

Wyoming Brucellosis Coordination Team

May 22, 2018

Lander, WY

I. Welcome and Introductions.

Chairman Galey called the meeting to order. Members in attendance: Bill Williams (DVM, Former G&F Commissioner), Scott Talbott (WGFD Director), Rob Hendry (Rancher, Natrona County Commissioner), Senator Fred Emerich DVM (WY State Senate), Albert Sommers (WY State Representative, Rancher), David Rael (WG&F Commission), Jim Logan (WY State Veterinarian), Will Laegreid (WSVL Director), Mary Wood (WGFD Veterinarian), Scott Werbelow (WGFD), Doug Miyamoto (WY Dept Agriculture Director), Karl Musgrave (WY State Public Health Veterinarian), Terry Pollard (WY Outfitters and Guides Assoc), Thach Winslow (WY Asst State Veterinarian), Thomas Linfield (USDA APHIS), Bruce Hoar (COANR), Arlen Lancaster (Nature Conservancy), Barton Stam (UW Extension), Beth Callaway (Governor Matt Mead's Office, via conference call).

Guests: Eric Liska (MT Department of Livestock), Deb Lawrence (ID Department of Agriculture), Brant Schumaker (UWYO), Brandon Scurlock (WGFD), Hank Edwards (WGFD), Eric Maichak (WGFD)

II. WY State Veterinarian Report

Dr. Jim Logan (JL) provided the WY State Veterinarian report to the group (see attached file for complete details). As of today, there are no active domestic livestock brucellosis cases in Wyoming. The last positive herd was in Sublette County, and was released from quarantine on June 1, 2017.

JL: The Wyoming Livestock Board (WLSB) voted at its February meeting to amend the Brucellosis Area of Concern. Previously this included all of Big Horn and Sheridan Counties, but has been changed to include only elk hunt areas 39, 40, and 41 in Big Horn County. WLSB is employing a more scientific approach in establishing these boundaries.

JL: Lincoln County commissioners and cattle producers requested that the southern boundary of the DSA be revised to the southern boundary of the Bridger-Teton National Forest north of Cokeville. The Board voted to not change the boundary, but directed the state veterinary staff to do further study on risk of brucellosis in the area. Drs. Logan and Winslow will meet with producers on July 11 in the Cokeville area.

JL: Lander area elk are a concern. Producers and the public see cattle and elk commingling in the Sinks Canyon and Northfork area, even during the high risk season for Brucellosis exposure. The problem is that we don't know the seroprevalence of Brucellosis in elk in the region. More surveillance would help WLSB with decision making. A letter from this group requesting additional funding from USDA APHIS would be greatly appreciated.

JL: We continue to work with producers and veterinarians to educate them about brucellosis and to encourage risk assessment and herd plan development.

JL: I am leading a National Assembly of State Animal Health Officials to advise USDA APHIS on suggested revisions and updates to the federal Brucellosis rules. Another committee is working on rules related to Tuberculosis. Updated rules will reflect current scientific knowledge.

Thomas Linfield (TL): How did you approach this issue, of TB and Brucellosis?

JL: Putting TB and Brucellosis together in a combined rule would be hard, each disease might best be dealt with individually. We found some useful material in the proposed rule, from the current rule, and from elsewhere.

Frank Galey (FG): Is there anything you can share with the group at this time?

JL: Not really, it is still under APHIS review and won't go public until a new proposed rule is ready for public comment.

FG: What would be the best approach to drafting and sending a letter requesting APHIS funding?

JL: A letter from the BCT to Governor Mead, with cc to Secretary Perdue and Dr. Shere (APHIS Administrator and Chief Veterinary Officer) requesting additional funding for surveillance of wildlife would be helpful.

Rob Hendry (RH): This is a good idea – I was in a meeting with Secretary Perdue last week, and mentioned Brucellosis surveillance as an issue – a letter would therefore be timely.

TL: Where specifically would you want the money to go?

JL: Currently, WLSB and WGFD have separate funding routes, this request would be more directed to WGFD, but any funding to WLSB would be appreciated.

Scott Talbott (ST): Funding obviously is very important, federal assistance especially. We need to keep in mind lab capacity – our lab is stretched pretty thin at the moment.

RH: We need to involve the Governor.

Beth Callaway (BC): I am happy to help facilitate in any way I can.

JL: WLSB has been asked to increase the number of risk assessments it performs, any additional funds would be very helpful.

