Elk Feedgrounds:
A Challenge We Can Take On
Phase I Collaborative Process

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Introduction

Elk have been utilizing the feedgrounds of northwest Wyoming since they were established in the early 1900s. Feedgrounds were initially created to prevent large die-offs of elk in harsh winter conditions. The purpose for feeding has since grown to keep elk out of ranchers' hay and prevent elk from transmitting brucellosis to cattle. Thousands of elk are fed each year on the 22 Game and Fish Department operated feedgrounds in Teton, Sublette, and Lincoln counties, as well as the U.S. Fish and Wildlife Service National Elk Refuge. As elk have gathered on feedgrounds for over a century, high concentrations of elk create concern around the transmission of wildlife disease and its impact on herd health over the long-term.

The supplemental feeding of elk on feedgrounds is a highly complicated and often contentious issue with biological, social, economic, and political considerations along with concern around wildlife diseases. From agriculture operators to sportspeople, wildlife watchers to wildlife managers, area residents to tourists, many stand to be impacted by this issue. A multi-phased collaborative process is being undertaken to engage the public, share information, and gather input to develop a long-term management plan to move this discussion and associated decisions forward.

This report describes Phase I of this collaborative process. Phase I was designed to share information on feedground history, operations, and related disease concerns. Phase I was also designed to gather feedback that would inform how these issues are addressed in Phase II. The following pages detail the Phase I Steering Team's effort to deliver information, receive comments, and design preliminary recommendations for future phases of this collaborative process. Additional details on this process can be found at https://wgfd.wyo.gov/Get-Involved/elk-feedgrounds.

SECTION 1: Phase I Background and Feedground Steering Team

Phase I Background

During the Wyoming Game and Fish Department's (Department) 2019-2020 chronic wasting disease (CWD) management planning and development process, elk feedgrounds were identified as a complex issue to be addressed separately from the CWD planning process. As outlined in the Department's July 2020 approved Wyoming CWD Management Plan, the public CWD Working Group recommended the Department initiate a separate, comprehensive effort to address elk feedgrounds (CWD Working Group Final Report, Recommendation 1.4). While CWD is a significant factor in elk feedgrounds management, the ultimate goal of the elk feedgrounds collaborative process is to consider all biological, social, economic, and political issues, along with wildlife diseases, to achieve a durable, publicly supported long-term feedgrounds management plan for Department operated elk feedgrounds.

Phase I of the elk feedgrounds collaborative process was launched in spring 2020 with the development of a Department feedground steering team (Steering Team). As outlined in a May 2020 memo from Department Director Brian Nesvik and Wildlife Division Chief Rick King, the goals of Phase I are to:

1. share information related to feedground history, objectives of the program, and the complexities that have evolved related to continuing feeding operations, and
2. secure public and stakeholder feedback that will lead to the development of future strategy and policy for the State of Wyoming feedground program, and set the conditions for Phase II.

The Phase I target completion date was mid-January 2021.

Steering Team Members and Goals

The Phase I Steering Team was led by Scott Edberg, Wildlife Division Deputy Chief, and included the following Department personnel:

- Dr. Sam Allen, Wildlife Veterinarian
- Hank Edwards, Wildlife Health Lab Supervisor
- Mark Gocke, Jackson-Pinedale Public Information Specialist
- Brad Hovinga, Jackson Region Wildlife Supervisor
- Jordan Kraft, South Pinedale Game Warden
- John Lund, Pinedale Region Wildlife Supervisor
- Janet Milek, Casper Public Information Specialist
- Brandon Scurlock, Pinedale Region Wildlife Management Coordinator
- Ben Wise, Jackson Region Wildlife Disease Specialist

Gary Hornberger, Feedgrounds Supervisor, and Dave Hyde, Feedgrounds Manager, were also contributors to the Steering Team.

Federal partners involved in Phase I include:

- Frank Durbian and Eric Cole, U.S. Fish and Wildlife Service - National Elk Refuge
- Douglas (Gus) Smith, National Park Service - Grand Teton National Park
- Mark Thonhoff, Bureau of Land Management - Pinedale Resource District
- Jim Wilder, United States Forest Service - Bridger Teton National Forest

Tara Kuipers of Tara Kuipers Consulting was hired as a process facilitator to assist with Phase I. The Steering Team met at least monthly from June through December 2020. Additional sub-groups met more frequently for focused work on presentation content, technology considerations, meeting publicity and outreach, and related topics. Throughout Phase I, the Steering Team remained focused on the Phase I goals described above, striving to highlight the complexity of feedgrounds, the continuing public education needs, and how to execute future phases.

SECTION 2: Phase I Planning

Public Meeting Planning

Initially, six public meetings were scheduled at locations across Wyoming: November 30, 2020, in Jackson; December 1, 2020, in Afton; December 2, 2020, in Pinedale; December 3, 2020, in Green River; December 14, 2020, in Casper; and December 15, 2020, in Cheyenne. The Steering Team remained committed to holding in-person Phase I meetings and planned accordingly throughout early fall 2020.

In October 2020, in light of COVID 19-related safety considerations and public health advisories/orders, the committee transitioned all Phase I public meetings to an online format. The revised schedule included the following online public meetings:

- Tuesday, December 1, 2020, at 5:00 pm
- Wednesday, December 2, 2020, at 1:00 pm
- Wednesday, December 2, 2020, at 6:00 pm
- Thursday, December 3, 2020, at 4:00 pm

While online public meetings allowed Phase I to move forward in a timely manner and meet its goals, there may have been different information and communications exchanged between attendees and Department personnel if an in-person format were possible. The Steering Team recognizes the virtual format's challenges in Phase I and will plan Phase II with those dynamics in mind.

Technology Considerations

Although the meetings transitioned to a virtual format, opportunities to share information, address clarifying questions, and receive comments were maintained. This included:

- Holding public meetings via Zoom Webinar® with panelists sharing their presentations and addressing questions during each of the four public meetings.
- Offering Question and Answer (Q & A) opportunities with presenters both verbally (as attendees could unmute and ask questions) and in writing (as attendees could use the chat function to type questions to be addressed either in the meeting or in a follow-up correspondence).
- Recording all meetings and providing a link to one recorded presentation (December 1, 2020 session) available on the Department's feedground website the week following Phase I meetings.
- Gathering public comment via SurveyMonkey®, a web-based survey to collect Phase I participant input, from December 1, 2020, through January 8, 2021. General written comments were also received by mail at the Department's Casper office.

- Creating a website to share information on the elk feedgrounds collaborative process: https://wgfd.wyo.gov/Get-Involved/elk-feedgrounds.

Phase I Communications and Outreach

The Department engaged in various public outreach efforts to build awareness of and invite involvement in Phase I. This included the creation of a dedicated elk feedgrounds website and email address; seven Department press releases (one jointly released with Grand Teton National Park); two direct emails to interested parties; two features in the monthly Hunting Update; seven social media posts; several follow-up media contacts to correct information; and, a number of mentions and links in regional newsletters and television and radio programs. A detailed outline of Phase I Communications and Outreach is found in Appendix A.

SECTION 3: Phase I Meetings

Internal Meeting

A Phase I webinar was conducted virtually to Department personnel on November 10, 2020. It was designed to inform Department personnel of the upcoming collaborative process and gather feedback on presentation content ahead of the public meetings. This internal meeting followed the same format and agenda as the public meetings. This webinar was recorded for future viewing by employees who could not attend on November 10.

Public Meeting Registration Process and Attendance

In press releases and outreach information shared about Phase I, a link was provided to register for one of the four meetings. Immediately upon registering with their name, email address, city, and state, attendees received a confirmation email containing a link to join the meeting at their respective date and time, a description of the meeting format and length, instructions on how to use the webinar platform, and a contact email for questions. The same confirmation email was re-sent to registered attendees approximately 12 hours prior to the beginning of each respective meeting.

Space was limited to 90 participants per meeting. This allowed panelists and the facilitator's attendance at each meeting, and ensured a group size for attendee questions and comments to be appropriately managed. Individuals were encouraged to sign up for an alternative session or be added to a waitlist If a preferred session was filled. Due to continual registration changes from participant sign-ups and cancellations, all attendees who expressed a desire to attend were accommodated. Several attendees who inquired about registering for one of the four meetings opted to view the recording upon learning that was an option.

Figure 1: Summary of Public Meeting Registration and Attendance

		Registered	Attended
Session 1:	12/1/20, 5:00 PM	90	34
Session 2:	12/2/20, 1:00 PM	90	47
Session 3:	12/2/20, 6:00 PM	90	24
Session 4:	12/3/20, 4:00 PM	90	32
COMBINED:		**360**	**137**

Of the 137 attendees, 112 (81.75%) indicated they were Wyoming residents.

Meeting Agenda and Presentations

Each Phase I meeting lasted approximately three hours and followed the same agenda as the example in Figure 2 below.

Figure 2: Public Meeting Agenda

5:00 pm	Welcome and Meeting Purpose: Scott Edberg
5:05 pm	Overview of Technology and Agenda: Tara Kuipers
5:15 pm	Panelist Presentations and Q&A Sessions: • John Lund: Feedgrounds History and Operations, then Q&A • Hank Edwards: Disease Overview • Brandon Scurlock: Brucellosis Management, then Q&A
6:45 pm	Federal Partner Presentations and Q&A Session: • Frank Durbian and Eric Cole, US Fish and Wildlife Service • Jim Wilder, US Forest Service • Mark Thonoff, Bureau of Land Management • Gus Smith, National Park Service • Q&A on Federal Partner Presentations
7:15 pm	Public Comment: • Attendees were asked to share comments via an online survey link • Option for verbal and written comments in the webinar
8:00 pm	Next Steps and Adjourn: Scott Edberg

Other Steering Team members were available to provide additional information to participants and worked behind the scenes to ensure the meetings were managed well. A copy of each Phase I presentation is found in Appendix B.

Phase I and Question and Answer Session Recordings

The Phase I presentations were recorded and made available on the feedground website on Monday, December 7, 2020. At the time of preparing this report, the Phase I recorded presentations video has been viewed 469 times. The average viewing time is 26 minutes, and 65 viewers (14%) completed the recording in its entirety.

A supplemental Q&A session was held on January 5, 2021, at 4:00 pm to provide additional public engagement for those unable to attend a live meeting but watched the recorded public meeting. After viewing the recording, this session offered members of the public an opportunity to ask clarifying questions of the Department and federal agency panelists. The session was limited to 90 attendees. Twenty-seven individuals registered for the session, and 23 individuals attended. The session lasted until all attendee questions were addressed, which was approximately 90 minutes. The Q&A Session was recorded, and the recording was included on the feedground website on January 6, 2021. At the time of preparing this report, the Q&A Session video has been

viewed 15 times. The average viewing time is 24 minutes, and three viewers (21%) completed the recording in its entirety.

