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Diverse perspectives on conservation conflict: livestock-grizzly conflict and broader social
changes across southwest Montana's ranching communities

by

Allegra Sundstrom

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Committee Approval

To the Graduate Faculty:

The members of the committee appointed to examine the thesis of ALLEGRA
SUNDSTROM find it satisfactory and recommend that it be accepted.

Dr. Morey Burnham,
Major Advisor

Dr. Darci Graves,
Committee Member

Dr. Donna Lybecker,
Graduate Faculty Representative

Dr. Matt Williamson,
Committee Member (BSU)

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Diverse perspectives on conservation conflict: livestock-grizzly conflict and broader social changes across southwest Montana's ranching communities

Thesis Abstract – Idaho State University (2023)

As grizzly bear populations expand across the rangelands of southwest Montana, conservationists promote conflict-reduction tools as ranchers and livestock are interacting with bears at higher rates. Ranching communities are simultaneously experiencing increased amenity migration and associated community cultural shifts that challenge ranchers' sense of belonging and sense of place. I used a symbolic meanings and sense of place approach to understand how ranching communities in southwest Montana perceive livestock-grizzly conflict in the context of changes to ranchers' broader social landscapes. After conducting interviews (n=29) and a Q-Sort activity (n=21) with community members, a Q-method factor analysis revealed three latent perspectives. Stakeholders make sense of conflict on the landscape, focusing on the social divide, institutions, and ecosystem resolution. These findings suggest that ranching communities' conceptualization of livestock-grizzly conflict is influenced by their shifting sense of belonging to a place and underlying symbolic meanings assigned to bears, conflict-reduction tools, and land.

Key Words: Livestock-Grizzly Conflict, Q-Method, Rural Restructuring, Conflict-Reduction Tools

Introduction

Conservationists have increasingly emphasized the adoption of livestock-grizzly conflict-reduction tools on ranching operations in an attempt to promote different ways of deterring negative interactions between livestock and grizzly bears on range landscapes. Despite many scientific studies that provide examples of tools successfully deterring predators, ranching communities have not incorporated conflict-reduction tools onto range landscapes at a very high rate (Khorozyan & Waltert, 2020). The low adoption rate indicates that whether or not people adopt these technologies is not solely based on the technologies' effectiveness. Social science literature has demonstrated how human behavior, including technology adoption, is influenced by the symbolic meanings people ascribe to tools, how tools fit into their sense of place, and how interpretations of social and environmental change or conflict happening on the landscape also influences stakeholders' sense of place (McLachlan, 2009; Devine-Wright, 2011; Redpath et al., 2013). Given this, it is likely that whether or not ranchers adopt conflict reduction tools is embedded in their perspectives on broader issues and debates related to human-grizzly conflict, including human-human interactions and conflicts about land-use, conservation, and cultural values. To adequately understand human and livestock conflict with grizzly bears and why ranchers adopt conflict-reduction tools, we need to consider the broader social factors that are contributing to these conflicts and influencing locals' perspectives on the matter (Hill, 2021; Jaicks, 2022). Doing so will allow us to better understand how ranching communities make sense of conflict, and we can then use those perceptions to create wide-ranging solutions that ensure that ranching communities and wildlife can share range landscapes and reduce conflict and make them more likely to use conflict-reduction tools.

In southwest Montana, rural ranching communities are experiencing an increasing grizzly presence, given they are geographically situated between the two largest grizzly bear recovery zones (Peck et al., 2017). At the same time, these rural ranching communities are experiencing an increasing human migration, and the socio-cultural changes that are associated with such a demographic shift (Gosnell et al., 2006). The U.S. Fish and Wildlife Service has a well-established goal to achieve connectivity of the two largest grizzly bear recovery zones in order to enhance genetic diversity of the bear population, and the connectivity of those two zones depends on the rangelands of southwest Montana. Initially, I set out to focus my thesis research on the social factors influencing ranchers' adoption of grizzly conflict-reduction tools because of their importance for achieving these connectivity goals. However, I conducted preliminary interviews with ranchers in southwest Montana to understand their perspectives on conflict-reduction efforts in their communities and documented that conflict-reduction tools were broadly interpreted by ranchers through their experiences and perspectives about broader social-ecological changes and conflicts on the landscape. When I asked about conflict-reduction efforts during our conversations, interviewees continuously linked them to other social conflicts, such as bear management and land-use policy, community relationships between newcomers and traditional ranching communities, and landscape changes. I recognized that before we can understand why ranchers adopt conflict-reduction tools, we first have to understand rancher's broad perspectives about conflict over grizzly bears.

A growing area of study acknowledges the connection between individuals' sense of belonging to a place and their interpretations of changes happening on the landscape, and how the combination of those factors shapes individuals' perspectives of and relationships with the environment. People often interpret objects, such as grizzly bears or conflict reduction-tools, as

representations of something other than the object themselves—an object’s symbolic meaning—and these underlying meanings are what humans use when we decide how to behave or interact with each other or the object (Blumer, 1969). For example, Scarce (1998) demonstrated that individuals living around Yellowstone National Park interpret bears, wolves, and endangered species in many ways, one of which is that they are symbolic of government control, and that these varying interpretations influence humans’ acceptance of these species on the landscape. The *sense of place* and *symbolic meanings* literatures acknowledge that individuals react to landscape development proposals, such as wind energy installations, based on the meanings they ascribe to the landscape, and the individual’s own sense of place and belonging, and how these interact with the individual’s interpretation of the development itself (McLachlan, 2009; Devine-Wright 2011). The meanings that people ascribe to the landscape, to grizzly bears, to conflict, and to conflict-reduction tools may also shift as the ecosystem changes and populations of endangered grizzly bears expand and increase (Buijs et al., 2012; Anderson et al., 2017). Additionally, broader changes to rural community structure can also influence the meanings people hold for the landscape and their sense of belonging (Batel & Devine-Wright, 2015). Because of this, the meanings rural people hold for grizzly bears and conflict-reduction tools are rooted in their sense of place and the meanings people hold for the landscape. In the context of broader social and physical landscape changes, it becomes imperative to assess how these meanings for land, place, and wildlife change, interact and influence one another in order to understand perspectives about livestock-grizzly conflict on the landscape. The diversity of potentially conflicting symbolic meanings for landscapes, livestock-grizzly conflict, and conflict-reduction tools may have a determining effect on ranchers’ tool adoption in southwest Montana

and may account for the divergence between tool effectiveness and tool adoption in ranch operations.