FG: It is agreed that the BCT will work on a letter with Jim Logan and Scott Talbott that we can forward to the Governor for him to send directly to APHIS and copied to Secretary Perdue and our Congressional Delegation requesting additional funding for Brucellosis surveillance.

Thach Winslow (TW): Brucellosis in the Bighorns (see attached powerpoint presentation). In March 2013, two seropositive elk were detected from Hunt Area 40 (out of 26 tested). WGFD did additional surveillance in the area, 2 more elk were found in the fall of 2013. WLSB intensified cattle testing, and sampled 6,644 head from 2013-14, which is less than 15% of the cattle in the two counties (Big Horn and Sheridan). Should the DSA be increased in size? There are 89,700 cattle in the existing DSA, and 36,000 tested annually. Sheridan and Big Horn County have 65,000 cattle. Expanding the DSA would increase the required testing by over 70% with no additional funds to do so. This would be a severe dilution of resources.

TW: In the fall of 2014, 3 more positive elk in HA 39, 40, and 41. Speculation as to where it came from – MT?, Park County?, Greybull river? Two of 61 collared elk in Feb 2016 were positive. Also in 2016, the Western States Animal Health Association drafted a letter directed at the Bighorns, however the DSA was not expanded. In fall 2016, one cow elk was found positive in HA 40 and a bull in HA 49. Other states (MT, SD, NE) imposed additional testing requirements on WY cattle from Big Horn and Sheridan Counties. In 2017, USDA reviewed the WY Brucellosis Management Plan – the review was strongly favorable, but they had concerns about the Bighorns. From the spring of 2017 to the spring of 2018, there were no positive elk found in the Bighorn Mountains – from 144 hunter killed and 105 collared elk.

TW: There has been increased testing of cattle in both Big Horn and Sheridan Counties, both in terms of number of herds and number of animals, in general, however the elk movement data indicating that elk do not move over the mountains into Sheridan County has somewhat reduced testing lately. The elk collar data is proving invaluable. The maps created show true risk areas, which allows for efficient use of resources. Only 34 producers have cattle in the temporal risk area at any time. On 2/26/2018, WLSB redefined the Brucellosis Area of Concern to elk hunt areas 39, 40, and 41.

JL: The amended Brucellosis Area of Concern has also been signed by Governor Mead.

TW: We now propose three categories of risk: 1) Insignificant, 2) Potential, and 3) Significant. All herds are considered as significant unless a risk assessment has been done showing a different risk level.

Albert Summers (AS): From the reduced testing in Big Horn County, how much money did you revert?

JL: About \$50,000. That still leaves enough as long as there are no big problems in the future.

TW: Back to the question of where did it come from – it's important to remember that situations change – impact of snow, predators, wolves, etc. can all have an unpredictable impact.

RH: Are those 34 producers informed and paying attention to this?

TW: We are in the process, but think they will be proactive, especially if shown the data.

JL: Producers have been receptive, but we don't get all of them in the room. Word doesn't always get out.

TW: The increase in testing numbers shows that outreach can be effective.

Barton Stam: We held two producer meetings in February – one in conjunction with WESTI AG days, and another in Lovell. There were probably a total of 50 producers that attended. There were lots of good questions, great response.

JL: We were very impressed with the turnout, quality of questions, and level of interest. The BMAP meetings put on by WGFD were also very productive.

III. MT / ID Case Updates

Eric Liska (EL): Please see handout for more details. There are approximately 84,000 head of cattle and bison in the MT DSA. TO date, 85,202 head have been tested at a cost of about \$9/animal. Montana continues to have a domestic bison herd under quarantine. This is a herd of 4,500 test eligible animals and is still finding positive animals on annual tests. A cattle herd from Madison County was detected in 2017, tested, and has been released from quarantine

EL: Fish, Wildlife, and Parks detected brucellosis in one elk of 100 captured in an area south and west of the current DSA. Based on this, MT will propose to increase the size of its DSA, including the elk hunt area where the positive animal was found. This will result in another 12,000 cattle being included in the DSA.

JL: Are the herds adjacent to the quarantined bison herd routinely surveilled?

EL: Yes, they are in the DSA, so every year.

Bill Williams (BW): What are your vaccine recommendations?

EL: Recommend booster vaccinations for heifers and adult vaccination every 2-3 years, depending on risk.