SECTION 4: Phase I Attendee Questions

A goal of Phase I was to address clarifying questions on each presentation and on feedgrounds overall. Questions were received from attendees verbally and in writing during the live public meetings. They were addressed by panelists in the meeting or, if needed, in follow-up correspondence. Attendee questions ranged widely. *A list of several questions received during Phase I meetings is included below. A complete compilation of all attendee questions is available upon request.*

Historical and Operational Questions

- *What are the historical or earliest recorded elk populations in the area?*
- *Where would elk have wintered historically?*
- *How do surrounding states deal with these issues, or are feedgrounds unique to Wyoming?*
- *Does the cost of feedgrounds provided include the cost of damage paid by the Department?*
- *Is there good connectivity between winter feedgrounds to summer range? Do the elk linger near feedgrounds during the summer?*

Disease Questions

- *Is the issue of elk comingling with cattle only important during elk calving?*
- *Should hunters be concerned with contracting disease from harvested elk?*
- *How long can an elk potentially live if infected with CWD?*
- *Do you feel there will be more death loss from disease or from starvation from discontinued feeding programs?*

Federal Partner Questions

- *Are federal feeding programs supported via state license sales or federal appropriations?*
- *Does the National Park Service (NPS) test for wildlife disease in the park?*
- *Are there additional areas of the Forest and BLM that could be considered for winter range protections to expand wintering habitat for elk and reduce the need for supplemental feeding?*
- *Does the National Elk Refuge (NER) employ low-density feeding? Do they have enough room for low-density feeding?*

Overall Questions

- *How have panelists considered climate change on disease transmission?*
- *How much would elk populations decline if winter feeding was discontinued?*
- *How do wolves influence elk use of native winter ranges?*
- *What species of wooded plants, trees, and other vegetation are we most concerned about in relation to the feedgrounds, with an increase in native land use?*

SECTION 5: Phase I Public Comment

The Steering Team developed the following questions for Phase I participants:

1. Did this presentation provide you with new information?
2. What additional information pertaining to elk feedgrounds do you need?
3. What role do you believe elk feedgrounds play in Wyoming today?
4. What role do you believe elk feedgrounds play in Wyoming into the future?
5. What ideas or suggestions do you have as we begin to plan Phase II?
6. Please rank the following topics according to your priorities:
    a. Wildlife Disease (scale of 1: low to 5: high)
    b. Impacts on Agriculture (scale of 1: low to 5: high)
    c. Economic Impacts (scale of 1: low to 5: high)

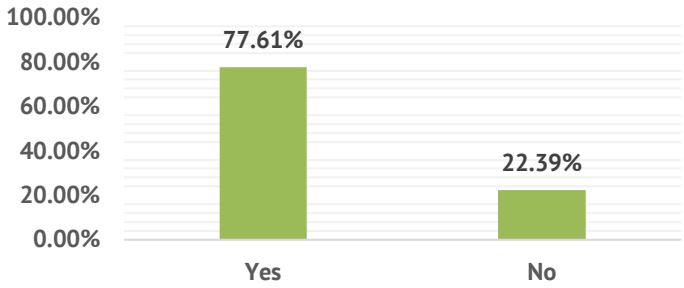
Phase I public comments were primarily collected via SurveyMonkey® to address the questions above. The survey link was provided to attendees at each meeting, in an email following each meeting, and was available on the feedground website. General written comments were also received by sending them to the Department's Casper region office.

Comments via Online Survey

From December 1, 2020, through January 10, 2021, 171 individual respondents accessed and initiated comments on the web-based form, and approximately 130 respondents addressed all (or nearly all) questions. Of the 171 respondents, 119 (70%) indicated they were Wyoming residents, and 113 (66%) indicated they participated in a Phase I meeting or watched the recording. *A summary of responses and primary themes from public comments received are included below. A complete compilation of all attendee responses is available upon request.*

Q2: Which group do you most strongly associate with? (169 responded)	
Conservation NGO	**8.3%**
Federal Agency	**1.2%**
General Public	**22.5%**
Landowner	**3%**
Landowner-Agriculture	**3%**
Local Government	**0.6%**
Outdoor Media	**1.2%**
Outfitter/Guide	**12.5%**
Scientist	**3%**
Sportsperson	**44%**
State Agency	**0.6%**

Q3: Did this presentation provide you with new information on elk feedgrounds operation and disease issues? (134 responded)



Q4: After listening to this presentation, is there additional information pertaining to elk feedgrounds that you need to make an informed contribution in Phase II? (119 responded)

- *Changes to winter elk habitat over time; specifically, municipal and agriculture development*
- *Economic impacts of feedgrounds (their existence, closure, agriculture damages, etc.)*
- *The strategies other Western states have done (or are doing) on winter elk habitat and management*
- *Candid information on the political pressures related to this contentious issue*
- *Impacts of feedgrounds (positive or negative) on other species (mule deer, predators, bison)*
- *Predictive modeling related to disease and elk populations and management trade-offs (e.g., if we do X, we predict the outcome will be Y)*
- *How landowners are (or can be) compensated for elk use during winter*
- *Carrying capacity of available native winter range for elk and other wildlife in the absence of feedgrounds*
- *How can or how are elk encouraged to use native winter range versus feedgrounds, rancher's hay*
- *The implications of CWD for humans given CWD is detected in water sources*

Q5: What role do you believe elk feedgrounds play in Wyoming today? (130 responded)

- *Feedgrounds are critical to elk population stability; address development pressure and loss of historic winter habitat; improve traffic safety by reducing elk-vehicle collisions; allow opportunities for non-consumptive users (e.g., wildlife watching, photography) to enjoy elk; provide economic benefits via tourism, wildlife viewing, and hunt outfitting; reduce conflict and damage payouts to agriculture producers; allow for healthier beef industry through reduced brucellosis transmission.*
- *Feedgrounds artificially interrupt elk migration patterns; create an unnecessary and highly risky disease reservoir; represent a costly measure to state resources; allows for irresponsible land management and grazing practices; are an unsustainable solution to a complex issue.*

Q6: What role do you believe elk feedgrounds play in Wyoming into the future? (130 responded)

- *Close feedgrounds immediately to mitigate against urgent disease risks*
- *Minimize feedgrounds as the first step in the eventual closure of feedgrounds*
- *Use feedgrounds on an emergency basis, but not as a sustaining option*
- *Improve habitat, reduce livestock use on public land winter range, and work with ranchers on fence-out/protection strategies to reduce reliance on feedgrounds*
- *Minimize feedgrounds and shift focus on elk management practices that do not involve congregating elk (e.g., maintain feeding but minimize feedgrounds whenever possible)*
- *Maintain feedgrounds, and shorten feeding times as much as possible*
- *Maintain feedgrounds, and turn more focus on disease monitoring and research*
- *Maintain with no change to sustain elk populations, agriculture/cattle industry, economic benefits, and viable hunting opportunities*

Q7: Our next phase (Phase II) will include sharing more in-depth information and research, weighing alternatives and trade-offs, and making recommendations about long-term management of elk feedgrounds. What ideas or suggestions do you have as we begin to plan Phase II? *(For example, what ideas do you have for a successful collaborative public process, who do you feel should be involved as we move forward with developing the next phase?)* **(118 responded)**

WHO?

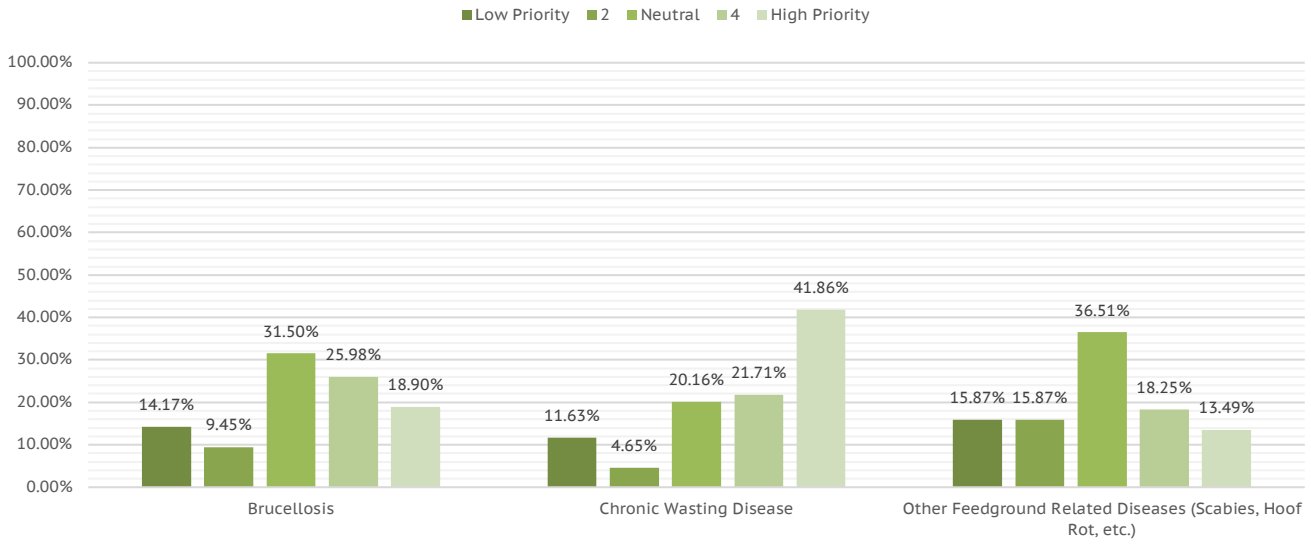
- *Landowners impacted by, in close proximity to, and/or familiar with feedgrounds*
- *Ranchers, farmers, and cattle producers*
- *Sportspersons (resident and nonresident)*
- *WY taxpayers and WY hunting license holders*
- *Outfitters and guides*
- *Recreationists, wildlife watchers, photographers, guides*
- *NGOs and environmental organizations*
- *Local elected officials and citizens*
- *Land management agencies*
- *Wyoming Game and Fish Department*
- *Scientists and biologists*
- *Health Department officials*
- *Tourism and economic development leaders*
- *Individuals invested in the outcome, willing to listen to evidence and facts, and respect others' values*

HOW?