Using Q-Method, this study aimed to understand how sense of place and belonging, and other underlying symbolic meanings and interpretations of conflict in the context of broader social changes on the landscape, may influence how ranching communities perceive livestock-grizzly conflict. Gleaning this information from within ranching communities and understanding how these underlying social factors are interconnected enables me to understand how to best frame and incorporate conflict-reduction tools into ranching. In rural areas where interactions with grizzly bears are becoming more common, assessing and understanding the role that socio-cultural factors have on ranching communities' perspectives around livestock-grizzly conflict is key to creating pathways to reduce conflict. Simultaneously, rural communities are aging and have shifted away from traditional, extractive livelihoods, while newcomers are buying land in rural areas, which has continued in response to Covid-19, bringing in new cultural values and ideas for land and wildlife conservation (Nelson, 2002; Peiser & Hugel, 2022). These cultural shifts are some of the social factors that are encompassed within broader changes to the landscape that are influencing ranching communities' connection to the land and relationship with the environment. Ultimately, this understanding will improve conservation and coexistence efforts and reduce stress and other impacts of living among grizzly bears by addressing the full suite of challenges they face.

I find that ranching communities interpret conflict with grizzly bears as directly and indirectly connected to broader social changes happening on the landscape, and they take these changes into account when making sense of conflict-reduction. I argue that ranching communities often interpret increasing grizzly presence and livestock-grizzly conflict as

symbolic of the broader conflict associated with those changes on the landscape which are impacting communities' sense of place and ability/freedom to maintain their connection to the landscape as it used to be. Though ranching communities are portrayed and perceived as homogeneous in their ways of thinking, there are discrepancies in how this group makes sense of conflict, and therefore, how they make sense of conflict-reduction. The three factors we identified from the Q-Sort reveal perspectives about how livestock-grizzly conflict-reduction is situated within broader social changes happening upon the landscape. In this paper I focus on the three perspectives that southwest Montanans have in regards to livestock-grizzly conflict-reduction and how it is situated in broader social changes happening on the landscape. These three perspectives are particularly oriented around ways to protect senses of community, place, and belonging to allow ranching communities to either combat/correct or deal with landscape changes.

Conceptual Framework

Over the last 50 years, carnivore management and policy has caused species to have constantly shifting protections, often changing with each change of administration, and the hope of pleasing multiple parties has dwindled as bear populations have increased (van Eeden et al., 2021). Achieving spatial connectivity of the two largest grizzly recovery zones will promote the genetic connectivity that biologists strive for to conserve grizzly bear populations, but it will also likely continue to increase conflict between grizzlies, livestock, and people that share the lands in between those recovery zones (Sommers et al., 2010; Peck et al., 2017; Wells et al., 2019). In the rural western U.S., tensions continue to rise between people as conservation goals for bears clash with conservation goals for the ranching community, and relationships between humans and their environment are challenged, including their sense of place and sense of belonging (Chan et al., 2007; Hausmann et al., 2016).

Livestock-Grizzly Conflict-Reduction

Conflict-reduction tools are one technique used to combat human-carnivore conflict globally and in southwest Montana. Conflict-reduction efforts include financial compensation, as well as physical bear deterrents including electric fencing, livestock guardian dogs, range-riders, and carcass retrieval and carcass compost piles. Despite the funding from local groups and state wildlife managers, ranchers are still seemingly hesitant to adopt and implement conflict-reduction tools. In part, this may be because state and federal level conservation biologists have largely overlooked the multidimensional factors that influence conflict-reduction tool adoption. Wildlife managers and NGO officials throughout Montana often use the benefits of tools as selling points to convince ranchers to adopt them, but because the adoption of conflict-reduction tools is not universal across ranching communities it is vital to understand the broader range of

social factors that shape whether these tools are adopted or not (van Eeden et al., 2018). Human-wildlife conflicts are often presented as being centered on the impact of the species on humans or their livestock, but there is a growing acknowledgement that the origins of conflict “are linked to power relations, changing attitudes, and values that are rooted in social and cultural history” (Redpath et al., 2013). Thus, to understand why people adopt tools or not, we must first understand how these social factors influence how ranching communities understand and make sense of the conflict as a whole.

Landscape Change: Rural Restructuring and Cultural Shifts

To fully understand how people make sense of conflict between livestock and grizzlies we must assess underlying relationships and conflicts between groups of people across the rural West (Hill, 2021). Scholars have found that when landscape or environmental characteristics in and around a community change, individuals feel their senses of place, belonging, and community challenged, and these challenged feelings often underlie conflict on and over the landscape (Stedman, 2003; Stewart et al., 2004). For example, in Scandinavia, where cultural values promoting wolf conservation and wolf policy are contested, scholars have taken an approach to assess the symbolic meanings and representations of wolves as the landscape changes and there is contestation over who, or what, belongs (Figari & Skogen, 2011; Sjolander-Lindqvist, 2011). Figari and Skogen found that the meanings people assign to wolves are influenced by people’s cultural beliefs as well as their interactions with each other and with their environment, and these meanings influence how conflict is perceived across communities (2011). Further research has identified that wildlife managers who co-produce land and wildlife management decisions alongside communities can reduce and avoid conflicts between community groups because they are able to avoid misperceptions and better understand how

communities give value and meaning to wildlife. As others explain, conflict among community groups about goals for land-use and wildlife management “may be the result of imposed [landscape] changes, often unrelated to local identities” to which researchers and conservationists would be unaware of if decisions are produced without community involvement (Hausmann et al., 2016, 7; see also Chan et al., 2007; Wilmer, 2018). In many western states, exurban expansion and amenity migration has resulted in more people moving from urban to rural areas, and newcomer rural residents bring along socio-cultural values and values for land-use that clash with traditional rural values. Newcomers are often associated with intrinsic values for wildlife conservation, increased recreation land use, and having little connection to traditional, extractive livelihoods of the past (Gosnell et al., 2006). Because of this shift in identity and values, rural communities feel their sense of place threatened as rural landscapes are reenvisioned to match newcomers’ ideals (Wulforth, 2006; Abrams et al., 2012). In many rural areas, forms of rural gentrification have led to the increased displacement of long-term residents (Ghose, 2004). “Recognizing the central place of human-land relationships in both the economic and cultural changes taking place in the West is critical to understanding the rising atmosphere of discontent among many of the region’s residents” (Nelson, 2002, p. 907). Divergent visions for wildlife and land management - ideas of what used to be and what will be - are often a point of contention.

Symbolic Meanings

Symbolic interactionists contend that humans use symbols to define the world around them, thus when two people hold divergent meanings for an object their interaction will be representative of that difference. For symbolic interactionists, objects serve as symbols which humans use to communicate and the meanings humans derive from these communications contribute to how individuals create their realities (Berg & Lune, 2012). Thus, for them,

“meaning results from back-and-forth negotiation over a symbolic object” and often stems from widespread cultural values (Allan, 2013, p. 41). Consider wildlife: depending on the interactions an individual person has with wildlife and their broader cultural values, one person might interpret a wildlife sighting as representative of the freedom offered by the outdoors, whereas someone else might interpret wildlife as a threat to their community. These divergent meanings for wildlife stem from cultural values that establish what ought to be on the landscape, and function alongside the meanings endowed to land and other cultural icons, like grizzly bears, to influence ranchers’ understanding of conflict (Wilson, 1997). Similarly, individuals and communities will assign meaning to places and landscapes, often defending their identity and connection to that place through the process of social construction (Wulfhorst, 2006). As rural communities experience restructuring and cultural shifts, individuals’ contradictory symbolic meanings for land and conflict-reduction tools likely restrict land and wildlife-based conservation efforts across southwest Montana. Thus, a combined symbolic meanings and sense of place approach allowed me to assess the different symbolic meanings ranchers hold for tools, wildlife, and land, and how they influence individuals’ perspectives about conflict on the landscape.

