

## **Bighorn sheep (*Ovis canadensis*) disease management in Wyoming**

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**ABSTRACT:** Like most jurisdictions at the turn of the 20th century, Wyoming's bighorn sheep suffered from unregulated take, forage competition with livestock, loss of habitat, and the introduction of novel pathogens. Although regulated hunting and translocations into historic habitats substantially increased numbers by the end of the 20<sup>th</sup> century, impacts from disease persist and statewide populations are currently lower than they have been in several decades. Recent statewide disease surveillance efforts have greatly increased understanding of respiratory pathogens, while a statewide collaborative group and the actions of numerous non-governmental organizations (NGO's) and federal land management agencies have dramatically reduced the risk of pathogen introduction from domestic sheep to high-priority, core-native herds. Other specific management actions, including removal of wandering bighorns, feral livestock, and non-native mountain goats have also reduced pathogen transmission risk in specific situations. Ongoing research efforts are focused on how respiratory pathogens, habitat, and ewe body condition influence lamb survival. Disease prevention and management in bighorn sheep requires consistent collaboration and coordination among various agencies, entities, private landowners and other stakeholders.

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**KEY WORDS:** bighorn sheep, disease, domestic sheep, respiratory pathogens, Wyoming

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### **INTRODUCTION**

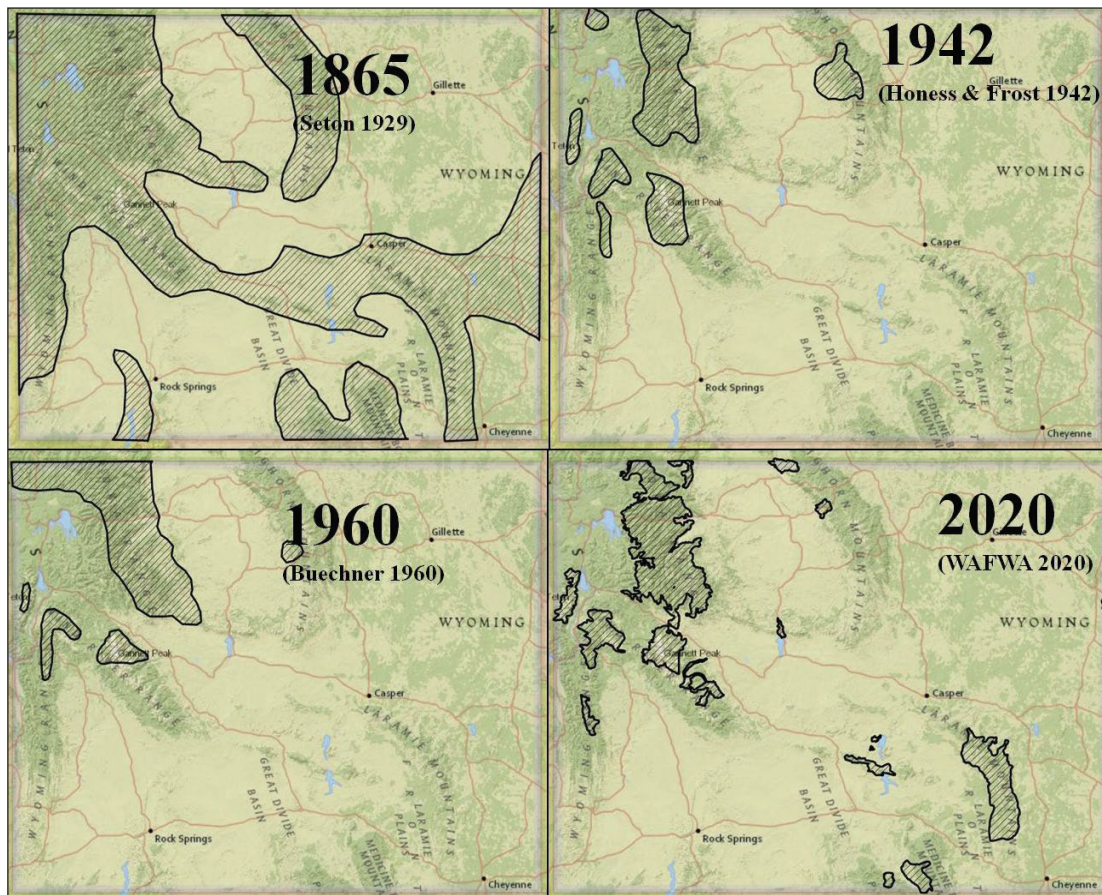
#### ***Distribution 1865 to 2020***

At one time, the distribution of bighorn sheep in Wyoming spanned all of the mountainous habitats in the state, but also included badland, and riverine/prairie bluff habitats. Although depicted at a large scale, the map produced by Seton (1929) is a relatively accurate portrayal of pre-settlement distribution (Figure 1).

Sheep did not escape direct mortality from settlers and market hunters, and shortly after the turn of the 20<sup>th</sup> century bighorns associated with the badland and riverine bluff habitats were the first to be extirpated, along with some of the more isolated, lower elevation mountain ranges. The next distribution map produced in 1942 revealed the occurrence of bighorn sheep was restricted to the Absaroka, Wind River, Gros Ventre, Teton, and Wyoming Ranges of northwest Wyoming, and a small reintroduced population in the Bighorn

Mountains (Figure 1). Forty years later Buechner (1960) found essentially the same distribution (Figure 1).