- *Data-driven, science-first*
- *Take the long-term view*
- *Ensure elk are primary stakeholder and focus*
- *Focus on ALL alternatives*
- *Department maintains decision-making role*
- *Education-focused, to continue sharing relevant facts and facets*
- *Online allows for broader participation*
- *In-person preferred for engaging with others*
- *Clearly define the problem and the parameters*

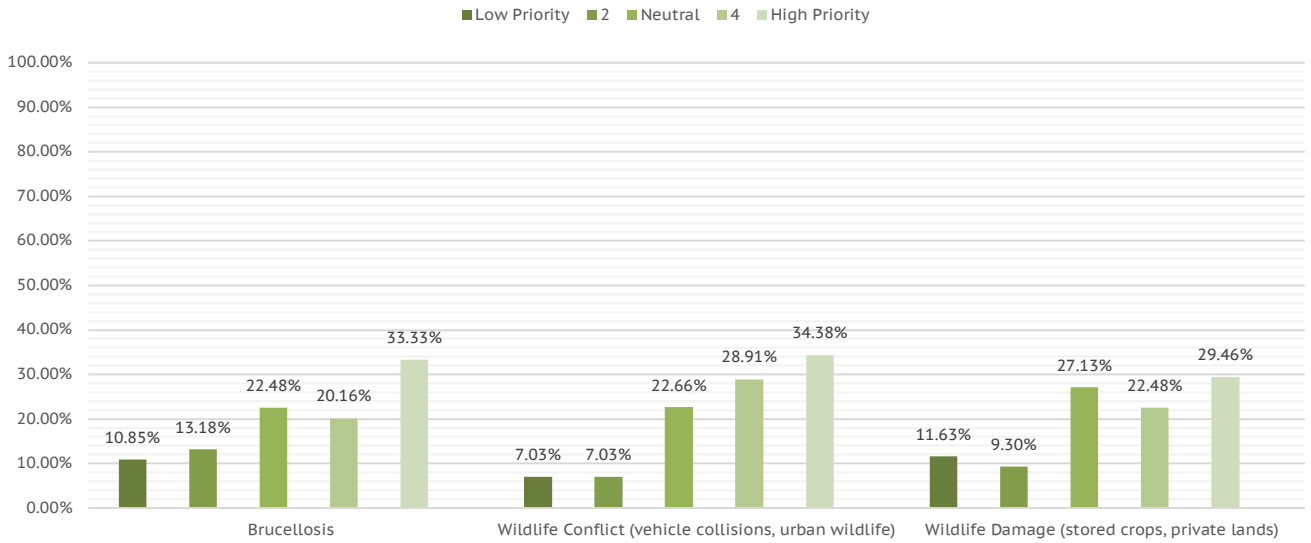
Please Rank the following topics based on your priorities:
(Using a 5-point scale, 1: Low to 5: High)

Q8: Wildlife Disease (129 responded)



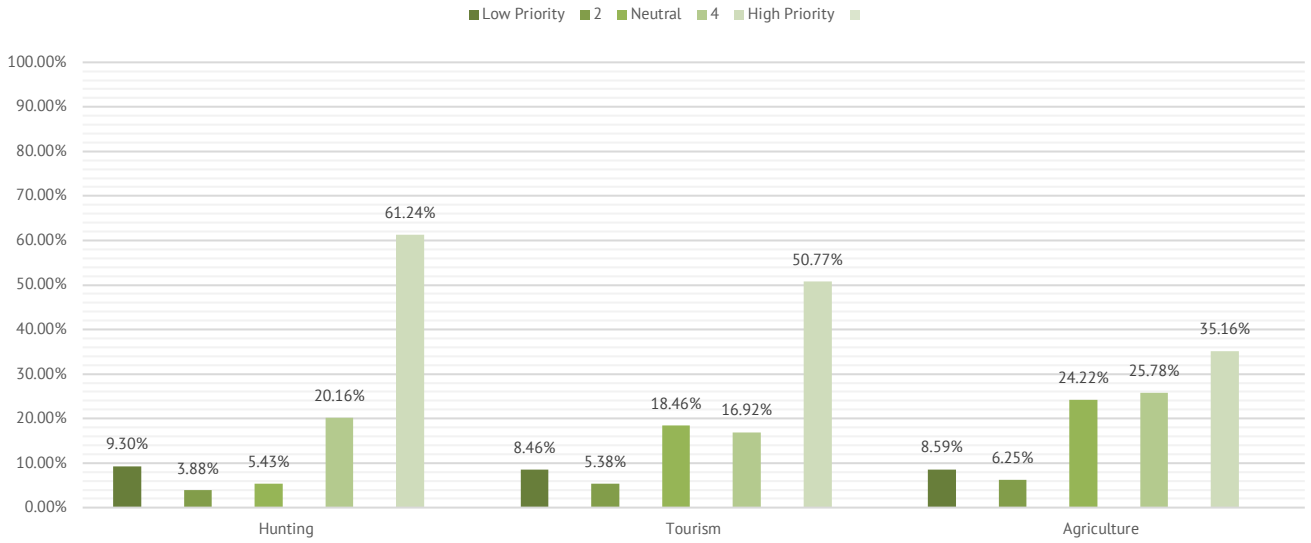
	1: Low		2		3: Neutral		4		5: High	
Brucellosis	14.17%	18	9.45%	12	31.50%	40	25.98%	33	18.90%	24
Chronic Wasting Disease	11.63%	15	4.65%	6	20.16%	26	21.71%	28	41.86%	54
Other Feedground Related Diseases	15.87%	20	15.87%	20	36.51%	46	18.25%	23	13.49%	17

Q9: Impacts on Agriculture (130 responded)



	1: Low		2		3: Neutral		4		5: High	
Brucellosis	10.85%	14	13.18%	17	22.48%	29	20.16%	26	33.33%	43
Wildlife Conflict	7.03%	9	7.03%	9	22.66%	29	28.91%	37	34.38%	44
Wildlife Damage	11.63%	15	9.30%	12	27.13%	35	22.48%	29	29.46%	38

Q10: Economic Impacts: Hunting, Tourism, Agriculture (130 responded)



	1: Low		2		3: Neutral		4		5: High	
Hunting	9.30%	12	3.88%	5	5.43%	7	20.16%	26	61.24%	79
Tourism	8.46%	11	5.38%	7	18.46%	24	16.92%	22	50.77%	66
Agriculture	8.59%	11	6.25%	8	24.22%	31	25.78%	33	35.16%	45
Other	10.26%	8	0.00%	0	65.38%	51	6.41%	5	17.95%	14

Written Comments

In addition to specific Phase I comments received via SurveyMonkey®, the online survey, 196 general written comments were also submitted. The general written comments included a variety of perspectives on elk feedgrounds, similar to the comments described above. Of the 196 submissions that indicated the state of residency, 27% were from Wyoming, 70% were nonresidents, and residency for 3% is unknown.

SECTION 6: Phase I Reflections

Phase I was designed to provide the public and stakeholders with a comprehensive understanding of elk feedground operation and secure feedback that will shape the public process for Phase II, which leads to the development of a future long-term feedground management plan. All aspects of Phase I were planned with those aims in mind, and they were primarily accomplished.

- The comments sought in Phase I were intentionally open-ended (e.g., there wasn't a proposal to specifically comment on). The Steering Team took a broad approach in requesting insight from attendees. While some public processes ask for participant feedback on a particular plan, proposal, or decision, Phase I was purposely a broader information-sharing and information-seeking approach.

- Because some members of the public perceived Phase I was initiated to present a specific feedgrounds plan or proposal, the Department clearly stated at each meeting that feedgrounds were not being imminently closed. Some Phase I participants took that statement to mean the Department would never entertain feedground closure. On the contrary, the Department is engaging in this process intent on considering all viable options. Specific plans and proposals will be taken up in Phase II, so it was clear that a determination on feedground closure was not “on the table” in Phase I.

- Phase I set out to demonstrate the variety of issues surrounding feedgrounds and offer information highlighting their complexity. The Department was able to transparently and flexibly address the myriad questions brought before the presenters at each live meeting. Based on feedback received from Phase I commenters, this approach was appreciated for the expertise and candor displayed and supports the notion that the Department has the knowledge and credibility to continue leading into Phase II.

- The pivot to a virtual format was successful in achieving the essential goals of Phase I. Some respondents and Steering Team members expressed the changed dynamics of virtual was a disadvantage over face-to-face interaction and deliberation. Others appreciated the virtual format for its flexibility and the possibility to engage a broader group of stakeholders. It appears everyone interested in participating in Phase I had an opportunity to do so, as the Department has not received feedback from those who were not aware of or unable to participate in, Phase I meetings. Overall, the virtual format likely impacted who participated and how they engaged.

SECTION 7: Phase II Recommendations, Steps, and Tentative Timeline

The elk feedgrounds collaborative process is designed to consider all biological, social, economic, and political issues to achieve a durable, publicly supported feedgrounds management plan. As evidenced in Phase I, this issue is highly complex, long-term, and historically contentious. Therefore, all future collaborative efforts for Phase II and beyond must be undertaken with care, conscientiousness, and transparency.

Overall Recommendations

1. **Begin with clear, purposeful Department mission and direction.** All future planning and implementation steps will benefit from a strong guiding mission from Department leadership on the direction and cadence of the future of feedgrounds. Unity and clarity across all levels of the Department are imperative, as the Department serves as leaders and conveners of this effort.

2. **The Department serves as the key leaders and conveners in developing the feedgrounds management plan.** As the experts on the issue in both science and practice, and as the entity responsible for guiding the long-term future implementation of a plan, the Department is positioned to develop the feedgrounds management plan. While the Department takes the leadership role in plan development, there will be ongoing consultation, plan improvement, shared learning, and implementation accountability with the public.

3. **Shared learning on the best available science and information must be a priority.** Phase I stakeholders expressed a desire to use the best available science and information to address this highly complex issue. Any future feedgrounds management plan must weigh all biological, social, economic, and political issues along with practical implementation constraints. This means that all parties involved (Department leaders and personnel, partners, and interested members of the public) must be committed to and willing to learn from each other and the best available science and information. This can be gained from experts, seminars, research presentations, on-site tours, and other sources, and can utilize in-person sessions, video or virtual platforms, written reports, and other means.

4. **Implementation must recognize and be adapted to individual feedgrounds.** One complexity of future feedgrounds management lies in the uniqueness of each particular feedground in terms of proximity to agriculture operations and other private lands; proximity to public land, population centers, and highways; elevation, landscape, and topography features; feedground utilization trends; and other factors. To acknowledge and leverage these

distinctions, implementation of recommendations may differ across all Department feedgrounds and benefit from site-specific stakeholders with local perspectives.

