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HB 312

ELK MANAGEMENT GUIDELINES IN AREAS WITH BRUCELLOSIS WORKING GROUP

PROPOSED FINAL RECOMMENDATIONS

JANUARY 10, 2013

INTRODUCTION

Brucellosis results from infection with the *Brucella abortus* bacteria and is known to exist in wild bison and elk and occasionally domestic livestock within the Greater Yellowstone Area (GYA). Brucellosis was first detected in wildlife in the early 1900's and likely introduced to wildlife by contact with infected livestock. Eradication efforts have largely eliminated brucellosis in livestock throughout the United States leaving wildlife in the GYA as a remaining and significant brucellosis reservoir affecting risk of infection to livestock in Montana. Recent livestock cases in the GYA have been investigated with testing of adjacent livestock herds within one mile of the affected herd, trace in herds (from which animals were brought in) and trace out herds (to which animals were sent or sold). This epidemiological review of cattle cases conducted by the Montana Department of Livestock, genetic relatedness of *Brucella abortus* isolates from cattle and wildlife, and the lack of wild bison in the vicinity of cattle cases supports elk as the probable source of transmission to livestock. In one case, DNA fingerprinting of *Brucella* isolated from positive (livestock) bison actually exactly matched *Brucella* previously isolated from a Montana elk, hunter harvested in 2009.

Risk of brucellosis infection is a concern and financial burden to livestock producers. The disease, which is transmitted primarily through contact with infected birth or abortion material, causes abortions in cattle. In 2007 Montana had its first case of brucellosis in cattle since gaining its brucellosis-free status in 1985. Montana lost its brucellosis-free status in 2008 when a second cattle case was detected and regained its class-free status in 2009. Since 2007 there have been five cases of brucellosis in domestic livestock in Montana, including three in cattle and two in domestic bison. Idaho and Wyoming have also experienced livestock brucellosis and an apparent increase in seropositive elk in the past five years.

Changes in USDA-APHIS rules regarding brucellosis in livestock reduced the likelihood of entire states losing brucellosis-free status because of isolated livestock cases, but put increased focus on areas where brucellosis is known to exist in wildlife. As a result, the Montana Board of Livestock established a designated surveillance area (DSA) in 2010, which requires increased cattle testing, vaccination, individual animal identification, and herd management plans by producers within the DSA. The DSA boundary has been expanded twice by the Montana Board of Livestock based upon new information about the distribution of elk testing positive for exposure to brucellosis.

Within Montana, surveillance efforts using blood tests to determine exposure rates (seroprevalence) to *B. abortus* in elk began in the late 1980's. Seroprevalence estimates for

GYA elk from the late 1980's and early 1990's were below 2%. Surveillance conducted within the last 10-15 years revealed what appeared to be increasing seroprevalence in some elk populations (Anderson and Williams 2008, Anderson et. al. 2009, Anderson et. al. 2010). Recognizing that surveillance methodology has varied over time and so may confound comparisons, recent estimates of seroprevalence have been as high as 12-13%. Recent testing also detected brucellosis in elk populations where it had not previously been found. It is unclear if this is due to changes in the geographical distribution of the disease or increased sampling efforts in these areas. To date, brucellosis has only been detected in elk populations of southwestern Montana, and the increase in brucellosis seroprevalence in some areas has not yet been shown to measurably affect or impede elk population growth rates in the region.

In response to increased seroprevalence in elk, recent livestock infections, establishment of the DSA and abundant debate between and within livestock and wildlife constituencies, in fall 2011 the FWP Commission endorsed the concept of a citizen working group to explore elk management guidelines in areas with Brucellosis. A call for interest listing desired qualifications and diversity was made with over 40 applicants ultimately responding. Twelve individuals were selected with representation from livestock and wildlife interests in and out of the DSA and GYA. The group met monthly starting in January 2012. All meetings were held in Bozeman and were open to the public to include opportunities for public comment.

WORKING GROUP CHARTER

The specific charge to the working group from the Commission was: *"Collaboratively identify a problem statement, fundamental objectives and potential management options relative to effective management of elk in areas where brucellosis has been identified and where there is concern about brucellosis transmission between livestock and elk."*

The working group used a facilitated structured decision making process (SDM) to arrive at the required components enumerated in the charter.

ISSUE (PROBLEM) STATEMENT

In response to the charter, the following issue (problem) statement was developed by the working group.