Aside from the first in-state translocation (in 1934) mentioned above, reintroduction efforts began in earnest in 1949, using the Whiskey Mountain herd as a source population. Between 1949 and 2018, a total of 1,654 bighorn sheep were translocated within Wyoming, and another 144 were brought into the state from other jurisdictions (Wild Sheep Working Group, 2015). These efforts included attempts to restore sheep to all of their former mountain range habitats, but did not include previously occupied badland and river bluff habitats. Success was variable, but by 2020 the distribution of bighorn sheep was expanded substantially, however did not rival presettlement distribution or abundance (Figure 1).



**Figure 1.** Distribution of bighorn sheep in Wyoming, 1865-2020.

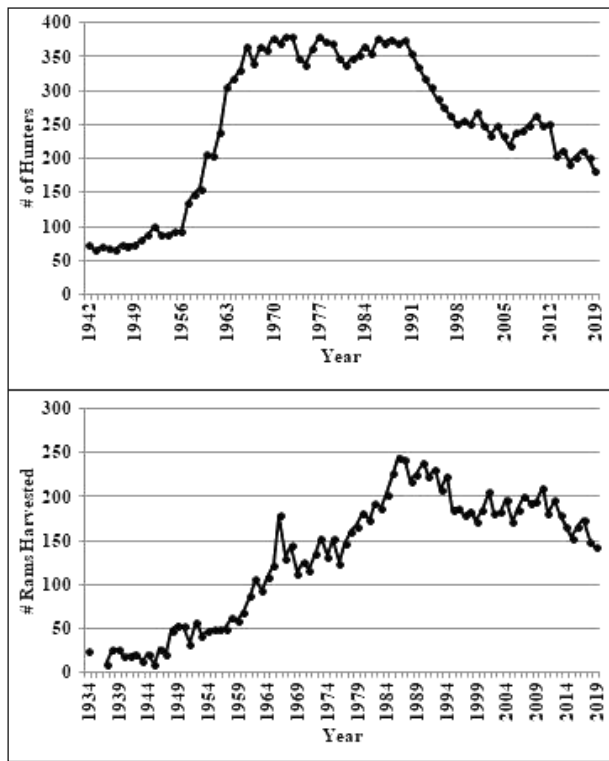
### ***Population Trends***

It is hard to know how many bighorn sheep resided in Wyoming prior to European settlement, but it was likely in the tens of thousands. The earliest estimates of sheep numbers in Wyoming at the turn of the 20<sup>th</sup> century ranged from “a few hundred” to approximately 1,000 (Nowlin, 1904, Nowlin, 1910). In 1942 an estimated 2,500 sheep inhabited Wyoming (Honess and Frost, 1942), and by 1960 that estimate was 2,000 sheep (Buechner, 1960). The 1,798 sheep released into new habitats throughout Wyoming from 1949 to 2018 resulted in the establishment of new populations, although several experienced initial growth followed by precipitous declines and eventually stabilizing, with some becoming totally extirpated (Wild Sheep Working Group, 2015). These translocations, accompanied by the recovery and growth of the large Core-Native herds in the Absaroka and Wind

River Mountains brought sheep numbers to a recent high of over 7,300 sheep by the early 1990s. Population declines in these same large Core-Native herds occurred in 1991 (Wind River Mountains) and 2011 (Absaroka Mountains), to where there are an estimated 6,300 bighorn sheep in Wyoming today. Hunter numbers and ram harvest approximate this trend in abundance through time (Figure 2).

### ***Detection of Disease Events***

Due to the vastness of bighorn sheep ranges and the widespread distribution of sheep exhibiting a diversity of migratory behaviors (Lowrey *et al.* 2019), detection of disease events can be challenging. The Absaroka Mountains alone contain almost 2,000,000 acres (3,030 mi<sup>2</sup>) of occupied bighorn sheep habitat, and perhaps as many as 4,700 sheep. Monetary and logistical