Proposed Phase II Steps and Tentative Timeline:

TIMELINE	PHASE II STEP	DESCRIPTION
March 2021-June 2021	**STEP 1: INTERNAL CLARITY AND STAKEHOLDER GROUP SELECTION** Clarify Phase II internal mission and direction; Finalize Phase II timeline and details; Identify and convene stakeholder focus groups composed of specific stakeholders (e.g., sportspersons, local and state elected officials, agriculture landowners and ranchers, outfitters/guides, conservation organizations, tourism and business representatives, etc.)	• Department clarifies its overall mission and direction for the long-term future of feedgrounds and their evolving management • Communicate mission and direction internally (within Department) and externally (with stakeholders and the public) • Steering team meets to clarify roles, timeline, and expectations; and, determine the elements of a viable feedgrounds management plan (e.g., preliminary outline or structure identifying items to address) • Develop preliminary set of expectations for stakeholder focus groups, and a method to recruit and select group members • Convene stakeholder focus groups for initial discussions
June 2021-January 2022	**STEP 2: SHARED LEARNING AND STAKEHOLDER GROUP INPUT** Continue shared learning between Department and stakeholder focus groups; Identify relevant learning needs, information gaps, and best available information resources	• Shared learning among the steering team, partners, and stakeholder focus groups to address feedground-related issues and questions • Receive input from stakeholder focus groups on their long-term feedground management expectations, concerns, and ideas
January 2022-June 2022	**STEP 3: DRAFT FEEDGROUND MANAGEMENT PLAN** The steering team, along with federal partners, draft the initial feedground management plan	• The draft plan will include management options that align with (a) the Department's overall mission and direction and (b) the best available science and information, and (c) takes into consideration stakeholder expectations, concerns, and ideas

June 2022-December 2022	**STEP 4: COMMENT ON DRAFT PLAN** Stakeholder focus groups and general public comment opportunities to provide comments on the draft plan	• Stakeholder focus group members who have been engaged in prior shared learning will review and share input on the draft plan • The draft plan will also be shared publicly for review, input, and engagement with any interested members of the public
December 2022-March 2023	**STEP 5: CONSIDER COMMENTS, REVISE AND FINALIZE PLAN** The steering team, along with federal partners, considers input and revises the plan accordingly	• Department considers all input, then makes revisions and finalizes the plan
March 2023-May 2023	**STEP 6: PLAN APPROVAL** Final plan presented to the Wyoming Game and Fish Commission	• Feedgrounds management plan is presented to the Wyoming Game and Fish Commission for their review, edit, and approval, then publicly shared and positioned for implementation
June 2023 onward (end Phase II, begin Phase III)	**STEP 7: IMPLEMENTATION AND ACCOUNTABILITY** Feedground-specific implementation and ongoing accountability measures are put into place as Phase II concludes	• FEEDGROUND-SPECIFIC IMPLEMENTATION: The Department may convene groups of locally knowledgeable, locally invested stakeholders (e.g., biologists, landowners, sportsmen, conservation organizations, citizens) in Implementation Teams, as needed, to ensure plans are implemented with integrity, and steps for plan implementation are being led and coordinated by appropriate partners and stakeholders. • ACCOUNTABILITY MEASURES: To ensure plans are implemented with integrity, specific challenges are being addressed, and the public is aware of progress, the Department offers updates to the commission, interested stakeholders, and/or the public

Appendix A: Phase I Communications and Outreach

PRESS RELEASES

Sent statewide and to Jackson/Pinedale public and media (9,894 recipients)

November 1, 2020 - TV News - *Feedgrounds Public Process* Aired on KTWO in Casper and KGWN in Cheyenne.

- Approx. 125,000 Viewers

November 9, 2020 - Game and Fish begins Elk Feedgrounds Public Collaborative Process

- 164 clicks from news release

November 16, 2020 - Reminder: Game and Fish holding virtual meetings on elk feedgrounds

- 45 clicks from news release

November 29, 2020 - Reminder: Game and Fish holding virtual meetings on elk feedgrounds

- 103 clicks from news release

December 10, 2020 - Game and Fish updates Wyoming lawmakers on elk feedgrounds public process

- 170 clicks from news release

December 18, 2020 - Joint news release with Grand Teton National Park on CWD positive elk in GTNP.

- Joint release referenced Feedgrounds Public Collaborative

December 28, 2020 - Game and Fish offers additional Q&A on elk feedgrounds

- 49 clicks from news release

MEDIA INTERVIEWS/CORRESPONDENCE

Jackson Hole News & Guide (x3), Casper Star Tribune, WyoFile, Wyoming Public Radio, Mountain Journal, Wyoming Livestock Journal, Powell Tribune, Billings Gazette, Utah Public Radio, Public News Service

DIRECT EMAILS

November 20, 2020 - WY needs your input on elk feedgrounds

- 15,104 recipients (elk management stamp holders, people interested in feedgrounds)
- 40% Open Rate; 272 clicks to sign up for webinar; 174 clicks to website

December 10, 2020 - WY elk feedgrounds meeting recording posted

- 15,209 recipients (elk management stamp holders, people interested in feedgrounds)
- 39% Open Rate; 727 clicks to website

HUNTING UPDATE

November Issue - Featured Game and Fish begins Elk Feedgrounds Public Collaborative Process

- 332,444 recipients; 32% open rate; 331 clicks to read article

December Issue - Featured Game and Fish updates Wyoming lawmakers on elk feedgrounds public process

- 355,074 recipients; 29% open rate; 1,070 clicks to read article

SOCIAL MEDIA

- November 11, 2020 - Facebook Video
- November 12, 2020 - tweet
- November 23, 2020 - Facebook Events
- December 4, 2020 - YouTube video - Initial meeting
- January 4, 2021 - Facebook Post
- January 4, 2021 - Facebook Event
- January 7, 2021 - YouTube video - Q&A session
- Referred 74 visits to the Feedgrounds webpage from social media

FEEDGROUNDS WEB PAGE AND EMAIL

- Created an elk feedgrounds web page and made regular updates, including recordings of the public meetings/presentations
- Created an elk feedgrounds email account and provided regular correspondence with the public on any questions and/or comments they wished to provide

OTHER MEDIA

- November 12, 2020 - Lander and Riverton Radio Shows talked about the upcoming meetings, encouraging attendees and talking about how to register
- November 23, 2020 - Lander Region November Newsletter (3925 recipients). Advertised the meetings with a photo and link to the press release.
- November 25, 2020 - Included info and links in the Sheridan Region November newsletter (4245 recipients)
- November 30, 2020 - Mentioned the upcoming meetings on Sheridan monthly radio program
- December 9, 2020 - Mentioned that one of the recently completed feedground meetings was recorded and available for viewing on the Department website.
- December 16, 2020 - Mentioned on Buffalo monthly radio program that the feedground meeting recording was available for viewing on the Department website.

Appendix B: Phase I Presentations

Elk Feedgrounds: A Challenge We Can Take On

Thank you for joining us!

We will begin the webinar in a moment, once all attendees have joined the meeting.

Elk Feedgrounds: A Challenge We Can Take On

Scott Edberg, Deputy Chief of Wildlife Division

Notes on Technology:

- **All attendees have joined muted.**
- **You will have the option to ask questions and share comments later in the meeting.**
- **Your video will remain off the entire meeting**
- **There will be links and information shared in the chat box**

OUR AGENDA:

PRESENTATIONS

- **Wyoming Game and Fish Department**
- **Federal Partners**
- **Clarifying questions after each speaker**

COMMENTS

- Written comments (via online form or mail)
- Optional verbal comments

NEXT STEPS & ADJOURN

Elk Feedgrounds: A Challenge We Can Take On

- Wyoming Elk Feedground Program – John Lund
- Common Diseases of Elk on Feedgrounds in Wyoming – Hank Edwards, Dr. Samantha Allen
- Brucellosis Management on Elk Feedgrounds – Brandon Scurlock
- National Elk Refuge – Frank Durbian
- Bridger-Teton National Forest – James Wilder
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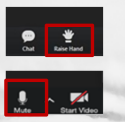
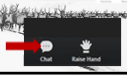
NEXT STEPS & ADJOURN

COMMENTS & QUESTIONS

By Computer or Tablet





By Phone

Questions to Consider:

- What additional information do you need?
- What role do elk feedgrounds play in Wyoming today, and into the future?
- What should be involved in future phases?
- What are your highest priorities (wildlife disease, agriculture impacts, economic impacts, etc.)?

Elk Feedgrounds: A Challenge We Can Take On

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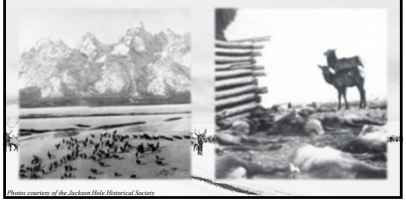
Wyoming
Elk Feedground Program

John Lund, Pinedale Region Wildlife Supervisor

Elk Feeding - The Early Years

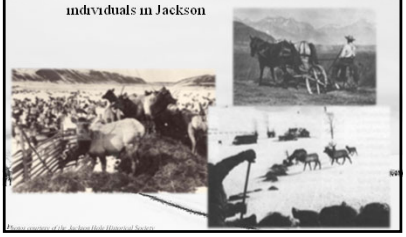
1908 - severe winter around Jackson; numerous elk died of starvation



Photos courtesy of the Jackson Hole Historical Society

Elk Feeding - The Early Years

1909 - limited feeding of elk by private individuals in Jackson



Photos courtesy of the Jackson Hole Historical Society

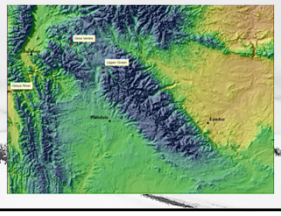
Elk Feeding - The Early Years

1912 - Federal legislation appropriated $5,000 to feed elk on the (present day) National Elk Refuge

Photos courtesy of the Jackson Hole Historical Society

Elk Feeding - State Management

1929 - WGFD initiated operation of three feedgrounds to reduce large scale starvation events



Elk Feeding - State Management

1929 - The State Legislature passed the first law authorizing the filing of claims against the State for damage of property by game animals or game birds.

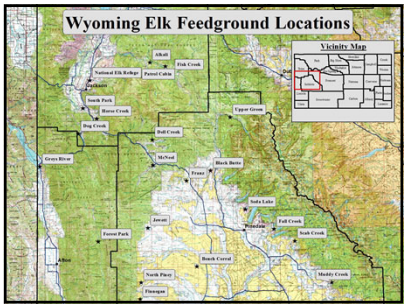
Elk Feeding - State Management

- This legislation created a significant financial burden on the WGFD.
- Wildlife managers found it more efficient and less expensive to feed elk in key problem areas rather than continually try to keep elk out of haystacks.