Brucellosis is a contagious bacterial disease that affects livestock, elk and bison in the GYA. It is a federally and internationally regulated disease. In recent years, brucellosis has been found in livestock herds in southcentral and southwest Montana, and evidence indicates elk are the source.

Brucellosis itself, as well as the requirements of brucellosis disease regulations, threaten the viability of the livestock industry in this area and landowner tolerance of elk because of the

increased direct and indirect costs associated with repeated testing, possible quarantine, and changes in land use resulting from disease regulation. In addition, while a large portion of Montana's economy derives from major exports of livestock, brucellosis results in limitations on marketing options (stigma associated with cattle produced in the DSA), as well as the ability to transport/export into and out of the DSA and the state of Montana. Because current livestock vaccines only provide approximately 65-70% effectiveness against abortion and provide little protection against infection, livestock vaccination, by itself, does not currently solve the problem we address. Given the wild reservoir, additional livestock brucellosis vaccine research that not only explores additional protection against abortion but also provides protection against infection, is desirable. In the interim, elk management tools that may reduce the risk of transmission and infection between elk and livestock and among elk would be helpful as one of several possible brucellosis risk transmission factors. This is especially true because the prevalence of brucellosis in the elk population seems to be increasing.

Efficacy of elk management tools developed by the FWP Commission will be subject to considerable uncertainty due to 1) coordinating actions or lack thereof by the multiple agencies, jurisdictions, and various interest groups involved in management of brucellosis that are outside the jurisdiction of the FWP Commission, 2) incomplete understanding of the distribution of Brucella in elk populations, and 3) incomplete understanding of how elk movements, behavior, and seroprevalence contribute to possible transmission of brucellosis.

Maintaining the viability of the livestock industry and healthy elk populations are vital to Montana. Livestock owners' tolerance of elk populations in this area is important; elk populations benefit from a viable livestock industry because significant elk habitat and hunter harvest opportunity occur on private lands. Elk distribution management that may help reduce the prevalence of brucellosis in elk could not only reduce the risk of transmissions to cattle, but could also help restore traditional movements and distributions of elk. Eradication of brucellosis in elk is ultimately desirable, but it is not currently feasible, and current methods to achieve this goal, such as test-and-slaughter, are unacceptable. In the mean time, management tools need to be endorsed by the FWP Commission that will reduce the risk of transmission between elk and livestock, in a manner that considers the interests of livestock owners, landowners, wildlife enthusiasts, recreationalists and hunting groups.

FUNDAMENTAL OBJECTIVES

In response to the charter, the following fundamental objectives were identified by the working group. They were not prioritized.

Fundamental Objective #1: *Minimize transmission from elk to livestock.*

General description/rationale: Reduce the elk to livestock transmission potential by efforts that include encouraging development of a much more effective livestock vaccine and addressing problematic concentrations of wildlife. Efforts to adjust elk densities or distribution represent potential not only to reduce transmission risk from elk to cattle but could potentially reduce elk to elk transmission risk which is itself a component of risk to livestock infection. These efforts could also reduce transmission potential for other diseases.

Fundamental Objective #2: *Maximize acceptability of elk management tools and populations in the DSA for:*

Sportspersons (measure with satisfaction survey),

Wildlife enthusiasts (measure with satisfaction survey),

Landowners (measure with satisfaction survey), and

Livestock producers (measure with satisfaction survey).

General description/rationale: Recognizing the many perspectives involved and also the strength of broad collaboration, the working group identified the need and value to pursue diverse representation within local working groups and to maintain or enhance satisfaction for those constituents with management.

Fundamental Objective #3: *Maximize cost effectiveness.*

General description/rationale: Given the geographic scale, multiple jurisdictions, management logistics and scientific/management uncertainty, the working group recognized it will be important to thoughtfully focus efforts and to routinely assess those efforts and management performance relative to stated objectives.

PRPOPOSED ACTION ALTERNATIVE – ADDITIONAL MANAGEMENT OF ELK DISTRIBUTION

Potential Management Actions: This list does not contain all potential actions. Other actions may be identified consistent with the intent to adjust elk distribution. Also listed are associations with other existing processes. Given the potential transmission window of greatest risk is from mid-January to mid-June, many new management activities would revolve around that time window and would not occur on a year round basis.