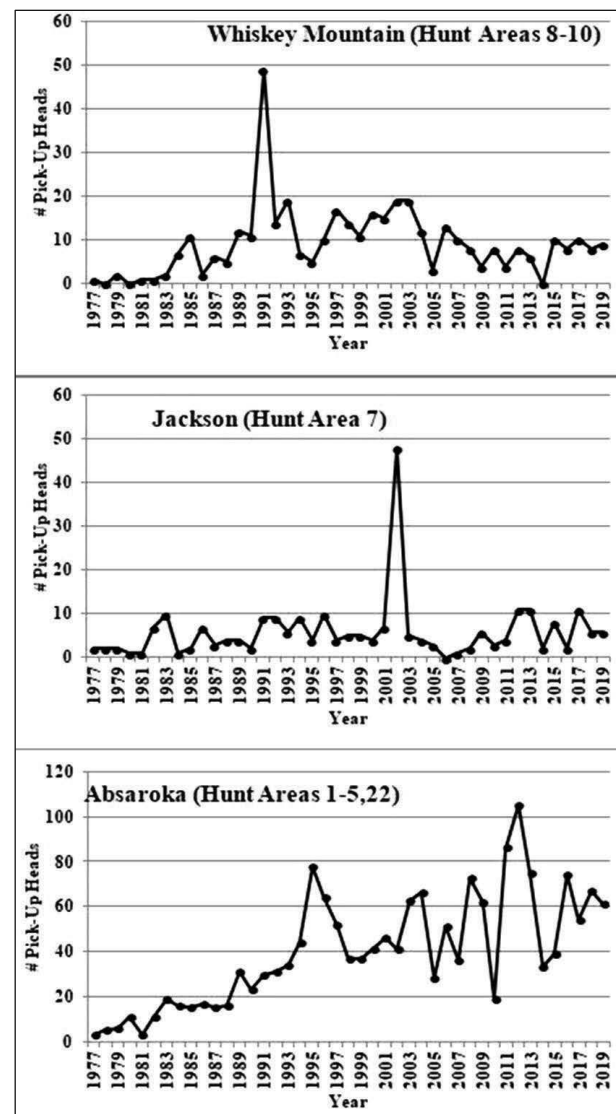
**Figure 2.** Hunter numbers and ram harvest in Wyoming, 1942-2019.

constraints make surveying such an area difficult, and disease events could be occurring in subpopulations that are rarely monitored.

One valuable avenue to detect mortality events are pick-up heads. In Wyoming, the horns of dead bighorn sheep are allowed to be picked up (hence the name), although they must be registered at a Wyoming Game and Fish Department Regional Office within 15 days of their discovery (Wyoming Statute 23-3-117). As a result, mortality events can be detected when unusually high numbers of pickup heads are found. Figure 3 shows evidence of the all-age pneumonia die off in the Whiskey Mountain herd in 1991 and a similar event in the Jackson herd in 2001. Pick-up head registrations in the Absaroka herd represent a general population increase from in 1977 (when registration became mandatory), a mortality event in 1995 that affected a portion of the herd, and recovery before another more widespread mortality event in 2011. These mortality events were triggered by unusually severe winter conditions but likely may have included a disease component as well.

### *Disease Surveillance*

In an attempt to understand pathogen communities in bighorn sheep herds across Wyoming, a statewide disease surveillance effort was initiated in 2011 and over the course of ten years sheep from every herd in Wyoming were captured and sampled. Due to sympatric populations of mountain goats in specific bighorn sheep herds, mountain goats were sampled also. This resulted in the capture of 976 bighorn sheep from 12 herds and 64 mountain goats from two herds. Sampling methodology for this surveillance



**Figure 3.** Registered bighorn sheep pick-up heads from the Whiskey Mountain, Jackson, and Absaroka herd units, 1977-2019.



effort is discussed in detail in Butler *et al.* (2018), but included collection of nasal and tonsil swabs, blood, ear swabs, and fecal samples.

Findings from this work documented the presence of concerning pathogens in most populations of both sheep and mountain goats. *Mycoplasma ovipneumoniae* was found in three of the four Core-Native herds in northwest Wyoming (Absaroka, Whiskey Mountain, Jackson), but not in the Targhee herd in the Teton Range (Figure 4). Absaroka, Whiskey Mountain, and Jackson herds also harbored leukotoxin positive *Bibersteinia trehalosi*. *M. ovipneumoniae* was also found in two transplant herds (Temple Peak, Laramie Peak), as well as the remnant Shell Canyon herd. Six other transplant herds (Devils Canyon, Ferris-Seminole, Kouba Canyon, Douglas Creek, Encampment, Darby Mountain) had leukotoxin positive *Mannheimia haemolytica*/*M. glucosida*, leukotoxin positive *Mannheimia* species (*M. granulomatis*, *M. ruminalis*, *M. varigena*), and *Pasteurella multocida* (Figure 4). The Targhee herd, the smallest of the Core-Native herds, had the fewest pathogens which included only leukotoxin

positive *Mannheimia* species (*M. granulomatis*, *M. ruminalis*, *M. varigena*) and *Pasteurella multocida* (Figure 4).

In addition to pathogen presence, the occurrence of sinus tumors was determined through incidental sampling of animals and by taxidermist collected samples. To date, samples have been collected from nine of the 12 sheep herds in Wyoming with sinus tumors documented or suspected in six (Absaroka, Whiskey Mountain, Jackson, Laramie Peak, Douglas Creek, Encampment) (Figure 5). Sinus tumors were also documented in wandering bighorn rams that were euthanized, and in a mountain goat from the Absaroka Mountains. Much is still to be learned about the origin of sinus tumors and the role they play in pathogen shedding and their contribution to the persistence of disease in bighorn sheep populations.

