

WHISKEY MOUNTAIN BIGHORN SHEEP HERD SITUATION ASSESSMENT AND PROCESS RECOMMENDATIONS



Jessica M. Western, Ph.D.
Ruckelshaus Institute
Haub School of Environment and Natural Resources



UW

UNIVERSITY OF WYOMING

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EXECUTIVE SUMMARY

Introduction and Overview

The Wyoming Game and Fish Department and the Wyoming Wild Sheep Foundation asked the Ruckelshaus Institute to conduct a situation assessment to explore what local stakeholders felt attributed to the decline of the Whiskey Mountain bighorn sheep herd, whether they would be willing to participate in a collaborative process, and what type of collaborative process would help provide recommendations for improvement.

Description of the Assessment Process and Methodology

This assessment is based on confidential, voluntary interviews with 22 stakeholders who represent a range of interests and connections to the herd and its location. These stakeholder groups consist of the livestock industry, State and Federal government, the Wyoming Game and Fish Department, conservation groups, outfitters, hunters and community members (see Appendix A). Each interview consisted of questions regarding participants' perspectives regarding bighorn sheep management on Whiskey Mountain, perceptions on whether a collaborative process would be appropriate in this case and what would be needed to make a collaborative process as productive as possible.

The structured interviews were organized by question to explore key themes in the answers identified by frequency and significance. The results presented in the Findings represent the dominant responses and additional ways of thinking that emerged in the interviews. The results do not seek to find or represent a majority opinion. Rather, this assessment seeks to represent all the ways the respondents answered the questions.

Findings: Summary of Key Points

- All respondents were willing to contribute to a collaborative process.
- All respondents are deeply concerned regarding the Whiskey Mountain bighorn sheep herd.
- There are a variety of causes that respondents attribute to low lamb recruitment in the herd including disease, predation or presence of carnivores who elicit the movement of sheep to less nutritious areas, lack of nutritious forage, and either absence of people or too much

presence of people. By far the most dominant causes that emerged from the interviews for the herd's decline were disease and low lamb recruitment.

- For a collaborative process to be effective respondents suggested that all stakeholders are invited, that there is facilitation or some form of leadership, that scientists and technical expertise is effectively included and that there is a combination of a public engagement and a scientific information sharing.

Recommendations

Based on our interviews and analysis of this qualitative data, we recommend a collaborative solution-seeking process based on a number of criteria. The criteria include: building on what has already been learned, e.g. in the course of the Whiskey Mountain Technical Team's efforts, efficiency, transparency, inclusivity, a clear and realistic decision-making process, and adaptive management. Stakeholders will need to agree to their roles, the decision-making space, as well as clearly defined decision methods and authorities. We recommend a two-part process.

The first part is a public engagement process. We recommend at least three public meetings: the first would introduce the process and explore issues. The second would focus on information sharing and explore solutions with agency specialists and other scientists to improve the condition of the sheep herd and its habitat. The last meeting would be to share the draft recommendations crafted by WGFD and derived from the collaborative process to seek feedback from the public before final submission to WGFD leadership and other institutions.

The second part is one intensive meeting internal to the WGFD to draft recommendations based on the public's deliberations in the collaborative process so far. This group should review the suggestions from the public, evaluate the suggestions based on technical and scientific information, regulatory requirements, and budget and staffing constraints to develop a series of recommended management actions for WGFD to systematically implement. This should include measures to monitor the herd to discover what works to improve the Whiskey Mountain bighorn sheep herd. The results of this meeting would be presented to the public in the third collaborative workshop for participants to provide feedback. Based on this feedback WGFD may make changes to the recommendations. The final result would be a collaboratively derived Whiskey Mountain bighorn sheep herd management/action plan.

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INTRODUCTION AND BACKGROUND

The Ruckelshaus Institute and the Purpose of this Assessment

In 2018, the Wyoming Game and Fish Department (WGFD) and the Wyoming Wild Sheep Foundation (WY-WSF) initiated this assessment regarding the feasibility of using a collaborative, science-based, stakeholder-driven process to address Whiskey Mountain bighorn sheep management. Both organizations requested assistance from the Ruckelshaus Institute to conduct a situation assessment.

The Ruckelshaus Institute, a division of the Haub School of Environment and Natural Resources at the University of Wyoming, advances the understanding and resolution of complex environmental and natural resources challenges and supports stakeholder-driven solutions to environmental challenges by communicating relevant research and promoting collaborative decision making. The Ruckelshaus Institute has experience and expertise in conducting stakeholder assessments, as well as convening and facilitating collaborative problem-solving processes.

The purpose of this stakeholder assessment is to provide detailed information about stakeholder perceptions of bighorn sheep issues, management and public participation. WGFD and WY-WSF are contemplating the potential development of a collaborative process to help develop local, science-driven options for bighorn sheep management. This assessment seeks to discover whether this is feasible. The assessment is based on information gathered from interviews with 22 stakeholders regarding their perspectives regarding this issue. Participants represented Federal and state government, private landowners, outfitters, hunters, conservation organizations, and community members.

