivae* and *Chlamydia* spp). In order to understand the prevalence and distribution of these potential bacterial pathogens, as well as to get a significant number of packgoats tested, we (ADRU) request packgoat owners from across the United States to participate in this study. Identifying reservoir species/hosts and distribution of these bacterial pathogens will help determine the potential risk to wildlife as well as possible costs to the health of the hosts (ie. packgoats), as *M. ovipneumoniae* is also an opportunistic pathogen to domestic goats and sheep provided the right circumstances (ie. environmental stressors/unidentified host factors) and pinkeye is a recognized disease entity that can affect domestic goats and sheep. Additionally, identifying any carriers could lead to future investigations into potential ways to clear reservoir hosts of these potential pathogens.

Along with the requested samples below, a short survey will be requested from each participant regarding the signalment and health history/status of the packgoats being tested and of the premises on which the packgoats reside (ie. history of health problems on the premises, if any).

The surveillance project described herein is similar to one performed for domestic sheep by APHIS-National Animal Health Monitoring system in 2011 (see info sheets “*Mycoplasma ovipneumoniae* on U.S. Sheep Operations” at this website:

https://www.aphis.usda.gov/wps/portal?1dmy&uril=wcm%3Apath%3A%2Faphis_content_library%2Fsa_our_focus%2Fsa_animal_health%2Fsa_monitoring_and_surveillance%2Fsa_nahms%2Fct_nahms_sheep_studies).

We are suggesting two protocols:

1. The first is for packgoat owners that use or that live in the Western United States in states in which bighorn sheep are located (North Dakota, South Dakota, Nebraska, Wyoming, Montana, Colorado, Idaho, Washington, Oregon, California, Nevada, New Mexico, Utah, Arizona).
 - Each packgoat will be swabbed 3 times, 3 consecutive months (or thereabout). Blood (red top serum tube) will be collected and submitted at the time of the first nasal swabbing. Samples from the first collection will include 1 conjunctival swab, 2 nasal swabs, and 1 filled red-top (serum) blood tube. ADRU will submit one swab and the serum to the Washington Animal Disease Diagnostic Laboratory (WADDL) for *M. ovipneumoniae* testing and ADRU will retain the second nasal swab for *M. ovipneumoniae* testing in our laboratory. This provides duplicate testing by two independent laboratories. ADRU laboratory will also perform testing for the agents of “pinkeye”. The next two nasal swab collections (no bloods)

will also be done in duplicate, and sent to ADRU. At each of these two subsequent sample collections, a conjunctival swab should also be collected and submitted.

2. The second protocol is for packgoats outside of, or never brought in to, states that are home to bighorn sheep. Requested samples from these packgoats include a single time point nasal swabbing (two swabs), conjunctival swab (1 swab), and one red top serum tube collected and sent to ADRU.

Owners will need to sign and submit a consent form agreeing to allow ADRU to use the collected samples for this research and fill out and submit a short survey, both of which will be sent in with the samples.

Who will collect the swabs?

A veterinarian or assigned/authorized field personnel will need to collect the swabs and bloods. This will either be the owner's personal veterinarian, a state veterinarian, or an APHIS field veterinarian. Details of this will be worked out once we determine the number and locations of packgoat owners willing to participate.

Who will cover the cost?

This is an ADRU research project, therefore costs will be covered, including veterinary/authorized field personnel charges (when/if applicable), supplies, shipping costs, and testing. Should owners decide to participate prior to ADRU being able to identify resources and field veterinarians/personnel, the owner will be responsible for the cost of the veterinarian, however the other costs will be covered.

In order to perform this testing, a fairly large number of packgoat owners from across the United States will need to agree to participate in order to obtain a significant number for analysis and publication. In the event that we get a large number of packgoat owners from "bighorn sheep states" we may also be able to proceed.

What will the outcome be if this project goes forward?

The end goal will be to publish this *M. ovipneumoniae* prevalence data in a peer-reviewed journal (possible venues: JAVMA or Small Ruminant Research), even as a brief communication. This would be a good way to not only compile this data, but to also make it accessible and referenceable.

Please send all questions/inquiries to:

Dr. Maggie Highland

509-335-6327 or via email: Maggie.Highland@ARS.USDA.GOV

Please do not contact WADDL directly, as they will not be able to provide information regarding this study.