Hunting

- *Develop adaptive hunting regulations. Any proposal would be part of existing biennial season setting Commission process.*

- *Develop late season hunts that could extend beyond 15 Feb. While not game damage by definition, these brucellosis-related actions would be initiated in a manner comparable to existing management season and game damage hunt processes (authorized by FWP Director or Regional Supervisor). Focusing on re-distribution rather than overall harvest, after Feb 15 hunts would incorporate only small scale harvests of typically less than ten animals.*
- *FWP use hunt coordinators for management hunts.*
- *Use hunter harvest to reduce winter herd density/size. This will be especially important for elk populations within the DSA that are currently above size Objectives in the current Elk Management Plan. Density may be adjusted by using hunter presence/harvest to disperse wintering animals over a larger area (if habitat is available).*
- *Use hunter presence and harvest to influence elk distribution. This could be applied with variations of the general hunting seasons or late hunts.*
- *Potential elk plan change of numerical or distribution objectives or meet current management objectives. Any adjustment to Elk Plan objectives would require existing Commission process. Use season structure to address problematic concentrations of wildlife. Season structure changes developed during biennial season setting may seek to address these concentrations.*

Habitat

- *Perform/suggest landscape alterations that will promote spatial and temporal separation of elk and livestock during critical brucellosis risk periods. This would likely require collaboration across multiple public and private ownerships.*
- *Small, scattered manipulation (for example, high intensity/short duration livestock grazing of underused areas, plantings, etc.) of vegetation on WMAs and public lands to attract/retain elk. Habitat manipulations on WMAs would require an EA and additional Commission process.*
- *More rest/rotation grazing for influencing the distribution of elk. Grazing leases on WMAs would require an EA and additional Commission process.*
- *Water development for influencing the distribution of elk. Water developments on WMAs would require an EA and additional Commission process.*

Spatial and Temporal Separation (other than direct habitat management/manipulation listed above)

- *In open (primarily non-timbered) elk winter range, reduce wolf or wolf pack numbers to potentially minimize any detrimental impacts by wolves to elk distribution. Wolf harvest by hunters would be addressed during the wolf hunting and trapping seasons.*
- *More intensive hazing of elk in high risk areas. This would require collaboration of neighbors.*
- *Public funding for fencing of cattle feeding areas.*

- *Decrease problematic concentrations of wildlife. Education would necessarily be a critical component of this effort.*
- *Elk-proof fencing for high-risk areas by locale.*
- *Purchase/lease more WMAs for purpose of spatial separation. Any purchase or lease would require additional Commission process with public review.*
- *Endorse development of collaborative landowner incentives to use hunter access to address problematic concentrations of wildlife. Incentives would most likely be successful as/if they are explored, identified and pursued by a coalition of diverse constituencies.*
- *Within "local working groups," in addition to elk distribution tools, explore development of livestock distribution management plans during the risk period with affected cooperating livestock operators. These livestock distribution plans would necessarily be cost-effective to the operator and incorporate FWP, landowner, and local knowledge of both elk and livestock spatial and temporal distribution.*

Research/education

- *Increase monitoring of seropositive elk and their movements.*
- *Educate hunters and other interested parties on the challenges and relevance of brucellosis management.*
- *Educate hunters and landowners on brucellosis exposure risks from contact with harvested elk/gut piles.*
- *Encourage landowner acceptance and involvement in expanding ongoing elk distribution research to DSA and contiguous areas.*
- *Educate landowners on risks of problematic concentrations of wildlife (neighbor, affected party, FWP/DOL contacts).*
- *Encourage removal of* B. abortus *from select agent list so vaccine can be more easily researched.*
- *Maximize coordination among all stakeholders, agencies and jurisdictions dealing with brucellosis reduction in and around the Greater Yellowstone area.*

LOCAL WORKING GROUPS

This working group also recommends the concept of local working groups to assist FWP in identifying, implementing and evaluating specific management actions. These working groups were not specifically defined and may be new or existing groups, formal or informal, long lasting or temporary. At a minimum, they should reasonably represent the various constituencies that would typically include sporting and other wildlife interests, livestock producers, landowners that do not primarily raise livestock and any associated resource or land management agencies.