Elk Feeding - State Management

- Present system was in place by 1960s
- Annually provide feed to ~14,000 – 16,000 elk
- Estimated 80% of elk in feedground herd units attend feedgrounds most winters

Wyoming Elk Feedground Locations



Wyoming Game and Fish Commission Policy

- Authority granted by Wyoming Statute 23-1-302(a)(ix)
- Individual feedground quotas
  - Policy recognizes unpredictable distribution due to weather, habitat, other factors
- Emergency feeding with Commission approval

2019-2020 Feedground Numbers

- 15,124 elk were fed on WGFD feedgrounds
- 5,747 tons of hay was fed
- Overall feeding season was 111 days (Average 123 days)
- Winter mortality was 0.8% (avg. 0.8%)

Feeding Operations

- Feed 8 to 10 pounds of hay/elk daily
  - Varies depending on feedground and temperature
- Feedground managers, biologists, wardens, regional disease personnel work with/assist feeders on a regular basis

Feeding Operations

- Feeders monitor elk behavior, health, mortalities, other issues
- Feeders regularly communicate with WGFD personnel
  - Elk mortalities, elk movements, wolf presence, etc.

Other Entities Involved

- USFS Permit Process (8 feedgrounds on USFS)
- BLM MOU (6 feedgrounds)
- USFWS (1 feedground - National Elk Refuge)
- Private lands (3 feedgrounds)
- Office of State Land and Investments (2 feedgrounds)
- Game and Fish Commission (8 feedgrounds)

Other Activities on Feedgrounds

Classification surveys

Other Activities on Feedgrounds

Elk Research

Other Activities on Feedgrounds

Disease monitoring

- Brucellosis
- CWD

Why Feed Elk?

Reduce elk/cattle commingling and the transmission of disease

Why Feed Elk?

Feedgrounds gather elk at specific locations to prevent movement onto private lands, reducing damage to stored crops and elk/cattle commingling

Why Feed Elk?

Keep elk out of residential areas to reduce property damage

Why Feed Elk?

Reduces elk/vehicle collisions

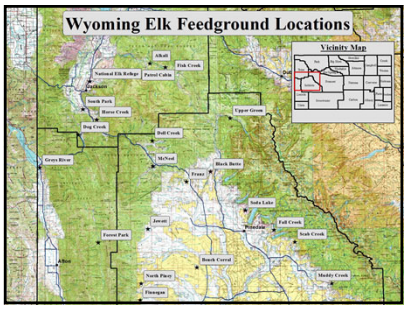
Why Feed Elk?

Feeding allows the WGFD to maintain elk population management objectives in spite of limited winter range availability

Why Feed Elk?

Reduces competition for forage with other big game species

Wyoming Elk Feedground Locations



Challenges

- Long duration of high densities can facilitate density-dependent disease transmissions
  - (e.g., Brucellosis, CWD, etc.)
- Delay feeding as long as possible
- End feeding as early as possible
  - Reduce duration of high concentration to minimize disease transmission
  - Some years, have not fed at some feedgrounds
  - Also reduces feeding costs

Requires a balancing act with potential livestock conflict/damage

Challenges

- Expectations of robust elk populations

Challenges

- Cost
  - Feedground budget $1.6 million in Fiscal Year 2020
    - Elk Special Management Permit - $163,118 annually
- Hay Hauling Logistics
  - 6,000 – 9,000 tons purchased annually
  - Remote, difficult terrain
  - Takes about four months to complete hay hauling

Challenges

- Feeding Operations
  - Contract elk feeders at each feedground
  - Feeding occurs late November through mid April (varies depending on winter conditions)
  - Must feed every day
  - Horses/sleighs (small bales)
  - Tractors (large bales)
  - Hiring elk feeders

Challenges

- Elk Feeders: A Unique Job

Questions?

Elk Feedgrounds: A Challenge We Can Take On

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Common Diseases of Elk on Feedgrounds in Wyoming

Hank Edwards, Wildlife Health Laboratory Supervisor
Dr. Samantha Allen, State Wildlife Veterinarian

Definitions

- Pathogen – organism that causes or can cause disease
  - Bacteria, virus, prion, and parasites
- Zoonotic
  - Animal disease ⇨ human
- Seroprevalence
  - Level of exposure to a pathogen in a population as measured in serum (blood)

Why Disease Matters

- Wildlife health and welfare
- Long-term population health
- Disease transmission can be very high in feedground populations
- Pathogen spillover to other wildlife species
- Human health
- Economic impacts

Disease Topics

- Common diseases that occur on feedgrounds (today):
  - Brucellosis
  - Scabies
  - Necrobacillosis
- Diseases that could occur on feedgrounds (future):
  - Chronic wasting disease (CWD)
  - Bovine tuberculosis (TB)

Brucellosis (*Brucella abortus*)

Brucellosis

- **Bacterial** disease of elk, bison and cattle causing abortion/infertility
- *Brucella abortus*
- Primarily transmitted via contact with abortions (stillbirth) and associated fluids/tissues


Brucellosis & History

- **Introduced into Greater Yellowstone Area around Civil War**
  - First detected in bison in 1917, elk in 1930
- **Cows normally abort first calf after infection**
  - ~ 82% abortion rate of first calf in bison and ~ 61% in elk
  - Not population limiting
- **Disease maintenance on feedgrounds**
  - Peak transmission period overlaps with elk congregation on feedgrounds in early spring

Brucellosis & Human Health

Serious zoonotic disease

Low risk during hunting season

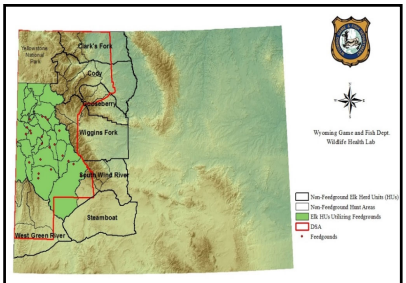
- Bacteria not "active"
  - Can be found in bursa (joints) and lymph nodes
- Normally not found in meat
- Easily killed by cooking

Health risks after February 1st

- Bacteria becomes active in pregnant elk/bison
  - Fetus and associated fluids


Brucellosis Surveillance

- Feedground Surveillance
  - Monitor brucellosis in feedground populations
  - 3-5 feedgrounds each year
  - Seroprevalence over time
- Non-Feedground Surveillance
  - Statewide surveillance with focus on Designated Surveillance Area boundary
  - Hunter-killed cow elk
  - 8,000-10,000 blood kits per year



Brucellosis & Feedgrounds

- Dichotomy
  - Feedgrounds perpetuate the disease while preventing transmission to livestock
    - Fewer cattle herds with brucellosis near feedgrounds
- Feedgrounds serve as a reservoir for brucellosis
- In some cases, brucellosis persists in the absence of feedgrounds

Scabies

Scabies

- Agent: Parasite
  - *Psoroptes spp.* mites
- Animal to animal transmission
- Causes hair loss and crusting over neck, trunk and upper legs
- Weakened/poor nutritional conditions, high density
  - Bulls post rut


Scabies & Feedgrounds

- Severely infected animals commonly noticed by tourists
- Usually self limiting and resolves by early summer
- Generally low morbidity and mortality
- Can result in welfare issues

Necrobacillosis

Necrobacillosis

- **Bacterial** infection
- Agent: *Fusobacterium necrophorum*
  - Opportunistic pathogen normally found in intestine and feces
- Foot rot and necrotic stomatitis
- Significant losses under some circumstances
  - 15% to 20% of calves
  - Welfare concerns

Necrobacillosis

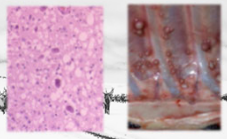
- Transmission: Increases with density
  - Foot rot: wounds/lesions between hooves
    - Prolonged wet conditions
    - Sharp ice crusts over snow
  - Necrotic stomatitis: damage to oral mucosa
    - Dental eruption
    - Rough forage
- Disease progression to internal organs
  - Lung, liver, rumen…
  - Poor prognosis

Necrobacillosis & Feedgrounds

- Disease associated with feeding
  - Can resolve after animals leave feedground
- Predominately affects calves
  - More susceptible (stress, immunity)
- Managed on some feedgrounds
- Welfare concerns

Future Disease Concerns

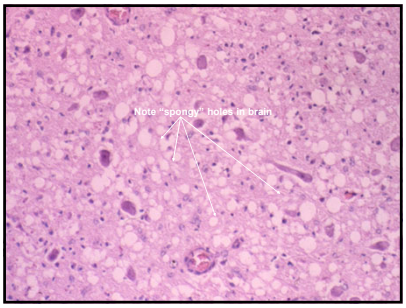
- Chronic wasting disease (CWD)
- Bovine tuberculosis (TB)



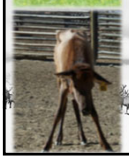
Chronic Wasting Disease (CWD)

Chronic Wasting Disease

- CWD is a **progressive**, **fatal**, and **untreatable** nervous system disease of white-tailed deer, mule deer, elk, moose, and reindeer
- Caused by a **prion** (infectious protein)



Clinical Signs of CWD



- Incubation period: 1.5 years to ??
- No clinical signs during incubation period
  - Vast majority of all harvested CWD positive animals appear normal
- Clinical signs during last 4-8 weeks of the disease:
  - **Weight loss**
  - **Drooling**
  - **Behavioral changes**
  - Hair/coat changes
  - Droopy ears
  - Lack of general awareness

Shedding Prions in the Environment

- CWD prions can be shed in feces, urine, and saliva for **months to years** during the incubation period

CWD Transmission

- Animal to animal
  - Increases with density
- Environment to animal
  - Ingestion of contaminated soil/plants/hay (saliva, urine, feces)
  - Contact with contaminated surfaces
    - Mineral licks, feeders/troughs
  - Carcasses
- Environmental persistence of prions: **16+ years** (scrapie)

CWD & Sex/Age

- CWD equally distributed in bulls and cows
- More common in prime age animals
- Mule and white-tailed deer
  - CWD more common in bucks
  - CWD more common in prime age bucks

CWD & Genetics

- Genetics can influence the length of time animals survive once infected with CWD
- No true resistance identified
- Prolonged shedding?