### Research

To untangle some of the relationships among disease status, nutrition, and lamb survival, research was initiated in 2015 to evaluate how

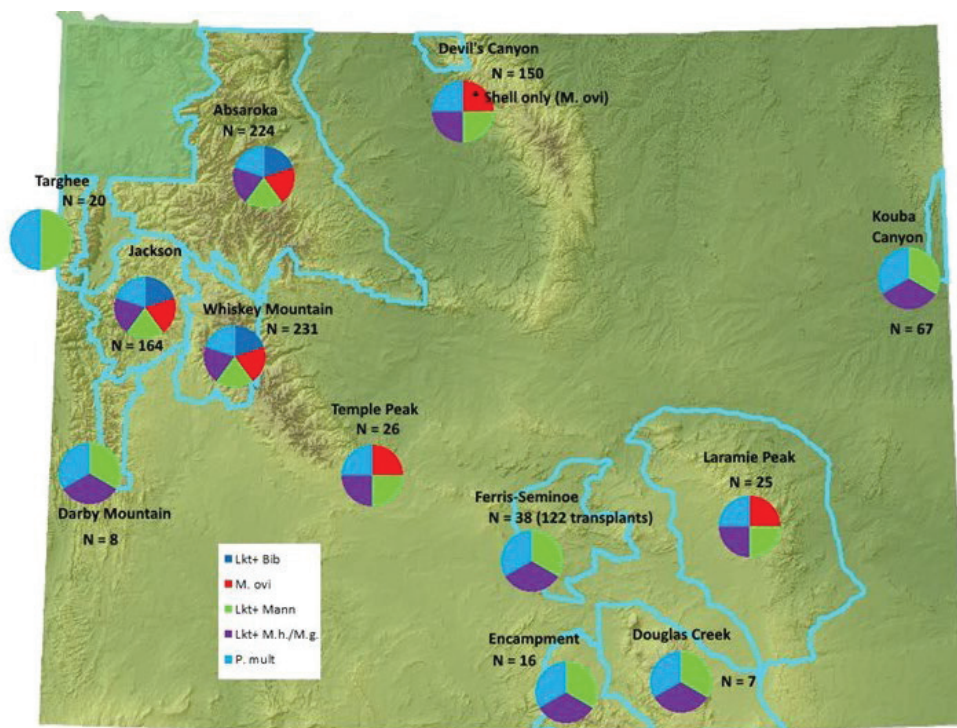


Figure 4. Distribution of bighorn sheep respiratory pathogens in Wyoming, sampled from 2011-2019.



**Figure 5.** Distribution of nasal tumors in Wyoming bighorn sheep, 2011-2019.

environmental and physiological factors interact with immune function to affect a ewe's susceptibility to pneumonia and how that in turn affects her ability to raise a lamb. Herds involved with this research include the Absaroka, Whiskey Mountain, and Jackson herds which all possess a full complement of respiratory pathogens but differ with respect to nutritional status and lamb recruitment.

### ***Wyoming Bighorn Sheep-Domestic Sheep Interaction Working Group***

Due to conflicts arising on public lands between bighorn sheep populations and domestic sheep grazing, then Governor Jim Geringer and Senator Craig Thomas convened a group to collaboratively develop solutions to conflicts between wild and domestic sheep. That initial meeting turned into a working group that developed a plan to address these conflicts that was eventually translated into Wyoming Statute 11-19-604 and thereby guiding these efforts.

The group was named the Wyoming Bighorn Sheep-Domestic Sheep Interaction Working Group that continues to meet over 20 years after the first gathering. A key component of the plan authored by the Group (referred to as "the Wyoming Plan") includes the stated goal of maintaining healthy bighorn sheep populations while sustaining an economically viable domestic sheep industry. Another key component are the terms of agreement that guide how this goal will be achieved. These terms of agreement are extremely important and include the following (not a complete list):

- The domestic sheep industry is important to Wyoming and should be protected; this includes protection and stability of grazing allotments and management changes only on a willing permittee basis - not under a sense of urgency or duress.
- Bighorn sheep are important to Wyoming and should be protected and enhanced in terms of numbers, health, and distribution.
- There is a need for open, non-inflammatory communication. There is a risk of disease transmission but rhetorical dialogue and



interchange among all parties on degrees of risk is not beneficial or desirable.