Situation assessments are not used to gather votes, but to discover the way people think about an issue. A situation assessment does not explore the quantity of similar perspectives but does explore the diversity of perspectives regarding a particular subject. Whether something is said 20 times or once is unimportant because the knowledge that even one stakeholder holds a certain belief is important to finding out, in this case, whether there are options that can be explored in relation to bighorn sheep management and whether a collaborative process to do so is possible.

Background

The Whiskey Mountain bighorn sheep herd encompasses hunt areas 8, 9, 10, and 23 and are resident around Whiskey Mountain, Arrow Mountain near the Shoshone National Forest and Dubois, Wyoming. The sheep are members of the species Rocky Mountain bighorn sheep (*Ovis Canadensis*), are named for their large, curled horns and have historically occupied areas in the U.S. and Canadian Rocky Mountains and in mountains in the northwestern United States.

The Whiskey Mountain bighorn sheep herd has struggled to recover from a catastrophic all-age die-off caused by pneumonia in 1991 causing an estimated 30% decline in the number of sheep in this herd. It is thought this herd was about 2,000 animals prior to this event. The management goal is 1,350 sheep and there are an estimated 700-800 sheep in this population today. They continue to languish below the desired population size primarily because lamb survival is very low due to the persistence of lamb pneumonia. In particular, recruitment has been alarmingly low each of the past 2 years. In addition, WGFD observed a change in bighorn sheep distribution and behavior on winter ranges the last three years.

Varieties of pneumonia are known to affect the numbers of lambs that survive their first year (lamb recruitment), not only in this herd but in others as well. Other herds however are known to recover in number after a while, which has not happened with the Whiskey Mountain herd. WGFD and WY-WSF are well aware of the importance of this iconic herd to the Dubois area, to Wyoming and nationally. When this herd was thriving, it was the herd from which sheep were transplanted to start bighorn sheep herds in other areas in Wyoming and other states. This herd has in many ways become an important symbol of Dubois for residents and is culturally and historically important to the Eastern Shoshone people.

WGFD and WY-WSF are well aware of the precarious situation regarding this herd and after years of attempts to address this decline it is clear a different approach needs to be considered. This includes enlisting and engaging with everyone interested to capitalize on local knowledge and the expertise of sheep biologist/researchers, increase capacity to conduct needed research and management, and to develop acceptance of known needed work and perhaps new/novel approaches and ideas to address these critical issues.

As a result, the two organizations asked the Ruckelshaus Institute to conduct this situation assessment to ensure the knowledge and thoughts of stakeholders are known from the outset, as well as their thoughts on what factors will contribute to a successful collaborative process. This report will contribute to a common understanding of the issues that stakeholders perceive to play a role in relation to this bighorn sheep herd, and will help to design a collaborative process in a manner that participants feel will contribute to improving the well-being of the Whiskey Mountain bighorn sheep herd.

DESCRIPTION OF THE ASSESSMENT PROCESS AND METHODOLOGY

This situation assessment was initiated with a review of background information and reports obtained from WGFD, the WY-WSF, the National Bighorn Sheep Center and others. This review of background information provided the author with a basic understanding of the issues and the stakeholders involved, enough to begin the formulation of an assessment strategy.

The assessment conducted by the Ruckelshaus Institute is based on data gathered from telephone interviews of stakeholders in the county and communities where Whiskey Mountain is located, and other stakeholders within and outside the region who have a demonstrated interest in Whiskey Mountain bighorn sheep management issues. With the assistance of members of the above organizations, the author compiled a list of stakeholder types and created a list of individuals to interview in each stakeholder type with adequate redundancy built in to ensure most stakeholder types would be included in the interview. The resulting 40 individuals were sent emails with information regarding this situation assessment. There were 22 participants who responded and with whom interviews were scheduled. Of the 9 stakeholder types, the 22 respondents represented 8 stakeholder types (see Table 1). Elected officials were the only stakeholder type that did not respond to the invitation to participate. Each responding participant was sent an Implied Consent Form which explained that responses will remain anonymous and the low level of risk involved in this assessment. Jessica Western, the Principal Investigator on this project, conducted the 22 interviews in November and December of 2018. Each interview took an average of 30 minutes. Table 1 provides a summary of the stakeholder groups and the number of respondents belonging to each group. A list of the individuals interviewed for this assessment is contained in Appendix A.

Table 1. Attributes of Stakeholder Participants

Profession		Gender	
Federal government employee	5	Female	5
State government employee	6	Male	17
Local Business	1		
Livestock industry	2		
Environmental/Conservation	2		
Education	4		
Outfitter/Hunter	2		
General public	2		

The assessment consisted of 10 open-ended questions designed to elicit information about bighorn sheep management, their interests related to this herd, their assessment of the potential for a collaborative process, and logistical details necessary to engage in a collaborative process. The results were compiled and analyzed to discover whether there were any themes that emerged from these interviews in relation to both bighorn sheep management and to a possible collaborative process. A number of significant themes resulted for each question, which are described in the “Findings” section below. These results provide a cross-section of respondents’ views and are meant to convey the range of positions relevant to the bighorn sheep herd on Whiskey Mountain. This method was not intended to discover the majority opinion or predict the points of commonality that would result in a successfully negotiated outcome. Rather, this method focused on identifying the significant issues and determining the possibility for a collaborative process.

