

August 2017



Veterinary Services Newsletter

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Wildlife Health Laboratory

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NALHN Certification: The Wildlife Health Laboratory has been working towards joining the National Animal Health Laboratory Network (NALHN) in order to have access to all CWD testing kits. The commercial test kits for CWD are now restricted, and only NALHN approved laboratories have access to all the kits that are currently available. To be considered for the program, our laboratory must meet the ISO 17025 standards of quality control that assure our laboratory is consistently and reliably producing accurate results. In addition, our laboratory will be regularly inspected by APHIS Veterinary Services, and we will be required to complete annual competency tests. Although we have been meeting most of the ISO standards for several years, applying to the NALHN has encouraged us to tighten many of our procedures and quality control monitoring. We hope to have the application submitted by the middle of August and we have our first APHIS inspection in September.

New CWD area for elk: The Wildlife Health Laboratory confirmed the first case of CWD in an elk from hunt area 48. This animal was captured in elk hunt area 33 as part of the elk movement study in the Bighorns to study Brucellosis. She was found dead in hunt area 48, near the very southeastern corner of Washakie County. Unfortunately, this is not the first case of CWD in elk of the Bighorns, where the disease was first documented in hunt area 35 in 2009.

Brucellosis Public Health Fact Sheets: Mary and Hank have been working to update the brucellosis public health risk reduction fact sheets for the Department. This document was written several years ago and was in desperate need of attention. The next 2 pages have a version produced for the general public that provides basic information about the disease and how to protect yourself from being infected. This document is posted on our website and we encourage you to direct the public there if they are seeking information on Brucellosis. We also produced a version for Departmental personnel that covers much of the same information, but has some suggestions on baseline testing/health monitoring and worker's compensation.

Wyoming Game and Fish Department

Brucellosis Information and Guidelines for Risk Reduction

(Public)

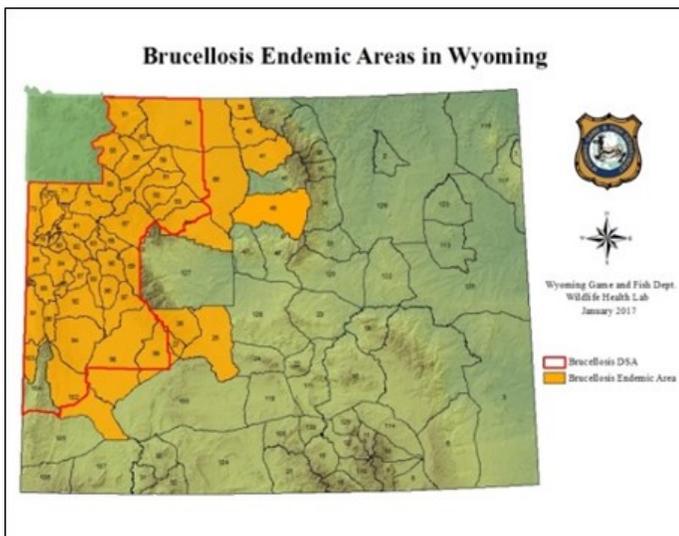
The Wyoming Game and Fish Department (Department) occasionally conducts hunting seasons, depredation hunts, and issues lethal take permits that could place sportspersons at risk of contracting brucellosis through contact with infected elk or bison. The following information and guidelines are designed to minimize the risk of contracting brucellosis.

What is brucellosis?

Brucellosis is a serious infectious disease that you must consider whenever handling carcasses of elk and bison in brucellosis endemic areas (see map below). The disease is caused by the bacteria, *Brucella abortus*, which normally infects ruminants (cattle, bison, elk) but can also be transmitted to humans. Transmission of brucellosis is greatest during the third trimester of pregnancy (generally from Feb 15th to June 30th in elk, and Jan to May in bison), but there is still some low risk at other times of the year.

Where is brucellosis found?

Elk in Teton, Sublette, Park, and Northern Lincoln counties and bison from the Jackson and Yellowstone herds are infected with brucellosis at varying level.



What are signs of brucellosis in elk and bison?

There is no effective way to detect brucellosis infected animals by their appearance. Brucellosis can cause elk or bison to abort or give birth to weak calves. It can cause infections in the joints leading to swollen, enlarged joints with pockets of fluid, known as a hygroma.



Brucellosis positive hygroma near the fetlock of an elk

How can brucellosis be transmitted to humans?

Brucella abortus is primarily transmitted through exposure to a fetus, fetal fluids, uterus, birth fluids, or an open joint or abscess from an infected animal. The probability of becoming infected is dependent on dose and route of exposure. *Brucella* can infect through mucous membranes (mouth, eyes, nose), broken skin (cut, scratch), and under prolonged contact with large numbers of organisms, unbroken skin.

What are the risks of getting brucellosis?