CWD & Predators

- Mountain lions selectively prey on CWD infected animals
- Wolf predation may decrease CWD prevalence (based on modeling)

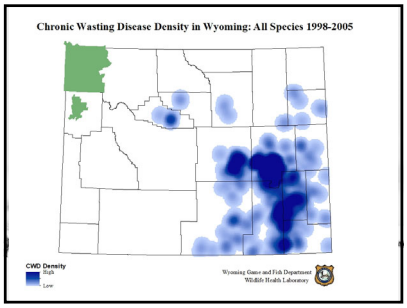
CWD & Human Health

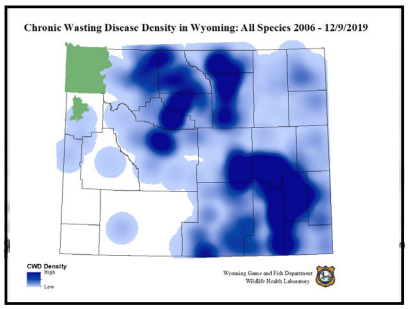
- Laboratory Studies: substantial species barrier – not absolute
- CDC and the World Health Organization recommend not consuming CWD positive animals
  - Prion not inactivated by cooking

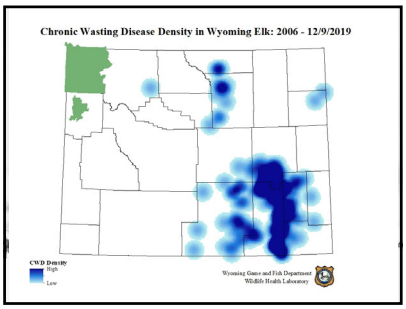
Chronic Wasting Disease in Wyoming

CWD in Wyoming

- Unknown origin or date of establishment
- Modeling suggests disease presence since 1950s
- Documented in free-ranging mule deer (1985), elk (1986), white-tailed deer (1990), and moose (2008)




Chronic Wasting Disease Density in Wyoming: All Species 2006 - 12/9/2019
CWD Density
High
Low
Wyoming Game and Fish Department
Wildlife Health Laboratory


Chronic Wasting Disease Density in Wyoming Elk: 2006 - 12/9/2019
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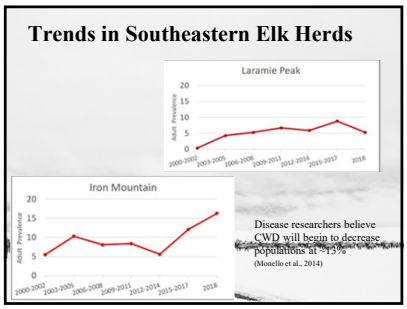
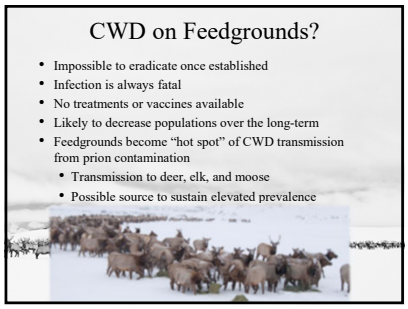
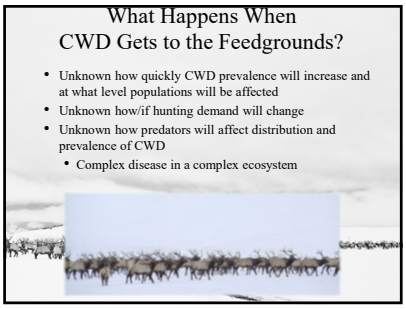
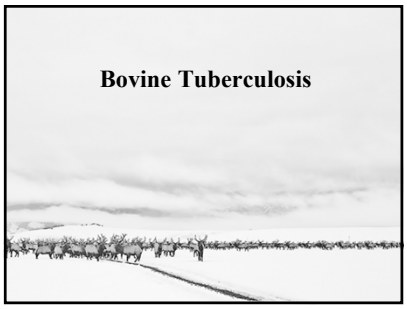
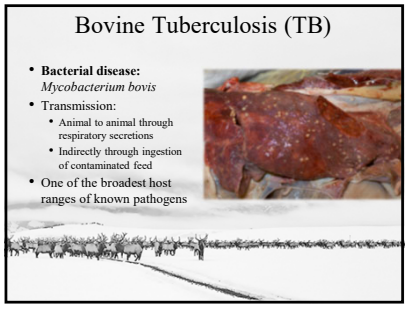
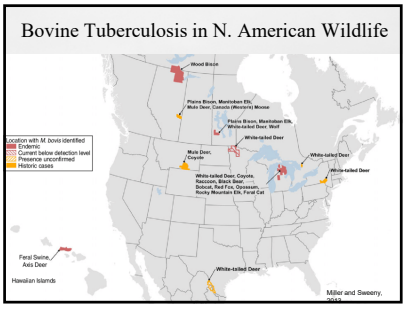

Trends in Southeastern Elk Herds
Laramie Peak
Adult Prevalence
20
15
10
5
0
2000-2002
2003-2005
2006-2008
2009-2011
2012-2014
2015-2017
2018
Iron Mountain
Adult Prevalence
20
15
10
5
0
2000-2002
2003-2005
2006-2008
2009-2011
2012-2014
2015-2017
2018
Disease researchers believe CWD will begin to decrease populations at ~15%
(Monello et al., 2014)

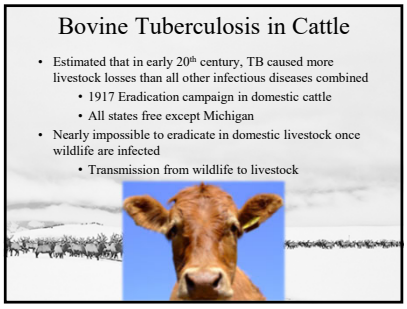

CWD on Feedgrounds?
Impossible to eradicate once established
Infection is always fatal
No treatments or vaccines available
Likely to decrease populations over the long-term
Feedgrounds become "hot spot" of CWD transmission from prion contamination
Transmission to deer, elk, and moose
Possible source to sustain elevated prevalence


What Happens When CWD Gets to the Feedgrounds?
Unknown how quickly CWD prevalence will increase and at what level populations will be affected
Unknown how/if hunting demand will change
Unknown how predators will affect distribution and prevalence of CWD
Complex disease in a complex ecosystem


Bovine Tuberculosis

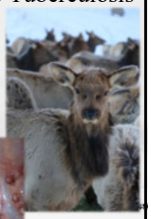

Bovine Tuberculosis (TB)
Bacterial disease:
Mycobacterium bovis
Transmission:
Animal to animal through respiratory secretions
Indirectly through ingestion of contaminated feed
One of the broadest host ranges of known pathogens

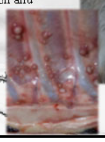

Bovine Tuberculosis in N. American Wildlife
Location with M. bovis identified
Endemic
Current below detection level
Presence unconfirmed
Historic cases
Wood Bison
Plains Bison, Manitoban Elk, Mule Deer, Canada (Rocky's) Moose
Plains Bison, Manitoban Elk, White-tailed Deer, Wolf
White-tailed Deer
Mule Deer, Coyote
White-tailed Deer
White-tailed Deer
White-tailed Deer, Coyote, Raccoon, Black Bear, Bobcat, Red Fox, Opossum, Rocky Mountain Elk, Feral Cat
Feral Swine, Axis Deer
Hawaiian Islands
White-tailed Deer
Miller and Sweeny, 2013


Bovine Tuberculosis in Cattle
Estimated that in early 20th century, TB caused more livestock losses than all other infectious diseases combined
1917 Eradication campaign in domestic cattle
All states free except Michigan
Nearly impossible to eradicate in domestic livestock once wildlife are infected
Transmission from wildlife to livestock

Clinical Signs of Bovine Tuberculosis

- Coughing, nasal discharge and difficulty breathing
- Yellow nodules on inner ribcage, lungs, within lymph nodes and tonsils
- Chronic progressive disease eventually causing emaciation and debilitation



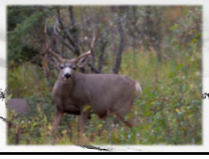


Bovine Tuberculosis & Human Health

- Serious **zoonotic** pathogen
- Transmission: Contaminated, unpasteurized dairy products, infection of open wound, or inhalation
- Human cases now uncommon with the pasteurization of milk and near eradication in cattle
  - *M. tuberculosis* more common

Bovine TB & Feedgrounds

- Eradication nearly impossible once established in feedground populations
- Disease will likely rapidly spread through a feedground population
- Transmission to livestock and other wildlife species (new reservoirs?)
- Human health



Feedgrounds & Disease

- More diseases to consider – only covered most common
- Disease management possibilities in the feedground plan
  - **Limiting transmission** through feedground management practices (low density feeding?)
  - Tipping points that **trigger management** actions (early end to feeding that season?)
    - Disease detection or prevalence threshold trigger
  - Many options to consider in phase two of feedground plan development.

Disease Questions?

Elk Feedgrounds: A Challenge We Can Take On

- Wyoming Elk Feedground Program – John Lund
- Common Diseases of Elk on Feedgrounds in Wyoming – Hank Edwards, Dr. Samantha Allen
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- Grand Teton National Park – Gus Smith

Brucellosis Management on Elk Feedgrounds

Brandon Scurlock,
Pinedale Region Wildlife Management Coordinator

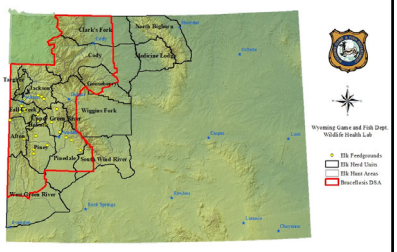
Brucellosis Antibody Prevalence

Females >1 year old; 2007-2017

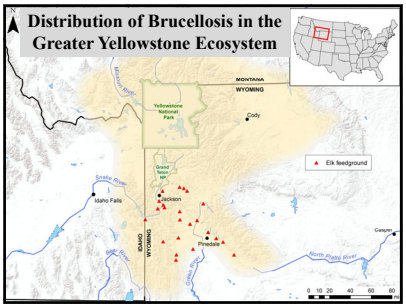
25% **(999/4076)**

Updated from: Scurlock, B.M. and H.E. Edwards. 2010. Status of Brucellosis in free ranging elk and bison in Wyoming. J. Wild. Disease.