FINDINGS

Perceptions Regarding Bighorn Sheep Management and Collaboration

We have compiled the various types of responses to each question below. The 22 respondents generally had a lot to say on an issue that was clearly very important to them and there was a wide diversity of opinions, but also a considerable amount of commonality. In order for the reader to have a clear understanding of this diversity and commonality among perspectives, this section is inclusive, and therefore lengthy, for the sake of transparency, inclusiveness and clarity.

1. What are the issues in your mind in relation to the Whiskey Mountain big horn sheep herd?

The most commonly voiced concerns were related to low lamb recruitment and disease. Respondents seemed very aware and worried about the low numbers of lambs born and the low numbers of lambs that survive. An associated concern was disease pathogens, especially related to pneumonia, which are perceived to be one of the main causes of low survival rates among lambs. Another frequently mentioned concern was in relation to both summer and winter ranges. Summer ranges are perceived to be instrumental to maternal sheep health and therefore an important contribution to lamb nutrition. Respondents are concerned that lamb recruitment is threatened if female sheep do not have enough nutrition, and the right type of nutrition. Climate change was mentioned as a contributing factor to declining habitat conditions. When discussing winter range, a number of respondents made the connection to predation. These respondents were concerned that e.g. wolf predation and mere presence would chase the sheep to rockier areas with less nutrition, again decreasing lamb survival. When predation came up, respondents mentioned predation by wolves, coyotes and mountain lions especially. Some respondents questioned the role of predation in the ability of this sheep herd to thrive without being convinced this was a meaningful factor, others felt very sure that wolves and mountain lions are a major attribute to declining sheep herd numbers.

There were a number of other issues on respondents' minds. One was the concern that roads were being closed and therefore the lack of people could not help to keep wolves and poachers away. Another concern was that the herd was being overmanaged and stressed by repeated chases and

captures to either research the animals or transplant them. Lastly, a number of respondents appeared aware that there are many questions surrounding this herd. One of the questions was why this particular herd appears to be more susceptible to disease than other herds, and/or is less able to rebound after a disease has made inroads in herd numbers. These participants were also well aware that while they think the public is generally understanding that there are unanswered questions, there is also rising frustration with what is perceived to be a lack of action and/or information about bighorn sheep efforts in this area. There was also a concern that the public will focus on one cause which may not reflect the reality of complexity and intermingling causes.

2. If there was no effort made to address these issues, what do you think would happen?

One respondent answered: “I think we would lose the population”, which represented one dominant response. Another respondent spoke for a number of other respondents with: “I think we will continue to see a decline”. The reasons mentioned for this bleak outlook included disease, predation, intrusive research methods, and a herd that is getting older with limited ability to reproduce and/or a combination of these factors. All respondents expressed the opinion that to do nothing would be “irresponsible” with possibly “heartbreaking” results. When answering this question, many respondents explained the value of this herd to them as residents, hunters, wildlife aficionados and business owners. The responses indicate a strong cultural, emotional and economic link between Dubois and Fremont County residents and this herd. Another fear was that the focus on one single cause would blind the public to the complexity of problems, and therefore create a barrier to improving herd and habitat conditions using multiple approaches.

3. Would you be willing to participate in a collaborative process to learn more about these issues and work with WGFD to find solutions and implement them?

All respondents responded with a resounding “yes” or “absolutely”. One condition that was raised was: “but only if the WGFD is willing to listen and take our guidance”.

4. Why?

The interests that respondents articulated in the Whiskey Mountain bighorn sheep range were wide ranging:

- The economic benefit of this herd to the town of Dubois and a variety of businesses.

- The biodiversity value of having wild sheep on the landscape.
- The importance of retaining a wild sheep herd that has historically always been perceived to be in this area.
- The cultural value of the bighorn sheep to the Eastern Shoshone people and to Wyoming.
- Spiritual value as expressed by one person as “This herd is the core of me.....there is no spirit in this place without the Whiskey Basin herd”.
- The recreational value to hunters, photographers and other recreationists.
- The aesthetic value of seeing bighorn sheep.
- The intrinsic value of having healthy bighorn sheep herds and the ethical demand of humans to keep this herd from declining.
- The value of ensuring the herd can be enjoyed by future generations.

5. What would be the best possible outcome of this process after a year?

Most respondents wanted to see one or some of the following:

1. The chance to learn from one another and from scientists.
2. Explore what is not known and the questions that remain largely unknown.
3. Create a plan that consists of a list of actions based on this knowledge to improve herd conditions.
4. Ongoing communication with all stakeholders to receive input and share information.

Other hopes included “total elimination of predators” and “more lambs on the ground”.

6. What would be the best possible outcome of this process after ten years?

The dominant response was represented by one response: “Fat, robust moms and healthy lambs on the ground”, i.e. the hope that there is a sustainable herd size, not too many to outgrow the habitat, but enough to ensure a viable and larger herd. A related response from many was the need to ensure stakeholders learn about the complexity surrounding the causes for a decreasing bighorn sheep herd, are involved in finding solutions, and support resulting management actions. Key to achieving this in the minds of respondents was the need to find ways to decrease the prevalence of disease and improve the numbers of lambs to ewes. The role of scientists and implementing

solutions collaboratively were mentioned as tools to achieve this. Respondents also suggested trying new ideas and putting a focus on summer range conditions.