Farmers, veterinarians, and hunters have been infected with brucellosis after exposure to an infected fetus, uterus, or birth fluids. Risk associated with brucellosis during hunting seasons is low; however, standard safety precautions should be followed including: not harvesting obviously ill animals; wearing latex or rubber gloves when field dressing; not cutting into visible abscesses or swollen joints, and reporting obvious abnormalities to WGFD personnel as soon as possible. These precautions are not specific to brucellosis; they apply to all infections that might be encountered in game animals.

What are symptoms of brucellosis in humans?

In humans, symptoms of brucellosis include: a fever that tends to rise and fall (undulant fever), lower back pain, headaches, alternating chills and fevers (especially in the evening), night sweats, and insomnia. Symptoms generally mimic the flu. Brucellosis is treatable with antibiotics, but in rare cases it can progress to a debilitating, lifelong disease. Successful treatment is dependent on taking antibiotics as soon as possible if positive on blood tests or if symptoms appear.

Are elk or bison infected with brucellosis safe to eat?

Brucella abortus is usually localized in lymph nodes or reproductive organs, but almost never in muscle (meat) and it is readily killed by cooking. Carcasses and meat of infected elk and bison are generally quite safe to handle and consume. We recommend cooking all game meat thoroughly prior to consumption.

Personal Protective Equipment (PPE) for field dressing elk and bison

Always wear latex or rubber gloves when field dressing carcasses; consider double gloving for extra protection. Do not handle a pregnant uterus or its contents. Be extremely careful not to puncture the uterus during field dressing and removal. Remove intact uterus by cutting below the cervix (towards the vagina), this will prevent leakage and exposure to fetal fluid. The cervix is a 2-3" long, firm structure that forms the "necklike" passage on the lower end of the uterus (see diagram below) Do not cut into a swollen joint or tendon sheath; do not cut into enlarged testicles. Immediately wash cuts received while processing any carcass. If deep cuts occur, see a physician. Wash hands and forearms thoroughly with soap and water as soon as you return from the field. Hand sanitizer can be used as an alternative if soap and water are not available.

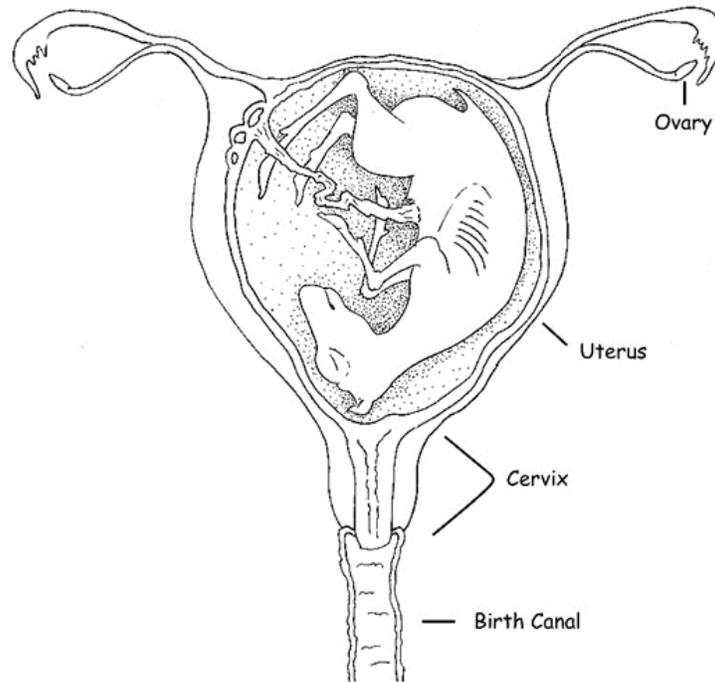


Diagram showing location of the cervix. Always cut on the birth canal (toward vagina) side of the cervix. *Diagram by Jessica Jennings-Gaines*

Treatment

The symptoms of brucellosis may take up to 6 weeks to appear and include a fever that tends to rise and fall (undulant fever), lower back pain, headaches, alternating chills and fevers (especially in the evening), night sweats, and insomnia. Immediately see your physician for an examination and treatment. Recommend that your physician contact the Wyoming Department of Public Health for further information and guidance on treatment/monitoring of brucellosis

More Information

Contact the WGFD Wildlife Health Laboratory at (307) 745-5865, or see our website at: <https://wgfd.wyo.gov/Wildlife-in-Wyoming/More-Wildlife/Wildlife-Disease/Brucellosis-Info-and-Maps> or scan the QR code below.