The Landscape and a Competing Sense of Belonging to Place

Acknowledging that stakeholders can have contradictory meanings for landscapes, changes to community, and conflict, which may negatively impact decisions to adopt tools, applying a sense of place approach will provide a lens into how place meanings directly influence ranchers’ decisions to implement conflict-reduction tools on their operations. A person’s sense of place is rooted in their interpretations of and meanings for a place, based on their experiences with that place (Greider and Garkovich, 1994; Stedman, 2003). McLachlan

explains: “place is defined by Cresswell (2004), as a location with meaning. Such meaning may be closely linked to notions of identity and sense of belonging (Cresswell, 2004). It is unsurprising therefore that strong reactions may be encountered when something (e.g., a renewable energy development) is seen to threaten what that place means (Devine-Wright, 2009)” (2009, p. 5344). Ranching communities’ strong sense of place affects ranchers’ idea of who and what belongs on *their* rural landscapes, ultimately affecting how they perceive conflict, and whether ranchers choose to adapt to changes on shared landscapes (McLachlan, 2009; Anderson et al., 2017; Jenkins, 2018; Jaicks, 2022). As ranching communities experience change, via encroachment of wildlife and other humans, they must re-negotiate the meanings they’ve ascribed to their landscape. As landscape meanings are negotiated, so too are the meanings of wildlife and, thus, conflict and the associated conflict-reduction tools.

Study Site and Methods

Study Site

I conducted my project in southwest Montana, in the region located between the Bitterroot, Greater Yellowstone (GYE) and Northern Continental Divide (NCDE) recovery zones (Figure 1). Southwest Montana, and particularly the rangelands of southwest Montana, act as an important migration corridor for many wildlife species that travel from Yellowstone west to the Salmon-Challis range, or north into Glacier National Park, and beyond into B.C. and Alberta. This region of southwest Montana consists of ~40% private rangelands, suggesting that as bears migrate between the GYE and the NCDE the likelihood of grizzlies encountering and interacting with livestock increases, compared to landscapes that consist of a majority of public land (Graves et al., 2019). Individual bears have been recorded migrating around larger, populated towns, such as Helena and Butte, and many more bears have been recorded around towns that border the GYE, including the Centennial Valley and Island Park, Idaho (Peck et al., 2017). Since the GYE and NCDE are the only recovery zones with persistent grizzly bear populations—and federal managers have prioritized the connectivity of these two ecosystems to avoid habitat and genetic fragmentation—the species remains listed in all recovery zones, and the jurisdiction of the species remains in the hands of the federal USFWS, rather than state management agencies.



Figure 1. Grizzly bear recovery areas (outlined in black) and expected range distribution (overlaid in light blue) (USFWS)

Due to the expansiveness of southwest Montana, I conducted my research specifically in the region where ranchers have started to implement conflict-reduction tools. Conflict-reduction tools include electric fencing, livestock guardian dogs, carcass compost programs, financial compensation for depredations, and other tools that attempt to reduce depredations or maximize coexistence. Conflict-reduction tools are most often implemented by community NGOs or larger, statewide organizations focused on livestock or wildlife conservation, though they are occasionally funded by state wildlife agencies or government programs as well. I chose to conduct my research in four communities with different socio-economic makeups that are broadly representative of the region. The Madison Valley is experiencing relatively rapid gentrification, due to its proximity to Bozeman and West Yellowstone, whereas the Centennial Valley is still rooted in extractive livelihoods. The Centennial Valley is less developed than most of the surrounding Greater Yellowstone Ecosystem because it is off the highways and doesn't offer cell service, but the valley still experiences some tourism due to its proximity to Henry's Lake and Yellowstone National Park. The Blackfoot Valley is another valley experiencing

exurban expansion as a result of the growth occurring in and around Missoula. The Big Hole and Ruby Valleys receive some visitation by recreationists, mainly for fishing and hunting, but the urban influence is slower to impact those communities, since they are similar to the Centennial Valley. These rural communities have cultural histories rooted in extractive professions like logging and ranching, but many communities have experienced shifts away from those professions as the economy slowed down. Simultaneously, the beauty that the surrounding landscape has to offer has resulted in an increase in amenity migration and absentee ownership. Amenity migrants and newcomers are often associated with the environmentalist movement, wealth, and valuing landscapes for their recreation opportunities, as opposed to valuing livelihoods and working lands. These rural Montana communities are experiencing these cultural shifts, which challenge ranchers' sense of belonging and sense of place, at the same time as they are experiencing changes in their interactions with wildlife on the landscape.

Study Design

My overall study was designed to explore the complex perspectives that ranching communities in southwest Montana hold for livestock-grizzly conflict as a whole, in the context of broader social changes on the landscape to understand how different social factors shape those perspectives. By uncovering the underlying perspectives about conflict as a whole we will be better able to understand ranching communities' adoption or avoidance of grizzly conflict-reduction tools. To do this, I used a two-stage process. First, I conducted semi-structured interviews with participants to gather their perspectives on livestock-grizzly conflict, the tools used to reduce conflict, community relationships surrounding conflict and conflict-reduction, and other changes happening on the landscape. I next used the Q-method to reveal participants' "operant subjectivities" about livestock-grizzly conflict, conservation, and change on the

landscape (Watts & Stenner, 2005; Zabala et al., 2018). Scholars in conservation biology often use Q-methodology, a combined qualitative and quantitative method, to understand perceptions about management or conflict in the socio-environmental setting (Brown, 1980; Zabala et al., 2018). Q-methodology allows researchers to get a sense of stakeholders' perspectives and subjectivities. As a supplement to interviews, the process of Q-sorting asks participants to rank a set of statements in relation to one another (Figure 2). In a typical Likert-scale survey, the participant answers each question statement independently, thus the 'qualiquantilogical' task of ranking statements in relation to one another allows researchers to better understand how participants prioritize statements about a topic - in this case, the conflict on the landscape (Watts & Stenner, 2005).