7. What would be the worst possible outcome of this process?

The dominant concern of respondents voiced here was: “That we still lose the herd and that we can’t figure it out” or “Sheepwise, that no matter what we do the herd keeps declining”.

Other responses included:

- “More friction in Dubois, disagreements between stakeholders, end up with more discord than agreement”.
- “The naysayers who blame anything wrong on anybody else”.
- “We are compelled to come to the conclusion that there is no solution. We give up.”
- “Getting in contention with stakeholders what the primary drivers are. I think some are latched on the idea of predation and I don’t think that’s been gamed out completely”.
- On a more positive note: “People aren’t disenfranchised by the process, that they feel they have really been involved and been engaged.....Whether people are happy with it is another piece but at least there is clarity about how the decision was made”.

The underlying fears appeared to be that there were no answers to help sheep numbers improve, that actions were not implemented, or that stakeholders did not participate with an open mind.

8. What factors need to be in place for this process to be effective?

This question elicited a wealth of feedback that is helpful for the design of a collaborative process.

The main points were:

- Understandable and robust scientific information for the public to use in their deliberations and to enable them to find solutions that are grounded in as much certainty as possible.
- Scientific and technical expertise related to habitat conditions, bighorn sheep diseases and pathogens, predation population numbers and behavior.
- Commitment by people to keep working together to explore technical and scientific information and find solutions, even if there is disagreement.

- In return, a commitment from WGFD and federal agencies to use the recommendations received from these collaborative deliberations and either implement them or provide reasons why they cannot be implemented.
- Strong and consistent facilitation and/or a strong, knowledgeable chair person, or both.
- Clearly defined goals and objectives.
- A number of respondents felt that there should be a group “to discuss the issues” and “have open public meetings where the public can attend and offer comments”.
- Another option suggested was “a stakeholder committee that would interface with a core team or a technical team”.
- Agency members should “try to get around agency boundaries, not worry about the agency but worry about the sheep”.
- Funding to implement solutions.
- A research depository “maybe with the University” so data could be accessed by researchers and the public “to trigger ideas that they haven’t come up with”.
- A document that would bind the WGFD to listen to the public because in the past the agency was perceived to convene a collaborative effort and tell the group “after a month that it was no longer needed. They always think they know best”.
- Additionally, “while Game and Fish is leading this, some ownership needs to be shared with the people interviewed, the community at large, the experts involved. This needs to be shared leadership with clear roles for what people need to accomplish”.

9. Who needs to be at the table?

Most commonly mentioned were:

- Wyoming Game and Fish Department
- Wyoming Wild Sheep Foundation
- National Bighorn Sheep Interpretive Center
- Towns people “who are interested, who are bifurcated between granola and rifle ‘n pickup types”.
- Federal agencies.

- Scientists from the University of Wyoming and other organizations, states and Canada related to wildlife, veterinary and habitat ecological sciences.
- Outfitters
- Hunters
- Photographers
- NGO's who have an interest and funding to support collaborative outcomes.

Other suggestions were:

- Bighorn Restoration Group
- The Eastern Shoshone and Northern Arapahoe peoples.
- State and federal legislators.
- Generally, the people reached out to in this assessment.

10. Is there anything else you would like to say at this initial stage of the process?

Most participants felt the questions had offered them the chance to provide the feedback and information they wanted to provide. Last remaining thoughts covered the following:

- Expressions of love for sheep and wildlife, and articulation of the importance of the Whiskey Mountain bighorn sheep herd.
- A desire to ensure that a collaborative process is sincere, and to let people know how important they are to it and the future of these sheep.
- Gratitude that this assessment was taking place and hope that a collaborative process will bring people together and find solutions for the herd.
- Reiteration of the importance of including local first nation people.
- The importance of open mindedness for a collaborative process to be successful.
- On the one hand distrust of Wyoming Game and Fish Department, on the other the certainty that the agency cares and is working on this subject.
- Finally, the hope that “if we can get action-oriented steps that the public can be engaged with, then we could have a really productive process. We need long term solutions”.

DISCUSSION

When assessing whether a collaborative process is appropriate for a particular issue, there are a number of questions that must be addressed. In determining answers to these questions, the analyst can begin to outline the dynamics of the conflict, which will in turn help determine the current potential for collaboration as well as highlight what potential barriers to a successful collaboration might exist. These questions are outlined below, along with the conclusions the Ruckelshaus Institute has drawn regarding collaboration related to bighorn sheep management on Whiskey Mountain.

- *Are the issues clear?*

Yes, the issues underlying the Whiskey Mountain conflict are clearly defined and seemingly well understood by the majority of the interviewed stakeholders.