Wyoming Game & Fish Department
Wildlife Health Laboratory



Thorne/Williams Wildlife Research Center (TWRC)

The majority of July found the Sybille crew building a new interior fence in our far eastern pasture. This double fence along the highway will add another layer of security to the facility both in keeping wild animals out and our captive animals in. It also provides a buffer between the research animals and people stopping to observe them along the highway. We occasionally have issues with people feeding the animals or reaching through the fence to pet them. This will eliminate that issue and create a safer viewing experience for people and the animals. Stretches of double fencing along the highway will be done in stages as time and funds allow as this type of fence is quite expensive and very labor intensive to install. You can also see in the background the new road condition webcam WYDOT is in the process of installing here in the canyon.



New interior fence in the eastern pasture of the facility.



Double fencing along the highway.

In addition to fencing the pastures, we also worked on basic required facility cleaning and maintenance. Once a year, we empty our corrals and scrape them down to bare dirt to remove all of the old hay and feces and allow things to dry out. This helps with basic facility cleanliness and also helps with parasite management at the facility. After corrals are scraped down, they are left vacant so the sun can dry them out and help kill any parasite eggs that might be in the soil. We also take this opportunity to inspect corral fences and gates for routine maintenance and repairs. The corral fences are generally easy to maintain, but do occasionally require replacing timbers as they get older and split.



Corral scraped down to bare dirt to clean and dry out.

Wildlife Necropsy Summary

Nine diagnostic cases were submitted for necropsy during July. Seven additional cases are pending.

Species	Date Received	County	Diagnosis
Bat	7/7/2017	Fremont	Rabies negative
Elk	7/7/2017	Albany	Trauma, emaciation
Prairie dog (2)	7/7/2017	Converse	Plague
Mule deer (2)	7/12/2017	Sweetwater	Trauma, emaciation
Pronghorn	7/18/2017	Fremont	Undetermined
Bat	7/19/2017	Fremont	Rabies negative
Bat	7/20/2017	Park	Rabies negative

Disease of the Month

Disease of the Month: Plague

During July, plague was diagnosed from two prairie dogs which died in the Thunder Basin National Grassland. Sylvatic plague is a transmissible zoonotic disease caused by a bacterium, *Yersinia pestis*. This is the same bacterium responsible for the “black death” affecting millions of people in Europe in the mid-14th century. In the late 1890s, rat-infested steamships introduced plague into the continental United States. The first human cases in the US were seen in San Francisco in 1900 and the disease soon spread from urban rats to native wild rodents.

Plague was first identified in Wyoming in 1936 from ground squirrel fleas collected in Yellowstone National Park and has since been identified in every county except Hot Springs and Natrona.

Hosts and Transmission

Many species of mammal are susceptible to plague, but rodents and rabbits are the most important host species for plague. Wild rodents are the natural vertebrate reservoir for plague and the disease is typically transmitted by fleas.

While some species of rodent are relatively resistant to plague (certain species of voles, kangaroo rats, and deer mice) other species are highly susceptible. Plague mortality in prairie dogs often exceeds 90% and large-scale die-offs may result in local or even regional extirpations. Black-footed ferrets are also highly susceptible to plague. During large plague outbreaks, ferrets that manage to avoid exposure may still die due to the elimination of prairie dogs which are their primary food source.



Prairie dogs are very susceptible to plague.

Felids are particularly susceptible to plague, and can be infected by eating infected rodents. Humans have contracted plague through contact with infected mountain lions and by skinning infected bobcats. Sick domestic cats can pose a risk of transmitting infectious plague to their owners or to veterinarians. Canids are among the more resistant species and may not become overtly ill due to plague infection. While dogs are less likely to become ill, but they can still bring plague-infected fleas into the home.

Human Plague

Human plague is rare in Wyoming with 6 cases reported since 1978. Plague can infection can present in multiple ways in humans:

- *Bubonic Plague:* this form accounts for 82% of infections. This form is usually the result of an infected flea bite. Symptoms of bubonic plague include chills, acute onset fever, swollen and painful lymph nodes and general malaise.
- *Septicemic Plague:* about 10% of plague cases are septicemic, meaning the disease has entered into the blood stream. Symptoms include fever and chills, extreme weakness, abdominal pain, diarrhea and vomiting, bleeding from the mouth, nose, rectum, or under the skin, shock, and blackening of dead tissues. Untreated septicemic plague is invariably fatal within one to three days.
- *Pneumonic Plague:* About 8% of plague cases are the pneumonic form, meaning the disease infects the lungs. Pneumonic plague may develop from inhaling infectious droplets or when plague spreads to the lungs from the blood stream. Symptoms of pneumonic plague include fever, headache, weakness, and a rapidly developing pneumonia with shortness of breath, chest pain, cough, and sometimes bloody or watery mucous.

Prevention

There are steps people can take to protect themselves in areas where plague is found. The CDC warns against picking up or touching dead animals and letting pets sleep in the bed with you. Other recommendations include, wearing long pants and using insect repellent on clothing and skin. It also recommends protecting pets from fleas and removing garbage, clutter, brush and anything that could be a food source for rodents.