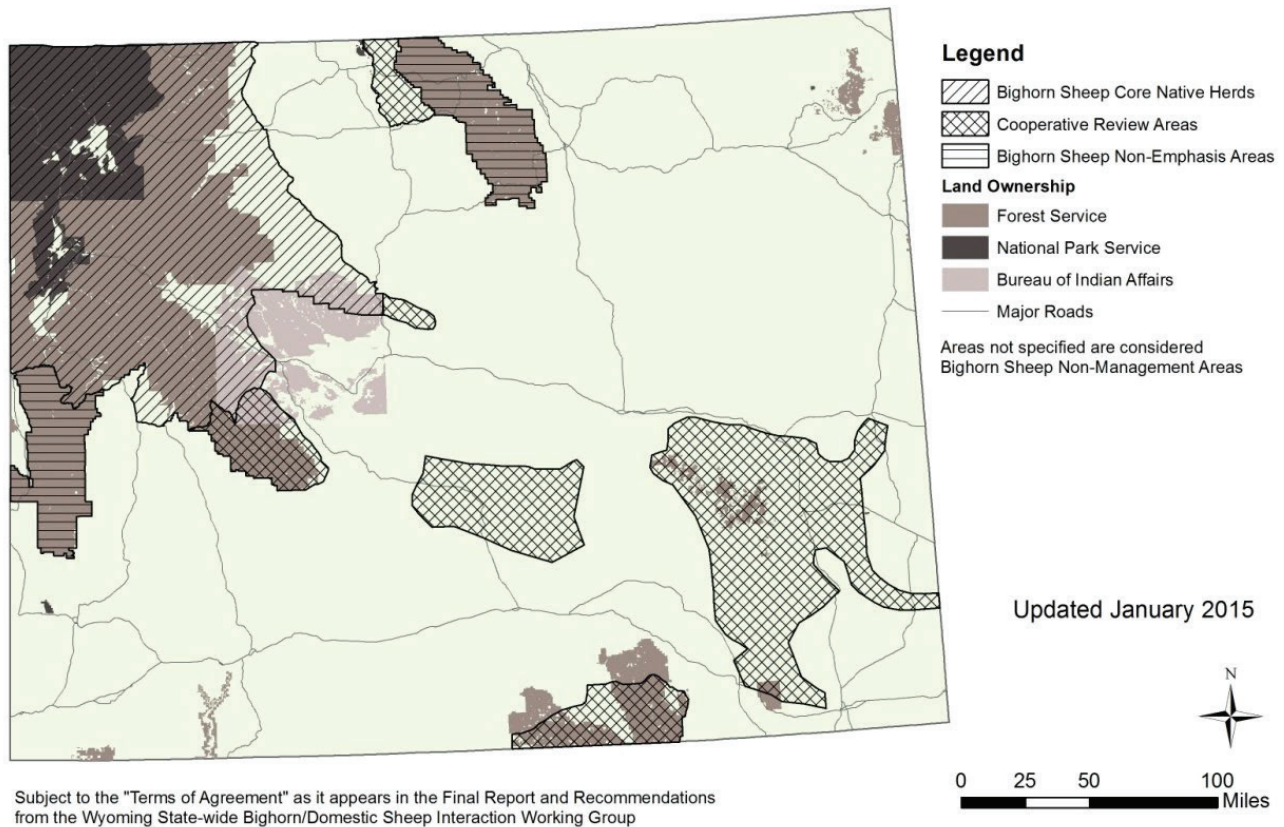
- Existing and/or potential conflicts between domestic and both Core-Native and transplanted bighorn sheep should not be used as surrogate issues to force or effect resource management decisions; the retirement, reduction, or removal of grazing allotments and management changes should be only on a willing permittee basis - not under a sense of urgency or duress.
- No net loss of domestic sheep industry AUMs in Wyoming is an important goal. While that may not be achievable in every given retirement, reduction, or removal of grazing allotments or management change, an honest effort to achieve that goal will be made in every case, with the economic viability of the individual permittee and the industry as the foremost concerns.

The other key component of the Wyoming Plan is the prioritization of sheep herds throughout Wyoming into three specific management areas (Figure 6). These are:

### *Core-Native Herds*

These sheep herds occur in the Teton, Absaroka, Gros Ventre, and Wind River ranges, have never been extirpated then reestablished via transplants, and are the highest priority areas for bighorn sheep management in Wyoming. Although domestic sheep may occur within the boundaries of the Core-Native bighorn sheep herds, all efforts are made to prevent contact between bighorn and domestic sheep, as agreed to by the Statewide Bighorn/Domestic Sheep Interaction Working Group.

## Wyoming Bighorn Sheep Management Areas



Subject to the "Terms of Agreement" as it appears in the Final Report and Recommendations from the Wyoming State-wide Bighorn/Domestic Sheep Interaction Working Group

**Figure 6.** Bighorn sheep management areas as defined by the Wyoming Bighorn Sheep – Domestic Sheep Interaction Working Group Final Report and Wyoming Statute 11-19-604.

### ***Cooperative Review Areas***

These are the areas of suitable bighorn sheep range where proposed changes in bighorn sheep management or domestic sheep use are cooperatively evaluated and include the most suitable bighorn sheep ranges in Wyoming not addressed in the Core-Native herds, or Non-Emphasis Areas.

### ***Bighorn Sheep Non-Emphasis Areas***

These are the lowest priority areas for bighorn sheep management and include the Wyoming, Salt River, and Bighorn Mountain ranges on National Forest lands. In these areas, no effort is to be made to prioritize/emphasize bighorn sheep populations unless agreed to by the Statewide Bighorn/Domestic Sheep Interaction Working Group. Additionally, any existing bighorn sheep populations will not be protected at the expense of domestic sheep grazing.

Areas outside of these delineated areas are referred to as Non-Management Areas where bighorn sheep are permitted to occur but are not actively encouraged. Wandering bighorn sheep with known, suspected, or potential contact with domestic sheep, with likelihood of subsequent contact with established bighorn sheep populations are to be captured/removed from the wild.