- *Is the timing appropriate?*

There is a clear sense of urgency expressed by the stakeholders that indicates the issues are ripe for discussion and the stakeholders are eager to find a solution. There are several incentives for stakeholders to be interested in a solution-seeking process:

- To ensure that the Whiskey Mountain bighorn sheep herd increases in number and becomes a self-sustaining and resilient herd.
- To improve economic opportunities in the Dubois area related to the bighorn sheep.
- To ensure that this Dubois and Eastern Shoshone icon remains on the landscape in health and in the future.
- To take advantage of the interest this situation assessment has created in an inclusive process that creates real progress for all stakeholders.
- To produce action items that are supported by the public.

- *Are the issues negotiable?*

No better alternatives to negotiated outcomes (BATNA) surfaced in the course of this assessment. No party has expressed a desire to use any other way to meet their interests other than a collaborative process. The issues are negotiable if the right process is used to explore the complex information related to this issue, the process is transparent and the recommendations

that result from a collaborative process are either implemented or addressed to explain why they can't be implemented. The one aspect in this discourse that will challenge the ability of participants to negotiate is whether they are interested in hearing all sides while representing their interests, or whether they are positional on one point, e.g. predation. Any process would need to take place with the clear understanding that WGFD and land managers are the final decision makers. However, if a form of interest-based consensus building is used that allows all stakeholder types to be represented, that ensures ongoing two-way communication with the public at large, and a sincere commitment of decision makers to use the products of a collaborative effort, it appears the issues will become negotiable.

- *Can the participants be identified? Will they participate in good faith?*

Interested and invested stakeholders are easily identified, and many have expressed willingness to participate in a dialogue on how the Whiskey Mountain bighorn sheep should be managed.

- *What is the level of trust among participants?*

The majority of respondents expressed trust in WGFD, with a few voicing less trust or no trust. No distrust or concerns were recorded regarding any other agencies, organizations or individuals. It is clear that the National Bighorn Interpretive Center and the Wyoming Wild Sheep Foundation are held in high regard.

- *What is the level of contention?*

While there does not appear to be a high level of contention between stakeholders or even stakeholder groups, where the subject of predation is raised there is concern that environmental organizations will “interfere” because they are “compassionate” and are perceived not to “work from facts”. Among those respondents who attributed some cause of low lamb recruitment to predators, this was a worry. Most respondents felt that environmental organizations should be included and also suggested other stakeholders with whom they disagreed on some issues for inclusion.

- *Is there political support for resolution?*

There is support from WGFD, the Bureau of Land Management and the USDA Forest Service for a collaborative process to find resolution.

- *Are resources available to support collaboration?*

Conversations with the WGFD and WY-WSF have indicated there may be sufficient support within the organizations to support a collaborative process. Additionally, the National Bighorn Sheep Interpretive Center is willing to provide logistical and communication support.

- *Are key decision makers willing to use the process?*

Key decision makers have expressed an interest and willingness to engage in a collaborative process to seek solutions regarding bighorn sheep management on Whiskey Mountain. Whether key decision makers would be willing to implement collaborative outcomes and use an adaptive management approach to continually monitor and improve conditions would need to be confirmed between the WGFD, federal and state land managers and the Wind River Reservation.

- *What are key issues that need to be addressed in a collaborative process?*

These include:

- Create a common understanding of what is known and what is less or not known.
- Based on that common understanding draft options for recommendations.
- Finalize recommendations to WGFD and other agencies that the collaborative decides may improve the health and resilience of the bighorn sheep herd.

CONCLUSIONS AND RECOMMENDATIONS

There are a number of options if WGFD decides to proceed with a collaborative process. In order for the process to have the best likelihood of success it would need to meet the following criteria:

1. It would need to build on what has already accomplished. The work of the Technical Committee was mentioned by a number of respondents and the initiatives and findings of that Committee could form the technical foundation on which to build. Additionally, there appears much to learn from other states and even other countries and finding a way to explore what has been discovered there will also be helpful. Respondents mentioned previous research e.g. regarding mineral deficiencies and metals in bighorn sheep which should be included.
2. A process that is efficient. Considering the complexity of the issues at hand, this does not equal a quick process. But a process that builds on what has already been accomplished, allows all stakeholders to have meaningful and equal input, a clear decision-making space with firm guidelines and sidebars will provide stakeholders with the opportunity to learn and provide recommendations regarding actions to take.
3. As mentioned above, inclusiveness is critical. This can be done while ensuring effectiveness or efficiency.
4. Transparency. The material that stakeholders will be using in their deliberations will need to be available to other interested individuals who cannot attend the meetings. It will also be incumbent on all stakeholders to share their interests and information when attending meetings.
5. A clear understanding of the decision-making process. The WGFD and other agencies are the decision-makers, and it will need to be made clear how these agencies will use collaborative recommendations. Ideally, decision makers will report back in person to stakeholders what recommendations can be used or not used, and the reasons for those decisions.
6. As a way to address points of uncertainty in the science, a process that allows stakeholders to use adaptive management and monitoring to keep learning what is meeting stakeholders' interests over time, what is not and explore new options if necessary.

Options for Collaborative Processes

There are several options in terms of types of collaborative processes. The options are:

Host Unbounded Public Meetings Convened by Wyoming Game and Fish Department.