To initiate and ensure overall awareness and understanding of any Commission adoption, the working group identified the value of a single common presentation coordinated by FWP and delivered first to those local working groups already established below the scale of FWP

administrative regions. Within any one area, these could potentially be watershed groups, sporting groups or livestock industry groups. All would be open meetings. While these local working groups would ultimately decide individually how or if to engage these recommendations, potential responses could range from "wait and see" to a more proactive approach to landscape management by comprehensively identifying issues in their area and potential management responses. The whole group or subcommittees may be involved depending upon the scale of discussion (the whole group may explore a new hunting regulation for the entire hunting district while a smaller discussion may reasonably address the definition of a smaller hazing effort). Depending upon the group, some facilitation capacity may already be in place. For others, FWP or another entity may provide that role. Despite logistics, the face-to-face nature of local discussions was specifically recognized as one of the critical components necessary to enhance success.

OTHER DISCUSSION

In hearing and reviewing public comments, the working group recognized the need to clarify its presentation to the public and FWP Commission. Many of those clarifications are included here.

Public comments also illuminated the need to better "connect" these recommendations with potential future management actions. In addition to the context here, FWP will work with staff and the public to further clarify the pathways, connections and relationships between any Commission final endorsement of these products, other existing processes and literal management implementation.

Another strong element of public comment was a general concern that wildlife would unduly suffer for a livestock disease if not for the livestock industry itself. This included criticism of public lands grazing by domestic livestock. In truth, the livestock industry has already applied or has been required to apply additional management efforts to minimize the risk of brucellosis transmission. This includes additional testing and vaccination. A more effective vaccine is not now available and its potential development is problematic at best. Most if not all large-scale public grazing allotments already have pasture entry dates that are after the primary brucellosis transmission risk period. And many of the potential management actions identified here seek more use by wildlife of public habitats while not dismissing the reality that many winter ranges do and will continue to overlap private lands. In this regard, many of the same potential management actions represent value for elk management even in the absence of brucellosis.

FOLLOW THROUGH AND MONITORING

To enhance the likelihood of successful implementation and management effectiveness, the working group advocates they be retained as a group (same membership) for at least three years. Their annual meeting frequency would include not more than one or two meetings focused on reviewing progress and effectiveness relative to these recommendations.

FREQUENTLY ASKED QUESTIONS: ELK MANAGEMENT GUIDELINES IN AREAS WITH BRUCELLOSIS

Q. Do these recommendations include test and slaughter of elk?
A. No. While that option was considered by the working group, it is not part of the recommendations. The working group predicted that such action would not meet fundamental objectives, so the recommendation focuses instead on tools to manage elk distribution.

Q. Do these recommendations include fencing out elk?
A. Yes, but only at small locales such as feed lines or stackyards. They do not recommend "landscape level" fencing.

Q. Do these recommendations seek to eliminate brucellosis?
A. The working group did recognize the elimination of brucellosis as a desired outcome regarding brucellosis in general. The group also clearly recognized that eliminating brucellosis was outside of the sole authority of the FWP Commission, and therefore identified that eliminating brucellosis should not be a fundamental objective for consideration when setting elk management guidelines in areas with brucellosis. Given the multiple jurisdictions and decision authorities involved (for example, two national parks, and the livestock and wildlife agencies in three states) and the fact that no clear mechanism to eliminate brucellosis in wildlife populations exists, elimination of brucellosis is not a specific adoption item itself.

Q. Do these recommendations include killing elk?
A. The recommendations include potential adjustments to hunting seasons, additional harvest efforts after Feb. 15 and possible adjustments to elk numbers in specific areas. These efforts, however, would not be applied solely to kill or reduce elk numbers but rather to reduce the risk of comingling with cattle in areas where brucellosis exists in elk.

Q. Do these recommendations assign elk management authority to local working groups?
A. No. The FWP Commission will continue to hold all management authority. Specific actions identified by local working groups would require FWP Commission review and approval, including general hunting season adjustments and changes to elk plan objectives.
Q. Could some ideas by working groups be put in place without additional FWP Commission approval?
A. Yes. For example, a call for a small harvest of elk in a specifically defined area after Feb. 15 to instigate an adjustment to elk distribution would likely be handled in a manner comparable to a game damage hunt—with approval by the FWP regional supervisor and the FWP commissioner in that area, rather than needing approval by a full commission vote.

Q. Who would local working groups include?
A. FWP would look to assemble diverse perspectives to include landowners and hunters, as well as other stakeholders with an interest in elk and brucellosis management.

LITERATURE CITED

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