### ***Domestic Sheep Allotment Negotiations***

One of the tools to minimize disease risk between domestic and wild sheep is changing management of domestic sheep grazing allotments on public land. This has involved financial compensation from non-governmental organizations to domestic sheep permittees to alter where domestic sheep are grazed. In Wyoming, these negotiations have ranged from reconfiguring allotments to shift use from higher risk allotments to lower risk allotments and conversion to other classes of livestock (usually cattle) to complete removal of domestic sheep grazing. It must be clearly understood that in following the terms of agreement in the Wyoming Plan, such negotiations will only occur with willing permittees and that

where possible, should result in no net loss of domestic sheep grazing animal-unit months (AUMs).

To date, such negotiations have taken place in not only Core-Native herds but also in Cooperative Review Areas and Non-Emphasis Areas. As a result of such efforts, there are currently no domestic sheep grazing allotments in any Core-Native herds in Wyoming.

### ***Removal of Wandering Bighorn Sheep***

Since 2006, the Wyoming Game and Fish Department has had protocol direction to address known, suspected, or likely contact between bighorn sheep with domestic sheep/goats (Appendix 1). When a wandering bighorn sheep is involved, the bighorn sheep should be live-captured and transported to the Department's Tom Thorne/Beth Williams Wildlife Research Center if capacity exists there. However, any live bighorn sheep taken to the research center shall never be released back to the wild.

If the bighorn sheep cannot be live-captured, or if it is not feasible to transport the animal(s) to the aforementioned research center, it shall be lethally removed by Department personnel. Collection of samples up to and including transportation of the entire carcass to the Wildlife Health Laboratory in Laramie is encouraged if at all possible. Since disease issues of concern in these situations do not impact edible portions, carcasses may be donated for human consumption.

### ***Designation and Removal of Feral/Stray Livestock***

Per Wyoming Game and Fish Department protocol direction, where there is known, suspected, or likely contact between bighorn sheep and a wandering or stray domestic sheep/goat, the owner of the stray domestic sheep/goat should be notified and asked to remove them in order to eliminate the threat of disease transmission. It will, however, be the owner's prerogative to determine what course of action should be taken.

In the event that the owner of the stray domestic sheep/goats cannot be determined or the

owner refuses to remove the domestic sheep/goats, Department employees shall work with the Director of the Wyoming Livestock Board and/or state veterinarian to declare the domestic sheep/goats feral as per Wyoming Statute 11-48-102 (Appendix 2). Under no circumstances is any Department employee allowed to lethally take any domestic sheep/goat without the written authorization of either the owner of the domestic sheep/goats or from the Director of the Wyoming Livestock Board or state veterinarian.

### ***Expansion of non-native mountain goats***

Mountain goats are not native to Wyoming (at least in historic times), but were translocated near the Wyoming border in both Montana and Idaho in the 1940s and the 1960s-70s, respectively (McWhirter, 2004). These translocation efforts succeeded and populations expanded into Wyoming establishing populations in the Beartooth Mountains and the Snake River Range. These populations are highly regarded by the Wyoming Game and Fish Department and the public and have provided hunting opportunities since 1969 in the Beartooths and 1999 in the Snake River Range.

Mountain goat populations continued to expand into adjacent areas that include the Absaroka and Teton Mountains which are both home to Core-Native bighorn sheep herds. This classification translates into a higher priority being placed on bighorn sheep. Along with pathogen transmission from mountain goats to bighorn sheep, a primary concern over expanding mountain goat populations is competition for forage and space on high altitude winter ranges, which are common in the Core-Native bighorn sheep herds of northwest Wyoming (Lowrey *et al.* 2017, 2018). Modeling efforts have shown the potential for dramatic increases in both the distribution and abundance of mountain goats within the mountainous habitats of Core-Native herds (DeVoe 2015, DeVoe *et al.* 2021).

As a result, management efforts have been implemented to eliminate or dramatically reduce mountain goat numbers or discourage them from becoming established in other high priority areas

for bighorn sheep. These management efforts include increased hunting pressure under existing statutory limitations that specify certain mountain goat licenses are subject to once-in-a-lifetime issuance and adoption of a new license type in 2019 that is not subject to such limitations and allows for much more liberal seasons to be implemented.

Mountain goats have expanded into both Yellowstone and Grand Teton national parks with goat numbers increasing from 24 in 1997 to 209 by 2014 in Yellowstone, and numbers in Grand Teton increasing from 1978 when they were first documented to 2019 when the 88 mountain goats observed during annual surveys exceeded the number of bighorn sheep seen.

Although competition between the introduced mountain goats and bighorn sheep is a concern in the Absarokas, disease is less of a concern as both goats and bighorn sheep in that area already share the same potentially lethal pathogens. In addition, comparatively little of the occupied sheep and mountain goat habitat of the Absaroka Mountains is within Yellowstone National Park which means fewer sheep are potentially affected by expanding goat numbers and that hunting seasons in Wyoming can exert more of an influence over goat abundance.