Deb Lawrence (DL): Idaho update. See powerpoint for more details. Idaho Fish and Game collected samples from 247 elk in 2017-18, with one reactor and one suspect from Unit 49, which is a long way from the DSA border (maybe 100 miles). Lots of people feed elk in the area. There is no change in the DSA boundary proposed at this time. Within the ID DSA are 2,608 resident cattle and 6,924 DSA grazers. One positive herd has been identified in Teton County, ID. This is a herd of 550 head, purebred operation. Two whole herd tests have been performed with no reactors or suspects detected. Since the cows and bulls were separated, it was determined that the producer could go ahead with their production sale in fall 2017.

JL: WY got a few bulls from that sale – all have been tested a couple of times already, and all are negative.

BW: Vaccination history for the affected herd?

DL: Calfhood vaccination only.

IV. Research update

Brant Schumaker (BSch): Brucella Diagnostic test development research update. First off, this project has received funding from a variety of sources, including the Governor's Brucellosis Funds, and for that we are thankful. Our goal was to develop a PCR test for *B. abortus* so that we can differentiate those exposed from those infected. We identified SNP's (single nucleotide polymorphisms) that could differentiate *B. abortus*, then used the SNP's to develop a PCR test. We have found that the organism may localize within infected tissue, so it is better to test the whole lymph node, rather than a small portion. We found that performing a ten-fold concentration was important to achieving good results. We validated the test on YNP bison and found 100% sensitivity and specificity, using culture as the gold standard. There was no cross reaction with any of the closely related bacterial species.

BSch: Next, we did a prevalence study in YNP bison that were sent to slaughter. We collected samples from 159 bison in the winter of 2017. Our prevalence estimates ranged from 16% for culture to 66% by PCR. Head tissues had the highest prevalence. Calves (less than two years of age) had even higher prevalence, up to 69% by PCR. This high prevalence indicates to us that there may be vertical transmission of the bacteria.

BSch: Another project we are working on currently is to extend the PCR test to include *Brucella suis*. This is important because *B. suis* cross reacts with *B. abortus* on antibody tests, making diagnosis problematic. We have obtained samples from about 250 feral swine and are currently working on sample processing.

JL: How much did the select agent rule retard your study, and how far along are you with validation of results?

BSch: Ideally we would have done parallel testing on the same samples throughout the process, however the select agent rule made that impossible. We are currently in the peer review process of the results and hope to have our work published within the next 6 months or so.

BW: Any work on *B. suis* vaccine?

BSch: Not aware of any ongoing *B. suis* vaccine work, however the Andrews lab is evaluating protein targets that could potentially turn into multi-valent vaccine candidates.

V. Bison Quarantine

Ryan Clarke (RC): The idea is to take bison potentially exposed to *Brucella*, put them in isolation, perform serial tests for antibody, and eventually graduate a bison as *Brucella* free. In 2000, the IABMP (Interagency bison management plan) directed pieces of research, using quarantine as a method of producing *Brucella* free bison. In 2003, the new version of the UMR had a protocol in place for an approved bison quarantine facility, with the stipulation that any facility must be in or close to Yellowstone National Park. From 2005 to 2011, bison calves were put through the protocol to come up with *Brucella* free bison, they ended up in Fort Peck Indian Reservation, where they were tested for 5 more years. They are still *Brucella* free. In 2013, YNP was directed to use quarantine as a method of getting bison out of the park, brucellosis free. Just last week, YNP signed a document indicating No Significant Impact from the Environmental Assessment.

RC: In the winter of 2016 and 2017, a bunch of bison were isolated in corrals inside YNP. Unfortunately, the fences were cut and all the bison escaped. Now, about 100 are in isolation and targeted for testing. Meanwhile, across the river at Corwin Springs, USDA has stopped bison research at the facility, there are negotiations ongoing to make it a quarantine facility. Stephens Creek (within the park) also looking to become an approved quarantine facility. Fort Peck would also like to become such a facility but that hasn't happened yet. It will become an Assurance Facility – it will receive bison from Corwin/Stephens for further testing.

Jonathon Proctor (JP): Defenders of Wildlife. We see a need for a quarantine process to restore bison on the Great Plains. Tolerance zones around YNP in Gardiner Basin are increasing in size, hunting by tribes is now allowed. There is strong interest in bison restoration in large numbers

on large enough areas of land to be self-sustaining. Many areas, both public and tribal, are ready and willing to accept bison from YNP.