Sampling Approach and Participants

To identify initial interviewees, I used newspapers and online resources to identify potential ranchers in my study communities. I also interviewed key informants with strong relationships in the community and professional connections to fellow ranchers who provided me with local contacts. Broadly, I sought to interview a range of people associated with the ranching community in my study area, though my primary focus was ranchers. I defined ranchers as people who manage or have their own cattle operation, ranging anywhere between 30 and 1200 head of cattle. Ranchers included people who had family ranches, but I did not interview ranch owners who live off site or second-home owners whose primary residence was based somewhere other than southwest Montana. Because I also wanted to understand the perspectives of other people on the range who work around livestock, but who may not necessarily own the operation, I also chose to interview rancher's family members, ranch managers, and range riders who have personal experiences with grizzly bears, or live in a very proximal area to neighbors who've

experienced an increase in grizzly bear presence. I also spoke with a few state and federal biologists, sociologists, psychologists, and conservation NGO employees and board members, all of whom had expertise in community-oriented conflict-reduction programs. Once the initial informants were identified and interviewed, I then used snowball sampling to identify additional contacts. I asked each participant to suggest two potential subjects – someone who shares their views and someone who may think differently – to ensure that I identified a diversity of perspectives on livestock-grizzly conflict, the tools used to reduce conflict, community relationships surrounding conflict and conflict-reduction and other changes happening on the landscape. Given the relatively small size of these communities, snowball sampling aided in keeping my sample limited to local ranchers. Overall, I conducted 29 interviews (n=29) with four biologists, three social researchers, four range-riders, one ranch manager, two NGO board members, and 15 ranchers. Many of my interviewees also served as board members for conservation-based NGOs and other community organizations.

Interview Process and Implementation

I conducted semi-structured interviews between May and September 2022. The interviews followed an interview guide, which included questions about family history in the region; producer experience with predators and conflict-reduction tools; community change and community relationships, including those between producers; wildlife managers; and landscape-based NGOs. I created the interview guide after conducting a literature review focused on conflict-reduction with predators; cultural shifts as a product of amenity migration in rural regions; and connection to place through historically extractive livelihoods, including ranching. My literature review also uncovered the roles and missions of current conservation groups

around Montana, as well as how current ranch practices have shifted, or not, to become more conservation-oriented.

Q-Method Design: Development of the Q-Set

The first step when conducting a Q-method study is to develop a set of statements that represent the broad set of opinions about the study topic held by participants. To generate this list of statements, I first transcribed my interviews in Otter.ai and coded the interview data in ATLAS.ti to look for themes regarding livestock-grizzly conflict and conflict-reduction following the NCT method (Frieze, 2019). After two rounds of coding, I began to recognize salient themes related to how participants made sense of conflict and conflict-reduction encompassed many indirect factors, including landscape changes, sense of belonging, control over land and wildlife management, socio-cultural changes in communities, relationships with conservation NGOs, and conflict-reduction tools. To narrow in on the final statements to be used in the Q-Sort, I selected statements from interviews that were most interesting, ensuring that the statements represented all of the salient themes, covering both direct and indirect connections to grizzly-specific conflict. From this large group of statements, I then extracted 34 statements that represented the range of stakeholder opinions, from commonly held ideas to less prevalent opinions, which then became the Q-set (Appendix A). Rather than selecting statements from a set number of topics, statements covered a broad set of ideas about conflict-reduction tools, conflict, community relationships, landscape and community change, sense of belonging, and governance of land and wildlife because they were recurring themes throughout interviews.

Q-Method Implementation: Q-Sort Process

Once the Q-set was developed, participants were asked to individually complete the sorting exercise, which was distributed via the online platform QTip, or in-person as a physical

activity with laminated statement cards. I visited with participants in-person between October and November 2022, and the online sorts were completed during this same period. The task asked participants to rank 34 statements that reflected various ideas I heard during the interviews about conflict-reduction, from “least like how I think” to “most like how I think” on a scale from -4 to +4 (Figure 2). Twenty-one of the initial interviewees participated in the Q-Sort activity.

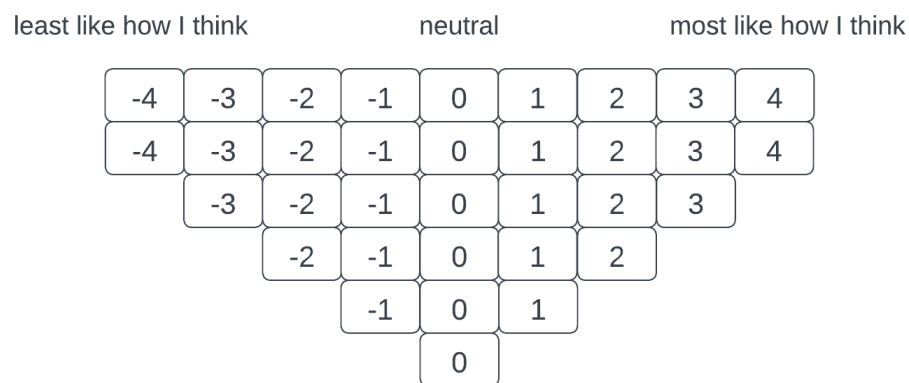


Figure 2. The Q-Sort activity asked participants to rank 34 statements from "least like how I think" to "most like how I think," with six spaces in the neutral (0) column, and two spaces in each high priority column (-4 and +4)

Q-Factor Analysis Process

To analyze the Q-sorts, I used the R program “qmethod” (Zabala, 2014), using the default settings for correlation and rotation, pearson correlation and varimax rotation respectively. I chose to use a Varimax rotation because “[v]arimax rotation is appropriate for exploratory studies that seek to identify the presence of different viewpoints in a community” (Lien et al. 2017, 790; see also, Watts & Stenner, 2012). The “qmethod” package uses factor analysis to identify correlations across participants’ Q-sorts to create factors, or latent variables. The Q-Factor analysis identifies distinguishing statements and shared meanings between participants’ Q-Sorts and then groups them into factors (Watts & Stenner, 2012). The latent variables represent various perspectives present in the study group, but they do not explain 100% of the

variance possible in a population and should not be considered as proportionate to the rest of the population. For my study, the factors allowed me to understand shared, holistic perspectives across the study population, rather than trying to piece together individual experiences and stories to identify shared ways of thinking.

Results

I asked 26 participants to complete the Q-Sort, and we received 21 responses (n=21). Three of the original 29 interviewees were not asked to complete the Q-sort for personal circumstances or because they were located outside of southwest Montana. Our analysis revealed a three-factor solution that described 61.74% of the variance. I chose a three factor solution to model the Q-sorts we received because the scree test we performed suggested three factors as the best-fit model, and adding a fourth factor would only explain a small amount of additional variance (Watts & Stenner, 2012). Additionally, each of the three factors had at least two participant's Q-sorts significantly load onto them, and the eigenvalues for each factor were all over 1.0 (Table 1), further justifying our choice. Of the 21 responses, two participant's Q-sorts did not load significantly onto any of the three factors, whereas Factor 1 had six Q-sorts load significantly, Factor 2 had eight, and Factor 3 had five. Each of the three factors reveal perspectives about how livestock-grizzly conflict-reduction is situated within broader social changes happening upon the landscape.