The situation is different in the Teton Range because the overwhelming majority of bighorn sheep and mountain goats live within Grand Teton National Park. This means that liberal hunting seasons outside of Grand Teton National Park have relatively little influence on overall goat numbers in the Tetons, and this necessitated a very active role of the National Park Service (National Park Service, 2018). Therefore, the Park Service implemented aerial lethal removals of goats which was met with considerable opposition and was subsequently curtailed. The Park Service then instituted a skilled volunteer program that used members of the public to lethally remove mountain goats from within Grand Teton National Park. Volunteers were allowed to retrieve the meat from goats they killed, but were not allowed to keep the head, horns, or hide.

It is a delicate balancing act to accurately portray that the Wyoming Game and Fish Department values mountain goats and manages for



robust populations that provide hunting and viewing opportunities in some locations but seeks to remove them or prevent their expansion in other areas where bighorn sheep are a higher priority.

## CONCLUSIONS

- Bighorn sheep distribution and abundance is reduced from pre-settlement conditions.
- From lows near the turn of the 20th century, bighorn sheep numbers in Wyoming have rebounded to approximately 6,300 currently.
- Mandatory registration of dead bighorn horns found in the field allows for documentation of mortality events that may not otherwise be detected.
- Statewide disease surveillance efforts have been instrumental in understanding the occurrence and distribution of respiratory pathogens across the state.
- More work is needed to understand the role sinus tumors may play in pathogen shedding and persistence of disease in bighorn sheep populations.
- Current research is attempting to disentangle the relationships among environmental and physiological conditions and how these factors may interact with immune function and susceptibility to disease which can influence lamb survival and population dynamics of bighorn sheep.
- The Wyoming Bighorn Sheep-Domestic Sheep Interaction Working Group has been instrumental in guiding resolution to bighorn sheep and domestic sheep pathogen transmission risks.
- Wyoming Game and Fish Department protocols describes how comingling situations between bighorn sheep and domestic sheep or goats are to be addressed.
- The Feral Livestock Statute (Wyoming Statute 11-48-102) guides how feral or stray livestock deemed to be a disease transmission risk are to be handled.
- Expanding populations of non-native mountain goats into high priority bighorn sheep populations is cause for concern with regard to

competition for forage and space as well as pathogen transmission risks.

## LITERATURE CITED

- Buechner, H. K. 1960. The bighorn sheep in the United States, its past, present, and future. *Wildlife Monographs* 4:1-174.
- Butler, C. J., W. H. Edwards, J. Jennings-Gaines, H. J. Killion, M. E. Wood, D. E. McWhirter, J. T. Paterson, K. M. Proffitt, E. S. Almborg, P. J. White, J. J. Rotella, and R. A. Garrott. 2017. Assessing respiratory pathogen communities in bighorn sheep populations: sampling realities, challenges, and improvements. *PLoS ONE* 12:e0180689.
- DeVoe, J.D., Sarah R. Dewey, Douglas E. McWhirter, and Blake Lowrey. 2021. Impacts of expanding introduced mountain goats, Chapter 7 in *Greater Yellowstone's Mountain Ungulates; A contrast in management histories and challenges*, In Press.
- DeVoe, J. D. 2015. Occupancy modeling of non-native mountain goats in the Greater Yellowstone Area. Thesis. Montana State University, Bozeman.
- Honess, R. F. and N. M. Frost. 1942. A Wyoming bighorn sheep study: Pittman-Robertson Project Wyoming 13-R. Wyoming Game and Fish Department Bulletin No. 1, Cheyenne, Wyoming.
- Lowrey, B., K. M. Proffitt, D. E. McWhirter, P. J. White, A. B. Courtemanch, S. R. Dewey, H. M. Miyasaki, K. L. Monteith, J. S. Mao, J. L. Grigg, C. J. Butler, E. S. Lula, and R. A. Garrott. 2019. Characterizing population and individual migration patterns among native and restored bighorn sheep (*Ovis canadensis*). *Ecology and Evolution* 9:8829-8839.
- Lowrey, B., R. A. Garrott, D. E. McWhirter, P. J. White, N. J. DeCesare, and S. T. Stewart. 2018. Niche similarities among introduced and native mountain ungulates. *Ecological Applications* 28:1131-1142.
- Lowrey, B., R. A. Garrott, H. M. Miyasaki, G. Fralick, and S. R. Dewey. 2017. Seasonal resource selection by introduced mountain goats in the southwest Greater Yellowstone Area. *Ecosphere* 8:1-20.
- McWhirter, D. 2004. Mountain goat status and management in Wyoming. *Biennial Symposium Northern Wild Sheep and Goat Council* 14:101-113.
- National Park Service. 2018. Mountain goat management plan environmental assessment. U.S. Department of the Interior, Grand Teton National Park, Moose, Wyoming. <http://parkplanning.nps.gov/mountaingoat> [accessed March 1, 2018]
- Nowlin, D.C. 1904. Annual report of the State Game Warden of Wyoming. Cheyenne, Wyoming.
- Nowlin, D.C. 1910. Annual report of the State Game Warden of Wyoming. Cheyenne, Wyoming.
- Seton, E. T. 1929. *Lives of game animals*. Doubleday Page and Company, New York, New York.

Wild Sheep Working Group. 2015. Records of wild sheep translocations – United States and Canada, 1922-present. Western Association of Fish and Wildlife Agencies, Boise, Idaho.