RH: The fence cutting was just crazy, no matter what side of the issue you are on.

RC: We were strong proponents of visible ID in all the quarantined bison, but YNP resisted. Once the fence was cut they can't find any of the bison.

JL: Any update on the Gonacon study?

RC: Gonacon is a contraceptive vaccine. The thought being that if you take 3 to 5 year old females out of the reproductive population for 3 to 5 years, you could drastically reduce the seroprevalence of brucellosis tremendously. Last summer, a new interpretation of the Select Agent Rules was released, and this resulted in the study being ended. All the seropositive animals were removed, leaving 62 seronegatives behind.

VI Public Comment

John Duncan: For the first time in 5 years, all elk tested from the Big Horn Mountains were test negative, despite a record number of hunter killed samples being submitted. I am hopeful that propagation of the organism is not occurring. There is a need to continue with active, increased surveillance. The number of cow elk tags should be increased in the Brucellosis Area of Concern. This committee should support that effort. Especially where cow elk numbers are high and above target levels.

VII. Wyoming Game and Fish Hunter Surveillance Updates

Hank Edwards (HE): Hunter killed elk surveillance (See power point for more details). We now have 26 years of data, comprising 15,684 samples. In 2017, WGFD sent out 10,500 test kits, with 6,049 going to the Big Horns. Statewide, we received 1,438 blood samples, of which 1,337 (93%) were suitable for testing, 708 being from the Big Horns. We continue to see increasing prevalence in Cody, Gooseberry areas. BUT, no positive elk samples from the Big Horns this year!

HE: Previously we would discard 30-50% of serum samples due to hemolysis. The old, subjective tests are no longer being used, rather FPA (fluorescent polarization assay) is the standard, and is very objective. For this reason, WGFD did a study looking at hemolysis from 0 to 100%. The results show that not all hemolyzed samples are bad, we are now discarding only 7 to 10% of samples. There is a low risk of false negative and false positive results, however further research is needed.

RH: Elk refuges– how can that be overcome?

ST: Many properties are owned for recreation purposes, not owned by cattle producers. We need landowners cooperation which can be difficult at times. Personal relationships are needed to overcome some of the problems.

VII. North Bighorn Elk movement update

Eric Maichak (EM): (See attached power point for details) The objective of this study is to monitor and assess the movement of elk among herd units and hunt areas in the Bighorn Mountains. Up to 180 elk have been captured and followed. We are seeing more movement from North to South rather than West to East. There seems to be some west to east movement in the southern Bighorns. This is ongoing work, we continue to create risk models looking at spread of elk as well as defining seasonal ranges.

JL: Have you used VITs in these elk?

EM: No, we haven't. Parturition areas can be determined using the GPS data.

EM: BMAP update 2018. Gooseberry/Cody elk herds are from 15 to 23% seropositive and Absaroka Bison are up to 60% seropositive. We had meetings over the past months with producers, land managers, NGO's and others to discuss what options might be available to help minimize transmission. The elk actions that were presented include hazing, habitat enhancement, improved fencing, increased harvest, harvest sampling, report abortions, risk mapping and land use/policy. For bison, actions include harvest and lethal removal, harvest sampling and hazing. Landowner education is critical, but reaching people that don't show up at meetings is especially problematic.

AS: We really appreciate the risk mapping that WGFD is doing. This makes it possible to define which producers have the greatest risk.

RH: Did producers report seeing elk in weird places?

EM: At the meetings, we would always ask if you see more elk than you used to in previous years. Invariably the answer was yes, especially as you moved further east.

AS: Are the elk calving earlier?

EM: No, not in the three years of this study.

Brandon Scurlock (BScu): No, the season hasn't changed, elk still calve at the same time.

VIII. WGFD Feedground surveillance

Brandon Scurlock (BScu): (See attached power point for further details) In the winter of 2018, 270 elk were captured on 12 feedgrounds. One hundred fifty six were yearling and adult cows, and were bled for serologic testing. Of these, 53% were seropositive for brucellosis. Prevalence at Dell Creek feedground was 88% and Scab Creek was 49%. One hypothesis for the very high prevalence is that the winter of 2016-17 was particularly severe, so feeding was extended in many areas. WGFD also deployed 32 GPS collars and 12 VITs.

FG: Last winter (2016-17) was a bad winter, did you see more elk on feedgrounds?