To explain the perspectives embedded in each of the three factors below, I used distinguishing statements and those that were highest (3,4) or lowest (-3,-4) ranked statements to conceptualize these perspectives and construct a narrative around them. To help explain these narratives, I pulled data from interviews with participants to supplement the data from the factor model. I labeled the latent perspectives from our Q-sort based on participants' subjectivities by which each factor is centered: 1) the social divide, which is influenced by the mismatch of cultural values and land use between ranchers and non-ranchers; 2) institutions, which is focused on who gets to make conservation decisions; and 3) ecosystem resolution, which is focused on creating conservation pathways that acknowledge the roles that different species have in the

ecosystem and benefit them (Figure 3). In each section that follows, I quote a variety of the statements from Table 2, and in the parentheses that follow I list the statement number followed by the ranking that that particular group assigned to that statement, between -4 and +4 (eg., (statement 12, 4)).

Table 1. Summary of study participants

	F1	F2	F3
# of Q sorts	6	8	5
Eigenvalues	4.44	4.32	4.14
Percentage of Variance Explained	21.15	20.59	19.72
Occupations	Researcher, range-rider, rancher, biologist, NGO-board member	Researcher, range-rider, rancher, biologist, NGO-board member	Range-rider, rancher, NGO-board member

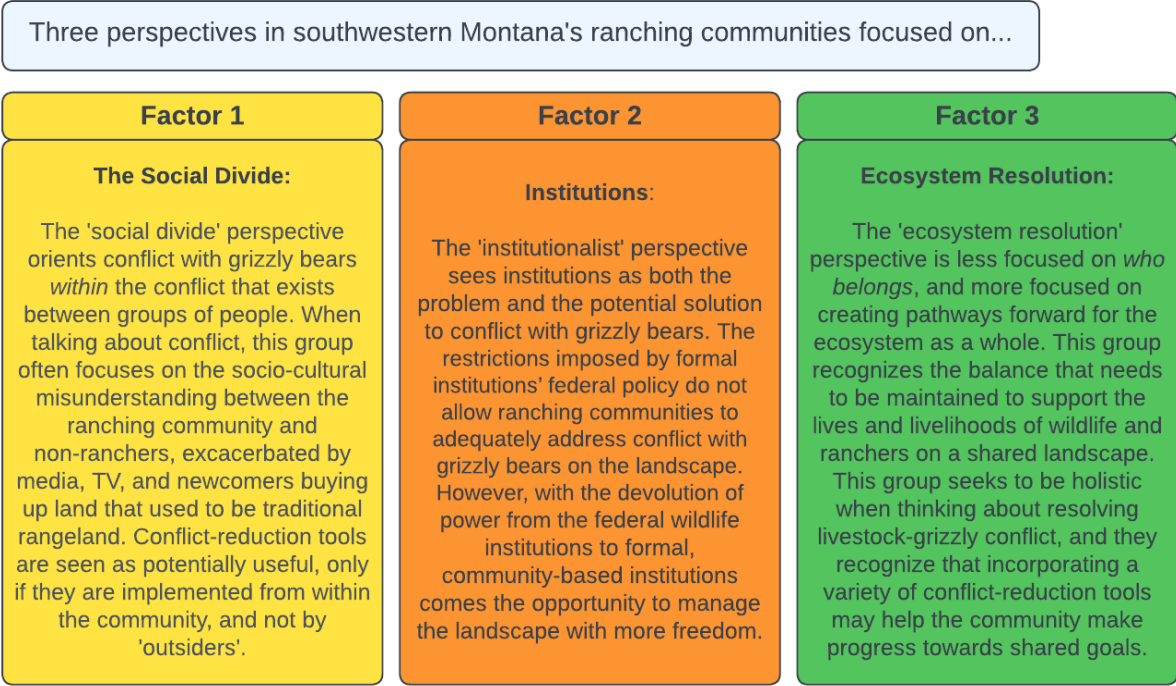


Figure 3. Three perspectives about conflicts happening on the landscape that underlie livestock-grizzly conflict.

Table 2				
Factor scores for high rank and distinguishing statements. Participants were allowed to rank statements from -4 (least like how I think) to 4 (most like how I think). Statements that distinguished that particular factor from the others are in italics. Factor 1: social divide, Factor 2: institutions, Factor 3: ecosystem resolution				
#	Factor 1 Priority Statements	F1	F2	F3
28	Many conservation groups can still reduce conflict without having producers represented on the board, because producers and conservation groups often share the	-4	-3	0
25	Second-home owners play an important role in conserving the ranching livelihood and reducing conflict by contributing to local organizations.	-4	-2	-2
4	State and federal agencies (IDFG, MFWP, USFWS) are transparent about their goals for bear management.	-3	-2	0
17	<i>The public appreciates the role that ranchers play in stewarding range landscapes and keeping these valleys undeveloped.</i>	-3	-1	-1
2	Compensation for depredation is not an acceptable way to deal with predators, because it signals that it's okay for them to be here.	-3	-1	-4
30	<i>By making technology more accessible, the industrialization of agriculture has allowed local ranch operations to persist.</i>	-1	1	0
8	Range riders have huge potential moving forward because the extra eyes out there will improve the number of carcasses that can be compensated.	0	3	3
21	Community level conflict-reduction programs are key to working around federal restrictions while still maintaining both ranchers and bears on the landscape.	3	1	2
11	TV, and other media, negatively impact how urban people grasp rural life in the West, and what it's like to live and work around wildlife.	3	1	0
9	Once predators start killing livestock the only way to halt that behavior is to remove the individual/pack. <i>Removal</i> needs to be added to the toolkit of management and	3	4	-3
5	Producers and livestock play an important role in the health of the ecosystem.	4	4	3
33	The stress of living with bears and wolves falls squarely on the agricultural community, and it shouldn't. The stress and financial impacts need to be shared.	4	2	-1
#	Factor 2 Priority Statements	F1	F2	F3
1	Our community benefits, mostly economically, from nature-based tourism and other natural amenities that have enticed people to move to or visit our area.	0	-4	0
16	It's not natural for producers to have to be with cattle on the allotments.	-2	-4	-3
19	A hunting season will not solve the bear problem.	-1	-3	4
22	Successful management has allowed elk populations to trend towards recovery, which keeps predators occupied on natural prey sources, rather than livestock.	-2	-3	-1
28	Many conservation groups can still reduce conflict without having producers represented on the board, because producers and conservation groups often share the	-4	-3	0
2	<i>Compensation for depredation is not an acceptable way to deal with predators, because it signals that it's okay for them to be here.</i>	-3	-1	4
21	Community level conflict-reduction programs are key to working around federal restrictions while still maintaining both ranchers and bears on the landscape.	3	1	2
20	Allowing the state to manage bears, like was done with wolves, would allow producers the freedom to keep conflict with, and about, wildlife at an acceptable level.	2	3	1
29	Predators on the ESA are being used as weapons by people who don't live around them, and it restricts people who live around those predators from being able to maintain their livelihood.	1	3	-2
8	Range riders have huge potential moving forward because the extra eyes out there will improve the number of carcasses that can be compensated.	0	3	3
9	Once predators start killing livestock the only way to halt that behavior is to remove the individual/pack. <i>Removal</i> needs to be added to the toolkit of management and	3	4	-3
5	Producers and livestock play an important role in the health of the ecosystem.	4	4	3
#	Factor 3 Priority Statements	F1	F2	F3
2	Compensation for depredation is not an acceptable way to deal with predators, because it signals that it's okay for them to be here.	-3	-1	-4
15	<i>Bears don't belong where people are, even as people expand further into forests and rangelands.</i>	-2	-2	-4
16	It's not natural for producers to have to be with cattle on the allotments.	-2	-4	-3
9	Once predators start killing livestock the only way to halt that behavior is to remove the individual/pack. <i>Removal</i> needs to be added to the toolkit of management and	3	4	-3
18	Bear conservation is for people who live in urban areas. Few rural communities want them around.	0	-1	-3
3	<i>The public should have to pay a tax if they want bears on the landscape, and that tax would be separate from any hunting/tag/ammunition revenues.</i>	1	0	-2
22	Successful management has allowed elk populations to trend towards recovery, which keeps predators occupied on natural prey sources, rather than livestock.	-2	-3	-1
28	<i>Many conservation groups can still reduce conflict without having producers represented on the board, because producers and conservation groups often share the same</i>	-4	-3	0
10	Bears and people moving in equally threaten ranching livelihoods.	-1	0	1
31	<i>As long as producers can financially and safely keep ranching on the land that our/their families have been on for generations, I don't care much about where grizzly bears reside.</i>	-1	-2	1
5	Producers and livestock play an important role in the health of the ecosystem.	4	4	3
8	Range riders have huge potential moving forward because the extra eyes out there will improve the number of carcasses that can be compensated.	0	3	3
32	Livestock guardian dogs could help deter predators in most ranch settings, and their benefits often outweigh the unintended consequences.	-1	0	3
6	Bears, and other predators, belong on the landscape too, and they play an important role in the health of the ecosystem.	1	0	4
19	A hunting season will not solve the bear problem.	-1	-3	4