The WGFD could convene public meetings that are open to the public. Considering the high level of technical and scientific information that will need to be absorbed to come up with meaningful recommendations, this may be too big of a demand from the public. Open public meetings can be organized using ground rules, break out groups, third party facilitation and a website where the agenda and results of each meeting are posted. Such meetings have been convened successfully in the Wyoming Range and the Platte Valley regarding contentious mule deer issues. The meetings were extremely productive and contributed to regaining trust and sustained public engagement for the Wyoming Game and Fish Commission. Although there was much learning that took place during these open, unbounded meetings, it was not nearly to the level of complexity that appears necessary to be absorbed in relation to this bighorn sheep herd.

Formulate a Working Group/Technical Advisory Team Convened by a neutral party

Once formed, a working group/technical advisory committee would:

- Be presented with and digest complex technical and scientific data related to the health of the Whiskey Mountain bighorn sheep herd.
- Based on that data, create options that the Team thinks can improve conditions and the health of these sheep.
- Based on the Team's work and input from the general public, craft recommendations addressing bighorn sheep and sheep habitat management to decision makers.
- Continue working with decision makers to review new information and adapt Whiskey mountain bighorn sheep management strategies.
- Possibly create a Whiskey Mountain Bighorn Sheep Management Plan.

Working Groups are used as an integral part of a decision-making process but they do not have decision-making authority. They may influence agency policy but they do not have the authority to change policies mandated by State or Federal law. They can be set up formally with a charter (Sage

Grouse Working Group) or less formally using ground rules and a collaborative process among the members (Platte Valley Habitat Partnership).

Advantages here are that a working group can set the agenda/topics/issues of meetings, and the neutral party can ensure meetings are balanced with participants assigned to specific seats, but meetings are still open to a broader public. A working group can host public meetings and ensure there is time for public comments and input at each meeting. The selected working group members need to be willing and able to work collaboratively and have authority with their local interest groups to ‘make decisions’ and move the issue forward. Working group members would need to be able to commit time and resources to this effort.

Collaborative Learning Approaches

As a public participation or planning team approach, collaborative learning encourages people to learn actively, to think systemically, and to learn from one another about a particular problem situation. Throughout the process, participants talk with and learn from one another in groups of various sizes. Within these discussions, active listening, questioning, and argument are respected. People clarify and refine their improvements through dialogue. The initial objective of this process would not be to reach agreement on a management strategy, but rather to evaluate available information and discuss its implications. The process of seeking out and evaluating information may result in a collaborative agreement seeking process where stakeholders discover potential areas of agreement regarding bighorn sheep management on Whiskey Mountain. However the initial prime purpose of a collaborative learning approach is for stakeholders to collaboratively learn and create a common understanding the issues surrounding this herd.

Recommendations

The Ruckelshaus Institute recommends a two-step process that combines two approaches mentioned above:

1. Offer three public meetings that are unbounded, facilitated by a neutral party and open to everyone with clear guidelines, objectives and process. These meetings would be hosted by the WGFD. The purposes of these three meetings would be to:
 - a) Present this situation assessment and initial information regarding the status and history of the Whiskey Mountain bighorn sheep herd. The outcome would be a list of the issues participants feel need to be addressed to tackle the decline of this herd.
 - b) After the Science Workshop's public meeting in March, discuss the scientific information in depth with participants and explore possible action items.
 - c) After the internal meeting has taken place where WGFD agency members and experts draft a plan containing action items based on the public input received, scientific information and other criteria, present this draft management plan to the public for feedback.
2. Convene a meeting for WGFD to review the most recent scientific information and to review the information and advice provided by collaboration participants and based on criteria such as staff resources, budgets, scientific information to create a draft plan containing action items to improve the condition of the Whiskey Mountain bighorn sheep herd and its habitat. A neutral facilitator would design the process with WGFD and facilitate meetings. Depending on the number of people involved and the amount of material to be reviewed the meeting would probably take a whole day, possibly two days. The resulting draft plan would then have to be compiled. After the draft plan has been compiled, it would be presented in the third collaborative workshop for public review and discussion. After that an implementation plan and an adaptive management protocol could be additional products.

Rationale for Recommendations

In consensus building approaches, we make a distinction between place-based negotiation and issue-based negotiation. Although this bighorn sheep herd is tied to a particular place, Whiskey Mountain, all respondents identified the issues related to the herd as needing unraveling in order to find

solutions. In this case, the issues are very complex and of a highly scientific nature. This assessment indicates that the people in this place seem united in their desire to see a larger, healthier bighorn sheep herd with lambs growing through their first year and well-fed moms. The complexity comes into the issues related to the herd, which will require a deep-dive into scientific and other information. A collaborative learning process alone will not accommodate a deep-dive into technical information which will take more than three meetings of three hours each. An additional time commitment will be required both in terms of meeting time and work time to coalesce the information received into meaningful action items. This will ensure that substantive exploration and deliberation takes place of information received from the public and scientists, while also assuring full transparency and accountability back to stakeholders.

WGFD and WY-WSF have already planned an expert panel to take place in Dubois during a day in March with a public meeting with scientists in the evening. This will allow a scientific deep dive by experts into the conditions related to the Whiskey Mountain bighorn sheep herd. In addition, we recommend an internal meeting within WGFD that will use that information, as well as the input received from the public, regulatory, budgetary and other information to draft a management/action plan. This plan will then be presented to the public in the third public meeting.