BScu: Yes, it was our impression that elk that did not go to feedgrounds had a high probability of dying.

IX. Antler collection discussion

ST: The value of antlers is increasing. In areas west of the Continental Divide, this brought out very aggressive collection activity. About 5 to 7 years ago, WGFD established a season for antler collection (starts May 1). About 2 to 3 years ago, the concern started to appear on the eastern side of the Continental Divide as well. People are going onto private land without permission to seek antlers. Currently, the trespass provision includes antler hunting. In the last year or so there has been lot of concern about collection on the east side on public land. These activities can displace large numbers of big game animals.

AS: I am drafting a bill that will give WGFD more authority on west side of divide.

JL: At the BMAP meeting in Meeteetse and at Lander there were many producers concerned that antler collectors were driving elk onto their land at the brucellosis high risk period. Having a bill would be helpful.

AS: East side of divide is more controversial. If a season were to open on May 1, it could drive people through sagebrush and affect grouse populations.

X. BSL 3 update

Will Laegreid (WL): Major construction is almost finished. There have been some issues with air handling, waiting on commissioning reports. The new incinerator broke ground today. This will create a hardship in the lab, we will use a temporary one for at least 8 weeks. Scheduled completion is by mid-September. Then, we start waiting on CDC. We won't be able to submit our application until mid-October or so, then CDC will show up in early 2019. Our hope is to be select-agent certified in 2019.

AS: How is the labs testing capacity, in general?

WL: It depends on which section you are looking at. For example, diagnostic serology is good. On Monday, we stopped doing toxicology – the technician left – and it will take at least 6 months to hire someone. The pathologists are working about 70% more than pathologists at other labs.

XI: Legislative Update

AS: The state still has a structural deficit in funding, but there is a good rainy day fund. In general, Brucellosis funding was not cut in the last session.

FE: It was a difficult session, legislators are not too nimble, always playing catch up.

Arlen Lancaster: Shed hunting – should the BCT weigh in with East Side of Continental Divide concerns?

FE: I think so – put it in the rules, rather than making new legislation. Give WGFD discretion to deal with the problem.

FG: The BCT will draft a letter to send to Senator Emerich suggesting that the Game and Fish Commission be granted the responsibility to regulate antler collection in the state. The goal will be to allow rule-making with comment/input to direct the hunting regs in order to avoid unintended consequences in various regions of the state.

AS: I would like to hear the opinions of other stakeholders.

SW: Lots of opposition on East side – it would be important to show that antler hunters are causing problems.

XII. Public Comment

Lloyd Dorsey: Sierra Club Cattle vaccines are essential, we need better tools for use in livestock. A group of 8 NGO's reviewed the National Academy of Science report and sent a letter to Governor's and others, with 12 recommendations. They are opposed to the focus on elk, and believe that livestock management is a more efficient approach to dealing with Brucellosis. Feedgrounds have exacerbated the spread of Brucellosis and poses a risk for CWD transmission, and they would like the feedgrounds to close. Predators and scavengers should be maintained, test and slaughter of elk is not a productive approach, and spatial/temporal separation is important – fencing of haystacks and cattle feeding grounds.

Dwayne Oldham: Caution the group about becoming complacent. Don't sit back and wait for Brucellosis to happen – need a proactive approach.

Marty Heggie: Pitchfork Ranch, west of Meeteetse. They shut down public access to the forest due to shed hunting. Because of this action, they didn't have to haze any elk this year. Horn hunters cause elk to bounce around to where they end up on their ranch.

Motion to adjourn.

APPENDIX I.

Guest attendees

NAME	AFFILIATION
Ryan Clarke	USDA
Jim Magagna	WY Stock Growers Association
Jonathon Proctor	Defenders of Wildlife
Brant Schumaker	UWYO
Ashley Smith	UWYO
April Peregoy	WLSB
Deb Lawrence	ID Dept of Agriculture
Emily Hardgrove	WLSB
Hank Edwards	WGFD
Lloyd Dorsey	Sierra Club
Daryl Lutz	WGFD
Stacia Berry	WDA
Randy Griebel	Bridger-Teton National Forest
John Duncan	USDA
Brandon Scurlock	WGFD
Eric Liska	MT Dept of Livestock
Eric Maichak	WGFD
Marty Heggie	Pitchfork Ranch
Dwayne Oldham	Veterinarian
Jennifer Fernandez	Senator Enzi
Scott Ratliff	Senator Enzi