Factor 1 – The Social Divide

Factor 1 is characterized by respondents' focus on the social divide that they perceive to be associated with grizzly bear conservation and conflict reduction efforts. For this group, the social divide, which delineates the traditional ranching community from newcomers that have more recently moved to rural areas, reinforces differences in cultural values for wildlife, as noted by one interviewee: "We've seen a huge influx of people move into this region. And so there's naturally more conflict as we're creating, you know, as there's a bigger social push to protect animals" (Interviewee 1). Similar to this interviewee, others in this group generally believe that bear conservation efforts and rangeland purchases by newcomers exacerbate the social divide between ranchers and non-ranchers, in part because the two groups hold contrasting land-use

visions, and impedes progress towards conflict-reduction. This group's belief that the social divide limits agreement on how to reduce human-bear conflict is apparent in their negative ranking of statement 28, meaning this group does not agree that "producers and conservation groups often share the same goals" (statement 28, -4). Further, they believe that negative impacts of wildlife are not shared with the rest of the non-ranching public, nor are they widely understood, leading to further division between groups of people sharing the landscape. Thus, for them, conflict with grizzly bears is situated within conflict between groups of people: the ranching community and those who are non-ranchers. Participants that loaded significantly onto this factor also negatively ranked statement 17, which states that "the public appreciates the role that ranchers play in stewarding range landscapes keeping these valleys undeveloped," demonstrating that they believe divide exists because non-ranchers lack understanding of the positive aspects that ranchers bring to the landscape (statement 17, -3).

To further highlight the misunderstanding between ranchers and non-ranchers, participants with the 'social divide' perspective agreed that the cultural misunderstanding between ranchers and non-ranchers is being worsened by media sources and by newcomers buying land that used to be traditional rangeland. Respondents associated with Factor 1 positively ranked "TV, and other media, negatively impact how urban people grasp rural life in the West and what it's like to live and work around wildlife" (statement 11, 3). As one participant exemplified during the interviews, participants often paired their views of the show *Yellowstone* with examples of ignorant tourists in Yellowstone National Park to demonstrate that non-ranchers value wildlife but they don't understand how to live or act around them:

“People are naive. Just like the three people in Yellowstone who've been hurt by bison [this season]. With the last one, you could see that the bison – if you knew anything about animals – was not happy. But the dumb people got closer.” – Interviewee 10

In our interview, this participant expressed a sentiment that is shared across the ‘social divide’ perspective: ranchers and producers have local knowledge about the ecosystem from their experiences living among wildlife, but outsiders lack that knowledge, demonstrated by their inability to behave properly around wildlife, as evidenced above. Underlying these statements is a shared belief that producers and livestock are beneficial to maintaining the landscape’s health because of the knowledge they have about the landscape and balance of the ecosystem (statement 5, 4). Respondents grouped to Factor 1 also explained that the ranching community’s intimate knowledge about the landscape is supplemented *by communication between people that spend time on the land and are connected to it*. One range-rider spoke of the knowledge provided to them by a local NGO as key to helping avoid conflict by informing them about predator movement. This respondent shared “[the range-riders] they’re wonderful because they’re out there observing [the landscape]. And anything that they see that we don’t, we communicate that [between us], and so we all have a bit better basic knowledge of where critters are, where the predators are” (Interviewee 9). Like this participant, respondents in this group often associated inter-community communication about where predators are moving on the landscape with local knowledge and connection to the landscape.

Participants who adhere to the ‘social divide’ perspective believe the divide is exacerbated by 1) growing division of the range landscape, as non-ranching newcomers purchase rangelands and do not put them to use as traditional ranches, and 2) disagreement between these two groups upon land-use goals and values. This group strongly disagreed with statement 25 (-4), meaning that this group opposes the idea that “second-home owners play an important role in

conserving the ranching livelihood and reducing conflict by contributing to local organizations.”

This group believes that newcomers are buying up rangeland and removing livestock from the landscape, and they don’t help with local conflict-reduction efforts. Instead, the ‘social divide perspective’ group believes non-ranching second-home owners may be exacerbating conflict by not contributing to existing conservation groups and allowing wildlife to use the land instead of livestock, which allows wildlife to move in closer to other ranches and create more conflict.