Distribution of Brucellosis in WY



Distribution of Brucellosis in the Greater Yellowstone Ecosystem



Brucellosis Infections in Elk

- Limited mortality due to *B. abortus*
- Brucellosis exposure reduced reproductive output of elk by 24% (Cotterill et al., 2018. Brucellosis reduces mid-winter pregnancy in elk. Ecol. and Evol.)
  - Miscarriages/abortions AND failure to conceive post-infection

Brucellosis Infections in Cattle

- GYE elk primary reservoir
- Outbreaks in 20+ cattle herds since 2000
  - transmission linked to elk
- Vaccination not 100%
  - helps prevent abortions
- Quarantine very expensive

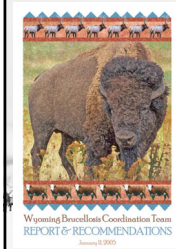
Brucellosis Infections in Cattle

- Increased testing requirements
- Restricted movement
- Potential depopulation
- All combined = significant financial impact

Wyoming Governor's Brucellosis Coordination Team

- Convened after brucellosis transmission from elk to cattle in 2004
  - Addressed 4 topics
    - Prevent new infections in cattle
    - Action plan for new case in cattle
    - Human health
    - Brucellosis in elk/feedgrounds

Brucellosis Coordination Team



- Produced report with 28 recommendations
  - Brucellosis Management Action Plans, *Brucella* Research, Test and Slaughter
  - Feedground Phase-Out Minority Report

WGFD Brucellosis Management

- Integrated approach
  - Elk/Cattle Separation
  - Habitat Enhancement
  - Feedground Management
  - Surveillance
  - Vaccination
  - Adaptive Management

WGFD Brucellosis Management

- Integrated approach
  - Elk/Cattle Separation
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  - Surveillance
  - Vaccination
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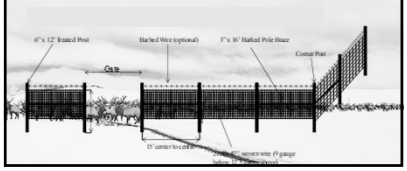
Winter Feeding of Elk

Effective commingling prevention

Elk Hazing

Hay Stackyard Fencing

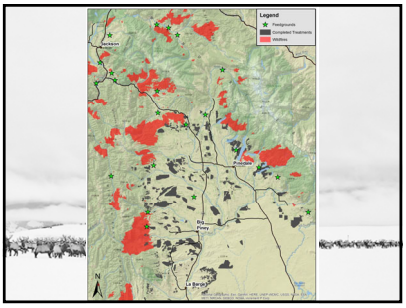
- Provide treated posts, poles and wire to cattle producers with chronic elk damage/co-mingling



WGFD Brucellosis Management

- Integrated approach
  - Elk/Cattle Separation
  - Habitat Enhancement
  - Feedground Management
  - Surveillance
  - Vaccination
  - Adaptive Management

Habitat Enhancements



WGFD Brucellosis Management

- Integrated approach
  - Elk/Cattle Separation
  - Habitat Enhancement
  - Feedground Management
  - Surveillance
  - Vaccination
  - Adaptive Management

Carcass Removal

Feeding on clean snow

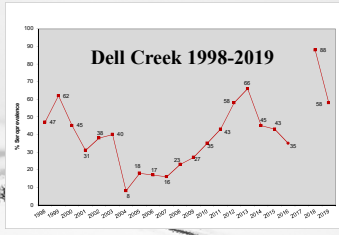
WGFD Brucellosis Management

- Integrated approach
  - Elk/Cattle Separation
  - Habitat Enhancement
  - Feedground Management
  - Surveillance
  - Vaccination
  - Adaptive Management

2019 Feedground Elk Capture Summary- Pinedale/Jackson

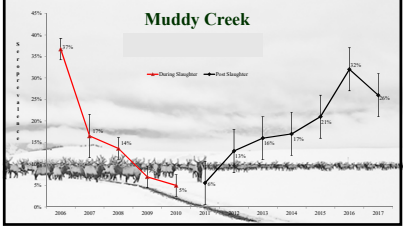
- 343 elk captured on 13 feedgrounds
- 231 yearling and adult cows tested
- 34% overall prevalence
- 45 GPS Collars and 14 VITs

Long-Term Brucellosis Prevalence



Test and Slaughter

Post-slaughter brucellosis prevalence surveillance



WGFD Brucellosis Management

- Integrated approach
  - Elk/Cattle Separation
  - Habitat Enhancement
  - Feedground Management
  - Surveillance
  - Vaccination
  - Adaptive Management

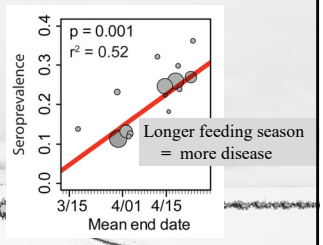
Elk *B. abortus* Strain 19 Vaccination

- Began in 1985 – discontinued in 2015
- Vaccinated ~ 2,500 calves annually
- Total vaccinated 1985-2015
  - 91,145 juveniles (99% avg. vacc/yr)
  - 19,336 adults (67% avg. vacc/yr)

WGFD Brucellosis Management

- Integrated approach
  - Elk/Cattle Separation
  - Habitat Enhancement
  - Feedground Management
  - Surveillance
  - Vaccination
  - Adaptive Management

B. abortus prevalence and feeding season length



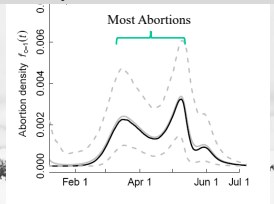
Updated from Cross et. al. 2007. Effects of management and climate on [illegible] in the Greater Yellowstone Ecosystem. *Eco. App.*

Characteristics of Brucellosis Transmission

- 641 VITs deployed 2006-2017
- 526 calving events
- 31 reproductive failures

B. abortus transmission risk

March-May is Peak Transmission Period



Cross, P. C., *et al.* 2015. Estimating the phenology of elk brucellosis transmission. *J. Wildlife Manage.*

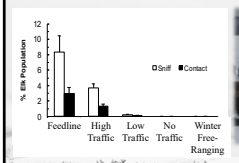
Management Action

Truncation of feeding season in spring

- Reduce duration of high concentration

How do elk contact aborted fetuses (transmission)?

How do elk contact aborted fetuses (transmission)?



Maichak, et. al. 2009. Effects of management, behavior, and scavenging on risk of [illegible] transmission in elk of Western Wyoming. *J Wild Diseases*.

Management Action

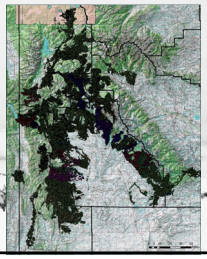
Reduces elk-fetus contacts by 75%!

Traditional Feedline

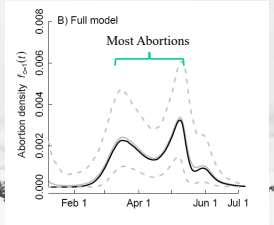
Low-Density

Elk/Cattle Brucellosis Transmission Risk Assessment

2007-2016; over 700 elk GPS collars years of data from feedgrounds



B. abortus transmission risk



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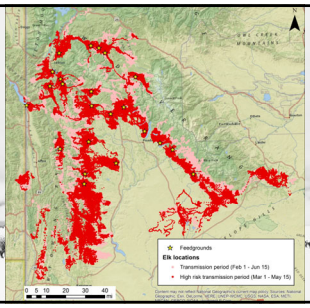

Questions?

Elk Feedgrounds: A Challenge We Can Take On

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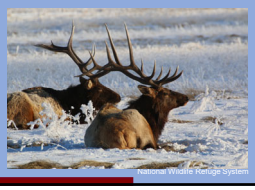
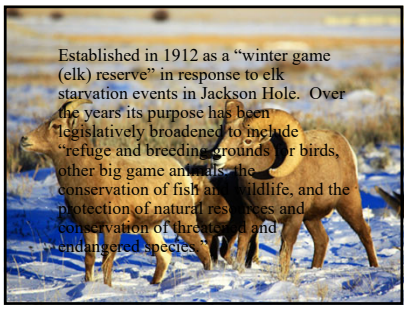
U.S. Fish & Wildlife Service

National Elk Refuge

History, role of supplemental feeding, issues and the future?



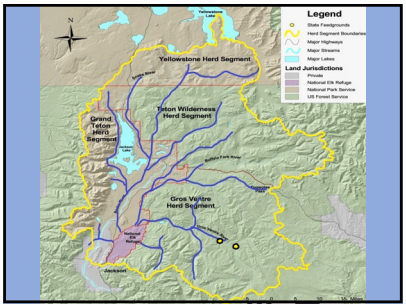
National Wildlife Refuge System



Established in 1912 as a "winter game (elk) reserve" in response to elk starvation events in Jackson Hole. Over the years its purpose has been legislatively broadened to include "refuge and breeding grounds for birds, other big game animals, the conservation of fish and wildlife, and the protection of natural resources and conservation of threatened and endangered species."

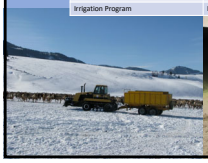
Serves as a supplemental feedground for the Jackson Elk Herd and Jackson Bison Herd.

- Elk on NER feedground as a percentage of Jackson Herd
  - 74% in 2020
  - Mean = 68% (2008-2020)
- Number of elk classified (counted and assigned as bull/spike/calf/cow) on NER feedground
  - 8,095 in 2020
  - Mean = 7,420 (2008-2020)
- Bison fed on NER
  - 283 (2020)
  - Mean = 519 (2008-2020)



National Elk Refuge Feedground vs. Other WY Feedgrounds

National Elk Refuge	Wyoming Feedgrounds
~5,000 acres	<20 acres
~8,000 elk fed	<1,000 elk fed
Highly Mechanized	Sleds Drawn by Horses or Tractors
Feed Pellets	Combination of Grass Hay and Alfalfa
Irrigation Program	No Irrigation



Refuge Management Plans, Guiding Legislation and Policy

- Comprehensive Conservation Plan: National Elk Refuge (2015)
- Bison and Elk Management Plan (2007)
- Step Down Bison and Elk Management Plan (2019)
- National Wildlife Refuge System Improvement Act (1997)
- National Wildlife Refuge System: Biological Integrity, Diversity, and Environmental Health Policy (2001)

Refuge Feedground Issues

- Continued degradation of Refuge habitat, especially woody vegetation, that supports elk, other ungulates, migratory birds and other wildlife.
- Concentration of elk and bison on feedgrounds greatly increases potential for disease transmission. (e.g. brucellosis, CWD, Septecemic Pasteurellosis, hoof rot, etc…)

Step Down Bison and Elk Management Plan

- "A structured framework for reducing reliance on supplemental winter feeding for the next five years"

Step Down Bison and Elk Management Plan

- Phase 1
  - 5-year implementation period.
  - Work towards reducing the average number of elk on feed to 5,000, while maintaining the WGFD's Jackson Elk herd population objective.
  - Work towards reducing the winter population of bison to the WGFD recommended and BEMP adopted objective of 500.
- Phase 2
  - Reduce the reliance of elk and bison on supplemental feed.

Plan Implementation: Where are we at and next steps?

- Terminated feeding one week early in spring of 2020.
- Will terminate feeding one week early in spring of 2021 and initiate later start to feeding in fall of 2021 (iterative process).
- Initiating stakeholder group to evaluate and implement mitigation measures to diminish or eliminate potential issues associated with reduced feeding on Refuge.