Wyoming State-wide Bighorn Sheep-Domestic Sheep Interaction Working Group. 2004. Final report and

recommendations. Wyoming Game and Fish Department, Cheyenne, Wyoming.

Wyoming Statute §11-48-101 and 102. Feral Livestock, 2009.

Wyoming Statute §11-19-604. Wyoming bighorn/domestic sheep plan, 2015.

Wyoming Statute §23-3-117, Bighorn sheep; registration of horns, penalties. 1977.

## **APPENDIX 1**

April 15, 2013

### MEMORANDUM

TO: Wildlife Division Employees  
FROM: Brian Nesvik, Chief, Wildlife Division  
COPY TO: File  
SUBJECT: PROTOCOL FOR HANDLING THE COMMINGLING OF  
BIGHORN SHEEP WITH DOMESTIC SHEEP/GOATS

This memo provides additional information and direction to the April 5, 2006 memo regarding the protocol for handling the commingling of bighorn sheep with domestic sheep/goats.

Due to the threat of disease transmission and subsequent bighorn sheep die-offs when bighorn sheep commingle with domestic sheep/goats, the following protocol shall be followed.

#### **Wandering Bighorn Sheep:**

Where there is known, suspected, or likely contact between bighorn sheep with domestic sheep/goats:

- If possible, the bighorn sheep should be live-captured and transported to the Department's Tom Thorne/Beth Williams Wildlife Research Center at Sybille (Sybille). Any live bighorn sheep taken to Sybille shall not be released back to the wild.
- If the bighorn sheep cannot be live-captured, that bighorn sheep shall be lethally removed (per authority of Chapter 56) and, if possible, transported (either whole or samples) to Sybille or to the WGFD wildlife disease lab in Laramie.

#### **Stray Domestic Sheep/Goat:**

Where there is known, suspected, or likely contact by a stray domestic sheep/goat with bighorn sheep:

- The owner of the stray domestic sheep/goat should be notified and asked to remove them in order to eliminate the threat of disease transmission; however, it will be the owner's prerogative to determine what course of action should be taken.
- In the event that the owner of the stray domestic sheep/goats cannot be determined or the owner refuses to remove the domestic sheep/goats, Department employees shall work with the Director of the Wyoming Livestock Board and/or state veterinarian to declare the domestic sheep/goats feral as per Wyoming Statutes 11-48-101 and 11-48-102. Under no circumstances shall any Department employee lethally take any domestic sheep/goat without the written authorization of either the owner of the domestic sheep/goats or from the Director of the Wyoming Livestock Board or state veterinarian.

#### **Reporting:**

All documented commingling and any actions taken must be reported in a timely manner to the employee's immediate supervisor, Wildlife Division Administration as well as the Bighorn Sheep Working Group Chairman.



**APPENDIX 2**

**FERAL LIVESTOCK**

Original Senate File No. 8

**AN ACT relating to feral livestock; providing definitions; providing for the identification and destruction of feral livestock; providing for reimbursement of costs of destruction and removal; and providing for an effective date.**

*Be It Enacted by the Legislature of the State of Wyoming:*

**Section 1.** W.S. 11-48-101 and 11-48-102 are created to read:

**CHAPTER 48  
FERAL LIVESTOCK**

**11-48-101. Definitions.**

- (a) As used in this chapter:
- (i) “Board” means the Wyoming livestock board;
  - (ii) “Director” means the director of the Wyoming livestock board;
  - (iii) “Feral” means a domestic animal that is not under the control of nor cared for by a person and which has returned to a wild or semi-wild state;
  - (iv) “Livestock” means as defined in W.S. 11-6-302(a)(vi).

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**11-48-102. Destruction of feral livestock.**

- (a) Before any livestock can be declared feral, a reasonable attempt shall be made by the director or the state veterinarian to locate and identify the owner of the livestock and to notify the owner to take possession of the livestock.
- (b) If the state veterinarian or the director are unable to identify and notify the owner of the livestock or the owner refused to take possession for the livestock within five (5) days after receiving notice, the livestock may be declared to be feral livestock.
- (c) If the director or the state veterinarian determines that any feral livestock are damaging private or public property, including grass, cultivated crops or stored crops, or determines the feral livestock is on private or public property where the feral livestock are not authorized to be and that capturing the feral livestock is not feasible or is cost prohibitive, the director or the state veterinarian may order the destruction of the feral livestock.
- (d) If the state veterinarian determines or suspects any feral livestock are likely to be infected with or able to spread any infectious or contagious disease, the state veterinarian may order the destruction of the feral livestock.
- (e) There shall be no right for any future indemnity or payment to the owner for the destruction of any feral livestock destroyed in accordance with this section. Should the owner of any feral livestock destroyed in accordance with this section be subsequently identified, the board may seek reimbursement from the owner for all costs associated with the destruction and removal of the feral livestock.
- (f) The Wyoming livestock board shall promulgate rules necessary for the administration of this section.

**Section 2.** This act is effective immediately upon completion of all acts necessary for a bill to become law as provided by Article 4, Section 8 of the Wyoming Constitution.

Approved March 2, 2009.