A combined process such as this will require money, time, patience and commitment. It will not be easy and stakeholders will not agree on all aspects. There is no guarantee that it will work. That will be dependent on the stakeholders themselves. If landowners, outfitters, Dubois and Fremont County residents and business owners, State and Federal institutions and non-governmental organizations are willing to engage in a process such as is described, we believe this will increase the probability that all possible options to improve the bighorn sheep herd are put on the table and will therefore increase the chances for improving this iconic bighorn sheep herd's growth and sustainability.

APPENDIX A – LIST OF COMPLETED INTERVIEWS

Federal Agencies

Leah Yandow, Bureau of Land Management
Sue Oberlie (retired) Bureau of Land Management
Pat Hnilicka, US Fish and Wildlife Service
Mark Hinshberger, (retired) US Forest Service
Joe Flower, US Forest Service

State Agencies

Gary Butler, (retired) *WGFD*
Daryl Lutz, *WGFD*
Greg Anderson, *WGFD*
Brian Baker, *WGFD*
Brian Nesvik, *WGFD*

County and Local Agencies

Reg Phillips, *Crowheart Conservation District*

Non-Profit Organizations

Steve Kilpatrick, *WY Wild Sheep Foundation*
Joni Miller, *WY Wild Sheep Foundation*
Lora Engleman, *National Bighorn Sheep Interpretive Association (NBSIA)*
Sara Domek, *NBSIA*
Bruce Thompson (past) *NBSIA*
Bill Sincavage, *NBSIA*

Agriculture/Guest Ranch

Joe Boardman, *Torrey Lake Ranch*

Outfitter

Fritz Meyer
Blake Chamley

Private Sector

Lynn Stewart
Renee Suda
Laney Hicks

APPENDIX B – LETTER OF INTRODUCTION

October 19, 2018

Good Morning,

At the behest of the Wyoming Game and Fish Department (WGFD) and the Wyoming Wild Sheep Foundation I am inviting you to participate in an interview as part of the situation assessment we are conducting regarding the Whiskey Mountain bighorn sheep herd. I am a social scientist and facilitator at the Ruckelshaus Institute at the University of Wyoming and we are funded by these two entities to explore stakeholders' opinions regarding the condition and management of the Whiskey Mountain bighorn sheep herd. We will use this situation assessment to create a collaboration process in 2019 in which we hope you will participate. In this process we will explore the subjects raised by stakeholders and explore information that may benefit this important big horn sheep herd. Please see attached more information from WGFD about this assessment and the collaboration process that will follow.

If you are willing to participate, please simply respond to this email. Participation involves a phone interview of approximately 30 minutes by phone. I will ask you a series of open-ended questions to learn your perspectives regarding the Whiskey Mountain big horn sheep herd, and regarding factors that will facilitate a successful collaborative process.

Your participation in this study would be greatly valued. We are hoping to interview representatives of all local stakeholder groups who are interested in this herd. All interviews are confidential and no information will be attributed to any person in the final report. If you agree, we will have a Consent Form we will ask you to read that explains more information for you. Please let us know by October 28, 2018:

- a) If you are interested in participating in this assessment and
- b) What days and times you are available for a phone interview
- c) The number where we will be able to reach you for the interview.

We are happy to answer any questions you have in the meantime so please don't hesitate to let me know in your email.

Sincerely,

Jessica Western
Ruckelshaus Institute
Haub School of Environment and Natural Resources
University of Wyoming

APPENDIX C – INTERVIEW PROTOCOL

The Wyoming Game and Fish Department and Wyoming Wild Sheep Foundation are seeking assistance on understanding current stakeholder perceptions on the issues and public participation process around Whiskey Mountain bighorn sheep management. We are gathering information from a wide range of interested parties to better understand their perceptions of the issues and to understand whether and how they are willing to work together. Have you read the Implied Consent Form I sent you? (Yes) Thank you then I will start the interview. (No) Please take a few minutes to go over it and make sure you don't have questions.

Information gathered from this interview will be compiled with all the other interviews and be included in a written report to the WGFD and WY-WSF.

Questionnaire regarding the Whiskey Mountain Big Horn Sheep Collaborative Learning Process

1. What are the issues that in your mind limit the well-being of the Whiskey Mountain big horn sheep herd? (Helps joint problem statement formation).
2. If there was no effort made to address these issues, what do you think would happen?
3. Would you be willing to participate in a collaborative process to learn more about these issues and work with WGFD to find solutions and implement them?
4. Why?
5. What would be the best possible outcome of this process after a year?
6. Ten years?
7. What would be the worst possible outcome of this process?
8. What factors need to be in place for this process to be effective?
9. Who needs to be at the table?
10. Is there anything else you would like to say at this initial stage of the process?

APPENDIX D – STAKEHOLDER ASSESSMENT IMPLIED CONSENT FORM

University of Wyoming

Whiskey Mountain Bighorn Sheep Situation Assessment

Implied Consent Form

I. General purpose of the study:

The purpose of this Stakeholder Assessment is to gain an understanding of the perspectives of individuals who are interested in the Whiskey Mountain bighorn sheep herd. These interviews are part of a collaborative process that will be conducted with funding from the Wyoming Game and Fish Department and the Wyoming Wild Sheep Foundation to assist decision makers in managing this bighorn sheep herd.