Current Litigation

- 2019: Lawsuit filed against USFWS by Defenders of Wildlife et al., USFWS unreasonable delay in ending the agencies elk feeding program, Step Down Plan is inadequate and undermines both 1997 Refuge Improvement Act and NEPA
- 2020: Wyoming Outfitters and Guides Association et al. were granted authorization to intervene in lawsuit
- USFWS moving forward with Step Down Plan pending final ruling

US Fish and Wildlife Service Elk Feeding Ground Concerns

- Jackson Elk Herd size exceeds carrying capacity of the winter range.
- Supplemental feeding concentrates elk which can exacerbate disease transmission rates.
- Chronic Wasting Disease introduction into the Jackson Elk Herd.

Potential Effects of CWD on the Jackson Elk Herd

- 2017 model using CWD data from Rocky Mountain National Park and Jackson Elk Herd population data:
  - Predicts 10% CWD prevalence 5 years after introduction
  - Predicts declining population at 7% CWD prevalence without any cow elk harvest
  - Current cow elk harvest in the Jackson Elk Herd could not be sustained at any level of CWD prevalence

Galloway, N.L., R.J. Monello, D. Brimeyer, E. Cole and N.T. Hobbs. 2017. Model forecasting of the impacts of chronic wasting disease on the Jackson Elk Herd. Technical Report. 10.13140/RG.2.2.20082.91842. 32 pp.

Future

- Work with partners and the public to implement the Bison and Elk Management Step-Down Plan
- Work closely with stakeholders to identify acceptable solutions to any impacts from a reduced reliance on supplemental feedings
- Continue research that supports and informs science-based habitat and wildlife management decisions

U.S. Fish & Wildlife Service

Frank Durbian, Refuge Manager
307-201-5409
frank_durbian@fws.gov

National Wildlife Refuge System

Elk Feedgrounds on the Bridger-Teton National Forest

JAMES WILDER
Forest Wildlife Biologist, Bridger-Teton National Forest
U.S. Department of Agriculture
Jackson, WY

December 2, 2020

Overview

- History of feedgrounds on the Bridger-Teton NF
- The Forest Service role in feedgrounds
- Current litigation
- Concerns

8 feedgrounds on BT

1. Upper Green River -1930.
2. Dog Creek (Prichard) - 1951.
3. Muddy Creek and Fall Creek - 1951.
4. Alkali Creek and Fish Creek - mid 1960's (1929 at Goosewing RS).
5. Forest Park and Dell Creek - 1979 and 1975

The Forest Service's (FS) role in feedground operations

- Feedgrounds on FS lands are considered a special use, and operation of these feedgrounds requires a special-use permit (36 CFR 251.50).
- FS decisions on issuing special use permits are limited to
  - whether WGFC should be authorized to use FS land for its winter elk management activities at feedgrounds and
  - if authorized, what terms and conditions should be included in the authorization.
- The primary considerations are the potential effects to FS lands and any potential conflicts the operation may have with other public uses and FS programs.

Example feedground permit terms, conditions, and mitigation measures

- WGFC will
  - use weed free hay to minimize the potential introduction of noxious weeds.
  - monitor and treat noxious and invasive weeds within the permit area.
  - avoid using wetland areas whenever possible when the ground is not frozen.
  - avoid feeding in areas within 200 feet of perennial stream banks

1990 Bridger-Teton Land and Resource Management Plan (Forest Plan)

- Guides management direction and decision making on the BT
- Provides for multiple-uses and sustained-yield
- We ensure feedground operations are consistent with the relevant Forest Plan Goals, Objectives, and Standards. Some examples:
  - Goal 1.1 – Local communities gain greater prosperity
  - Goal 4.8 – Livestock operations are not disrupted needlessly.
  - Objective 1.1(g) – Help re-establish historic elk migration routes to provide increased viewing and hunting opportunities.
  - Objective 2.1(a) – Provide suitable habitat to support WGFD population objectives.
  - Forest-wide Big Game Winter Range Standard – human activity in crucial big-game winter range restricted from November 15 to April 30.

Current litigation

- April 20, 2020- Western Watersheds Project, Sierra Club, Wyoming Wildlife Advocates and Gallatin Wildlife Association filed a complaint alleging the BTNF violated NEPA and a Court Order regarding feedground reauthorization at Alkali Creek, and lacked NEPA for feedgrounds at Forest Park and Dell Creek.
- Pending a court decision:
  - The WGFD is allowed to feed at Forest Park and Dell Creek in accordance with the terms and conditions of the existing special use permit.
  - At Alkali Creek, only emergency feeding is allowed.
    - The WGFD has not fed elk at Alkali since the 2015-2016 season.

Current concerns and issues

- Feedgrounds are controversial due to disease, including chronic wasting disease (CWD), and the risk that feedgrounds exacerbate the spread of CWD by congregating animals.
- To date, CWD has not been confirmed in elk in western WY.
- The State, private landowners, and outfitters & guides wish to continue the program to maintain high elk populations, reduce conflicts with livestock, and reduce the spread of disease to domestic livestock.

Thank you!

james.wilder@usda.gov

U.S. Department of the Interior | Bureau of Land Management

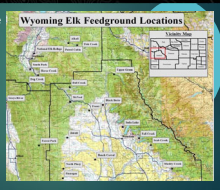
Wyoming

U.S. Department of the Interior | Bureau of Land Management

Wyoming

BLM Surface Estate feedgrounds:

- Bench Corral
- Fall Creek
- Finnegan
- Franz
- North Piney
- Scab Creek



U.S. Department of the Interior — Bureau of Land Management

Wyoming

BLM and Wyoming WGFD manage winter elk feeding programs on BLM federal surface estates in Sublette County through a Memorandum of Understanding or "MOU".

Wyoming Game and Fish Department Objectives:

- Maintain sufficient base populations of elk through winter feeding to continue to provide sustained harvest at levels compatible with and habitat capabilities

U.S. Department of the Interior — Bureau of Land Management

Wyoming

Bureau Of Land Management Objectives:

- Manage habitat within land-use capabilities and consistent with the Bureau's Planning System (i.e. wildlife habitat, livestock grazing, outdoor recreation, etc.)
- Place special management emphasis on public lands mutually established as being of unique importance to winter elk feeding programs

U.S. Department of the Interior — Bureau of Land Management

Wyoming

Pinedale Resource Management Plan, 2008

"In and adjacent to elk feedgrounds, maintain and improve habitat quality and ensure the continued viability of the elk feedgrounds."

a. Elk feedgrounds will be maintained.

b. Surface occupancy is prohibited on elk feedgrounds, except for authorized activities to maintain feedground facilities and manage wintering elk.

c. No unauthorized human presence is permitted within 1 mile of elk feedgrounds from November 15 through April 30. Where the feedground location is split estate (private surface ownership and federal minerals), this restriction is limited to BLM-permitted mineral activities.

d. BLM will work with the WGFD and affected parties to improve habitat quality in areas surrounding feedgrounds.

National Park Service

Gus Smith, Chief of Science and Resource Management
Grand Teton National Park
2020

U.S. Department of the Interior
National Park Service

Law, regulation and policy guiding the National Park Service on wildlife management

The Organic Act (16 U.S.C. 1 2 3 and 4)

"…which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations"

Law, regulation and policy guiding the National Park Service on elk management in the park

Grand Teton National Park enabling legislation (Public Law 81-787)

SEC 6. (a) The Wyoming Game and Fish Commission and the National Park Service shall devise, from technical information and other pertinent data assembled or produced by necessary field studies or investigations conducted jointly by the technical and administrative personnel of the agencies involved, and recommend to the Secretary of the Interior and the Governor of Wyoming for their joint approval, a program to insure the permanent conservation of the elk within the Grand Teton National Park established by this Act. Such program shall include the controlled reduction of elk in such park, by hunters licensed by the State of Wyoming and deputized as rangers by the Secretary of the Interior, when it is found necessary for the purpose of proper management and protection of the elk.

NPS policy goals related to elk management outside of the park

Four goals of the Bison and Elk Management Plan (2007)

Goal 1 – restore and perpetuate natural ecosystem functioning in the park, restore and maintain native habitats

Goal 2 – perpetuate natural processes and interactions of bison and elk with natural environmental fluctuations influenced by fire, vegetation succession, weather, predation, and competition

Goal 3 – Contribute to WY Game and Fish objectives for the Jackson elk and bison herds to the extent compatible with Goals 1 & 2 and to legal directives governing GTNP, National Elk Refuge and the John D. Rockefeller Jr. Memorial Parkway.

Goal 4 – Work with the State of WY to reduce the prevalence of brucellosis in bison and elk populations in order to protect the economic interest and viability of the livestock industry, and reduce the risk of adverse effects of or from other nonendemic diseases not currently found in the Jackson bison or elk populations.

Federal laws and the Final Bison and Elk management plan and EIS guide the NPS on feedgrounds located outside NPS lands

The Organic Act of the NPS (1916), and the act that made Grand Teton a National Park provide no NPS authority related to feed grounds outside of NPS lands.

The Bison and Elk Management Plan (2007) does recommend "Working in close cooperation with WY Game and Fish, existing conditions, trends, new research findings, and other changing circumstances will provide the basis for developing and implementing a dynamic framework for decreasing the need for supplemental food on the refuge."

Questions?

Gus Smith, 307.739.3481, gus_smith@nps.gov

OUR AGENDA:

PRESENTATIONS
- Wyoming Game and Fish Department
- Federal Partners
- Clarifying questions after each speaker

COMMENTS
- **Written comments (via online form or mail)**
- **Optional verbal comments**

NEXT STEPS & ADJOURN

SHARING WRITTEN COMMENTS

- **Online Form:**
  - Link will be in chat box, in a follow-up email, and in your browser when webinar concludes
- **By Mail:**

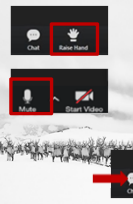
Wyoming Game and Fish Department
Attn: Feedground Comments
3030 Energy Lane
Casper, WY 82604

SHARING VERBAL COMMENTS

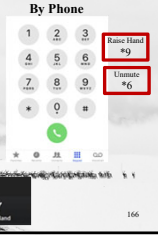
- Raise your hand
- Your name will be called, and you will be asked to unmute your microphone
- Please begin by sharing your name, location
- Please limit your comments to 2-3 minutes, or less
- Be sure to also submit your comments in writing

COMMENTS & QUESTIONS

By Computer or Tablet



By Phone



Questions to Consider:

- What additional information do you need?
- What role do elk feedgrounds play in Wyoming today, and into the future?
- What should be involved in future phases?
- What are your highest priorities (wildlife disease, agriculture impacts, economic impacts, etc.)?

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Elk Feedgrounds: A Challenge We Can Take On

What's Next…
- Public Collaborative Process (Phase II)
- Achieve a long-term, durable, publicly-supported feedgrounds management plan