Members of this group also believe that by removing working ranches from the landscape and replacing them with open space, which can be used by wildlife, second-home owners and absentee owners cause more livestock-grizzly conflict to fall to a decreasing amount of ranchers (statement 25, -4 & statement 33, 4). Thus, members of this group also positively ranked “the stress of living with bears and wolves falls squarely on the agricultural community, and it shouldn’t. The stress and financial impacts need to be shared,” a sentiment that echoes back to this group's conviction that ranchers bear the burden of living with wildlife (statement 33, 4).

The high priority ascribed to this statement demonstrates participants’ belief that as more people buy up rangelands there are fewer traditional ranchers for the stress to fall onto, which increases the social divide. Newcomers are associated with a decrease in traditional ranchland, as well as a desire to keep predators on the landscape, therefore conflict-reduction for this group is associated with bears but also with people.

To reduce conflict on the landscape, members of this group believe that community-level conflict reduction programs are needed and prefer to work with people who share similar cultural values and experiences on the landscape to reduce the focus on the social divide. They strongly agreed with statement 21, “community level conflict-reduction programs are key to working around federal restrictions while still maintaining both ranchers and bears on the landscape,”

because it acknowledges community level solutions as the pathway to reduce conflict (statement 21, 3). In part, respondents with the ‘social divide’ perspective generally called for community-level conflict reduction programs because they shared the belief that the state and federal wildlife managers further deepen the social divide and the misunderstanding between the ranching community and non-ranching locals. Their negative ranking of statement 4 demonstrates their general disagreement that “state and federal agencies are transparent about their goals for bear management” (statement 4, -3). Overall, their perspective suggests that a lack of trust and shared values between ranching communities and non-ranching community members, as well as the federal government, creates a social divide that makes working towards complex conflict-reduction solutions difficult.

Those with the ‘social divide’ perspective broadly focus on what they see as the growing social division happening upon the landscape as a result of non-ranchers buying land, moving into the community, and bringing with them cultural and land-use values that are not shared by traditional ranchers. Participants grouped to Factor 1 currently believe that conflict-reduction tools do not address the larger social divide that is overwhelming their ability to address livestock-grizzly conflict. As such, participants loading on Factor 1 ranked statement 8, “range riders have huge potential moving forward,” as a neutral statement, because they generally do not seem to be convinced that tools are the way forward when they are implemented from outside of the community (statement 8, 0). However, since statement 8 was ranked neutrally, if tools – such as range riders, electric fencing, and carcass compost piles – are implemented from within the community then it may be possible to reduce livestock-grizzly conflict using tools. Participants’ neutral ranking of statement 8 may indicate that this group’s interpretation of conflict as a social divide does not allow for them to interpret tools as a pathway forward.

Factor 2 – Institutions

The ‘institutional’ perspective attributes a large majority of conflict involving bears to the formal institutions controlling wildlife and land, and the influence these institutions have over ranching communities’ sense of place and belonging. Formal institutions are designed and enforced laws or written rules that, typically, govern human behavior and social interaction (North, 1990). The U.S. Fish and Wildlife Service is the formal institution that has control over grizzly bear management and how humans are allowed to manage the bear population in the lower 48 states and, despite having closer contact with grizzly bears, state agencies and rural communities do not have any jurisdiction over grizzly bear management. Respondents with this perspective believe managing bears at the federal level leads to conflict because neither state level wildlife agencies nor local ranching communities have control, and these lower-level institutions are restricted from managing the landscape with the purpose of minimizing livestock loss. ‘Institutionalist’ respondents demonstrated their relative hesitance to believe that “community-level conflict-reduction programs are key to working around federal restrictions,” given that ranchers are unable to freely manage the landscape because of higher-level institutions’ wildlife policies (statement 21, 1). The ‘institutionalist perspective’ places less faith in the hands of community programs than Factor 1 respondents and ranked statement 21 lower (as 1, compared to Factor 1’s ranking of 21 as 3). Central to the ‘institutional’ perspective were participants’ claims that ranchers feel unable to maintain their roles as land stewards because the formal restrictions placed on them by federal institutions prevent them from properly stewarding the landscape and moving livestock, the tool ranchers use to properly graze the landscape, safely across the landscape. They emphasized the notion that ranchers are good stewards of ranchlands by ranking statement 5 positively, saying “producers and livestock play an important role in the

health of the ecosystem,” with the added caveat that institutions restrict ranchers from performing their stewardship duties (statement 5, 4).

Participants in this group assert that institutional restrictions and bureaucratic policies limit ranching communities’ abilities to reduce conflict with predators, steward the landscape, and feel safe and secure on the landscape without worrying about wildlife. This group of participants feels that management of most wildlife, particularly ungulate management in nearby Yellowstone National Park and throughout the state, has failed to keep ecosystems balanced, nor has management kept predators focused on natural prey sources. Because of the perceived poor management by these institutions, respondents with the ‘institutional’ perspective suggest that predators shift their focus away from natural prey to livestock as a food source, demonstrated by their negative ranking of “successful management has allowed elk populations to trend towards recovery, which keeps predators occupied on natural prey sources, rather than livestock” (statement 22, -3). Participants that hold the ‘institutional’ perspective often expressed similar sentiments about how USFWS control over grizzly bear policy and management does not allow producers to maintain the landscape the way they think it should be to promote ecosystem health, thus limiting ranching communities’ ability to maintain their sense of place. In our interview, one respondent highlighted that ranchers cannot operate as they normally would when protected wildlife move onto allotments, limiting their ability steward the land for ecosystem health:

“The one thing is, you know, we use livestock on the western rangeland as a part of the process that is necessary to keep the rangeland healthy. The public land rancher is the individual that accepts the responsibility to nature itself to cause that disturbance that used to be caused by the bison and the other large ungulates. And so we have a huge responsibility to provide that disturbance over the landscape, and it’s become quite difficult because the landscape has been divided up into invisible, jurisdictional polygons where they don’t allow the same management, so the rancher has to manage all of that and it’s very difficult... We’re having a hard time managing, performing our responsibility

to manage the resource [the land] for the American people and mother nature, just because of all these issues” – Interviewee 5

Holding similar beliefs to those expressed by Interviewee 5, the ‘institutionalist’ group feels that ranching communities are being pushed off the landscape by bears and the institutions who manage them because they are unable to maintain the health of the ecosystem. After I asked one participant about the biggest threat to the future of ranching on the surrounding landscapes, they responded “probably the government [will influence] what’s going to happen to ranching” (Interviewee 18). Generally, those in this group believe that conflict arises because ranching communities are not able to control or manage for changes on the landscape or properly maintain the landscape, which limits their senses of place and belonging. For them, a healthy landscape is maintained by grazing livestock, through which ranchers develop knowledge about, and connection to, the landscape which boosts their sense of belonging to that place.