II. Procedure:

This study will be conducted through individual interviews conducted by Jessica Western of the Ruckelshaus Institute at the University of Wyoming. Participants will be asked their opinions regarding the condition and management of the Whiskey Mountain Bighorn Sheep herd and the factors that will enable a successful collaborative process in 2019. This should take approximately 30 minutes per interview. Interviews will be recorded.

III. Disclosure of risks

Risks associated with this study are minimal. The interview is completely voluntary and can be terminated at any point. Questions solely pertain to opinions regarding this herd and the collaborative process, and responses are kept confidential. There is a slight risk to participants if this confidentiality were to be breached. Ruckelshaus Institute will take measures to safeguard the confidentiality of each participant in order to protect against this risk.

IV. Description of benefits:

The primary benefit of participating in this study is the opportunity for participants to share their opinions on the bighorn sheep and help in the design of an effective collaborative process. There are no other forms of compensation associated with this study.

V. Confidentiality:

Participants will not be identified by name, appearance, or nature of data in any report or material generated from the interviews. Tape recordings and transcriptions of the interviews will be identified by a number only. The Ruckelshaus Institute will have a secured list with these numbers attached to participant names. Anonymous interview records will be kept within the Ruckelshaus Institute for 3 years. Only Ruckelshaus Institute staff will have access to these records and the list of participants. There is always a risk that these records could be accessed by non-authorized personnel. This risk is being mitigated through security measures such as password-secured files and destruction of the content after three years. Results from these interviews will not be used to support other studies.

VI. Freedom of consent:

The research presents no more than minimal risk of harm to subjects and involves no procedures for which written consent is normally required outside of the research context. Participation is voluntary, refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled, and you may discontinue participation at any time. If you would like to withdraw from this study prior to the interview, please contact Jessica Western (307) 766 5048 or jessica.western@uwyo.edu and cancel the interview. If for any reason you choose to withdraw your participation during or after the interview, please communicate this withdrawal to Ruckelshaus Institute staff. Ruckelshaus Institute will then destroy any record of the interview.

VII. Questions about the research:

If you have any questions about the study, please contact Jessica Western (307) 766 5048 or jessica.western@uwyo.edu. If you have questions about your rights as a research subject, please contact the University of Wyoming Institutional Research Board Administrator at 307-766-5320.

APPENDIX E – WYOMING GAME AND FISH DEPARTMENT INFORMATION SENT WITH EMAIL INVITATION.

Whiskey Mountain Bighorn Sheep – *Understanding and Solutions through Collaboration*

What's going on?

The Wyoming Game and Fish Department (WGFD) in partnership with the Wyoming Wild Sheep Foundation, the National Bighorn Sheep Interpretive Center, and the University of Wyoming's Ruckelshaus Institute is engaging in a public involvement process to explore management concerns, issues, and opportunities for the Whiskey Mountain Bighorn Sheep herd. The Whiskey Mountain bighorn sheep herd was once one of the largest and most nationally recognized herds in the nation and it has been declining since an all age die-off in the early 1990's. The herd continues to stay below the desired population size primarily because lamb survival is very low. At one time there were an estimated 2,500 sheep in this population; today there are about 750. WGFD needs your insight and ideas how to best manage this herd.

What is this?

This is an opportunity for ALL who are interested or concerned about these bighorn sheep. This process will provide an environment to share information and ideas to better understand the issues, challenges, and opportunities we face to, at minimum, arrest population decline in the Whiskey Mountain herd.

Why do this?

WGFD simply doesn't have all the answers to turn this important bighorn sheep population around. There is much to be learned about how to best address this decline and perhaps implement new or different management strategies and projects to attempt to arrest and reverse this trend. To do this, we must consider a different approach that includes all who are interested and passionate about this herd.

What does it look like?

This approach will include a formal collaborative process and include people who care about and are knowledgeable about this herd. It will begin sometime later this summer and early fall with a "situation assessment" conducted by Jessica Western at the Ruckelshaus Institute that will include interviews with interested stakeholders which will help tailor the collaborative process. There will likely be 3 workshops all held in Dubois where we will WORK on specific subjects to share critical information, data, and ideas. We are also planning a Bighorn Sheep Summit to bring in "outside" experts from around the country to assist with charting a path forward.

When does this happen?

The situation assessment will be conducted and finished fall of 2018. The collaborative workshops will likely begin in January or February 2019 and conclude in late winter or early spring. The Summit will likely be held sometime in March 2019.

What are the expected outcomes?

Everyone involved will have a better understanding of the issues, challenges, and opportunities. Based on that understanding we will generate ideas and actionable items that can be addressed and/or implemented to hopefully improve conditions for this herd.

How do I get involved?

Everyone is “invited” and encouraged to participate in this process. WGFD and the National Bighorn Sheep Center will advertise the workshops and the summit in local newspapers and radio stations. For more information on how to be involved or if you have questions, please contact Daryl Lutz at 307-335-2616.