Members of this group believe that hunting is one form of management that they are currently restricted from that, if allowed, would improve ranchers’ ability to manage the landscape and their sense of place and thus mitigate conflict. For rural communities living around protected species, hunting is often a symbol of freedom or autonomy, whereas a lack of hunting can be representative of government control or restrictions (Scarce, 1998). Adherents of Factor 2 believe that a hunting season would help curb conflict with predators, demonstrated by their negative ranking of statement 19 (-3). This group’s ranking of statement 19 is related to their belief that the current restrictions posed by formal institutions are too stringent for ranchers to properly maintain the rangeland with livestock, which leads to them feeling forced off the landscape by conflict with bears and their advocates, as evidenced by Interviewee 8:

“And if they [federal managers] would concentrate, whether it’s a hunting season, or whatever it may be, if they would concentrate on removing those problem bears, those few, it would make

everybody's relationship – ranchers, everybody – it would make everybody's relationship so much stronger because we wouldn't have bad bears. And the bad bears are teaching all of their young, and any other bears that are with them, that that's the behavior. And we need to eliminate that [the behavior] because that's the conflict, a lot of the conflict, especially with ranchers not being able to do anything when they're killing your cattle. It's so futile to sit by and just, you know, have them die" – Interviewee 8

This interviewee shares a commonly held belief among my study participants associated with the 'institutionalist' perspective that if the government legalized hunting then producers would be allowed more freedom to manage bears and influence bear behavior on the landscape. This policy prescription is representative of their broader perspective that the key mechanism for preventing conflict is devolving management power away from formal, federal institutions to formal, state and community-based organizations.

Respondents that loaded onto this factor view the devolution of power for bear management from federal institutions back to the local institutions as a means of returning land oversight and sense of belonging back to the locals. For example, one interviewee exhibited the belief that the government should return bear management power back to the state-level wildlife institutions, mentioning "there was just a short time period where they [the Secretary of the Interior] got them [bears] delisted for just a smidge, which is what really needs to happen, to be honest." (Interviewee 22). They later noted "I think it really is ranching that's your open spaces, and it's your valley floors, and it's your connectivity between the [recovery] areas...And I don't think the government does a good job... Since 1960, we have taken 60,000 head of cattle out of the valley, and it's for all different reasons," exhibiting the belief that the government is not able to properly maintain the ecosystem as well as ranchers (Interviewee 22). In my interviews, participants often noted that ranching communities' sense of belonging and authority over the landscape and wildlife has disintegrated, partially due to the enactment of the Endangered

Species Act (ESA), which allowed the federal government to place restrictions on ranching communities in the name of ‘endangered species recovery programs.’ Moreover, participants also demonstrated that through the restrictions brought about by the ESA, outsiders are using endangered species as weapons of force by filing lawsuits that blame and negatively impact rural ranching communities. Respondents with the ‘institutional perspective’ believe there is an association between conflict on the landscape and the management restrictions placed on them by formal institutions, as evidenced by their positive ranking of the statement “predators on the ESA are being used as weapons by people who don’t live around them” (statement 29, 3). Respondents holding the ‘institutionalist’ perspective also share a core belief that shifting management power from the federal level to the state level would allow ranching communities more autonomy to manage the landscape, enabling them to reduce conflict with wildlife on their own terms and not be limited by bureaucracy. This group positively ranked statements 20 and 9, both of which suggest that for this group the way to resolve livestock-grizzly conflict on the landscape would be to delist bears from the ESA, shift to state management of grizzly bears, and allow lethal removal of bears: “allowing the state to manage bears, like was done for wolves, would allow producers the freedom to keep conflict with, and about, wildlife at an acceptable level” (statement 20, 3) and “...lethal removal needs to be added to the conflict-reduction toolkit” (statement 9, 4). The high priority given to these statements demonstrates how this group views the formal institutions with current management authority over bears as using them to restrict ranchers’ autonomy and reduce their sense of belonging on the landscape. For them, it is only through the devolution of power can feelings of belonging and autonomy be restored.

Members of this group believe that alongside a devolution of power from federal institutions to state and formal, community-level institutions comes the opportunity for ranchers

to incorporate conflict-reduction tools and live more freely alongside predators. In my interviews, one respondent mentioned that there are a variety of steps that need to be taken to allow ranchers to have more ability to act, and that “just throwing money at the problem isn’t gonna be the answer” (Interviewee 11). While financial compensation may be able to help ranching operations remain viable, members of this group believe the economic costs of increasing wildlife and increasing tourism outweigh the benefits (statement 1, -4). As such, until a devolution of management power is achieved, incorporating conflict-reduction tools can be seen as a ‘Bandaid’ to the myriad stressors that their ranching livelihoods are subject to. This view was made clear by one interviewee who explained that while there are many conflict-reduction tools that can be useful in different settings and scenarios, “as long as the bear is listed, you’re pretty limited in what you can do [to reduce conflict]” (Interviewee 5). Respondents grouped to Factor 2 agree with this interviewee that conflict-reduction efforts are limited in their benefit because ranchers are limited to working around federal restrictions rather than being able to directly address problems (statement 21, 1). Overall, this group believes their senses of belonging and place can be bolstered by community-level programs and community-level conflict-reduction, but these local institutions need to be granted the authority to manage with more freedom so that producers can feel their belonging restored in full, and are enabled to manage the landscape as they see fit for ecosystem health. Further, respondents in this group view tools such as range-riders as “having huge potential moving forward,” to help offset ranching operations’ depredation losses (statement 8, 3), but not until lower-level institutions are granted sufficient authority to take a more active role in land and predator management.

Factor 3 – Ecosystem Resolution

Characteristic of the Factor 3 perspective is participants' holistic consideration of the ecosystem when thinking about how to create solutions to conflict and changes on the landscape. Factor 3 is not a perspective on conflict. Rather it is a perspective focused on how to achieve broad ecosystem resolutions to mitigate conflict. For this group, 'ecosystem resolution' is achieved by conceptualizing and managing the ecosystem holistically, which then allows communities to best mitigate livestock-grizzly conflict. Acknowledging that both bears and ranchers belong on the landscape, and that everything plays a role in the broader ecosystem, allows this group to think about and offer diverse solutions to reduce conflict between bears and ranchers on the landscape. 'Ecosystem resolution' affiliated respondents believe that properly managed range landscapes reflect the interconnectedness of the ecosystem and the role that everyone, or everything, plays in its functioning, and they emphasize the importance of maintaining biodiversity for the health of all the species that depend on the landscape. Respondents that loaded onto Factor 3 indicated their acceptance of a shared belonging, both people and bears on a shared landscape, by disputing the idea that "bears don't belong where people are" (statement 15, -4). Further, the positively ranked statements for members of this group are focused on acknowledging shared belonging on the landscape and, therefore, for them the incorporation of a broad variety of conflict-reduction tools allows for individualized conflict-reduction solutions that ensure ranching communities can maintain their belonging and sense of place. That Factor 3 is a solution-focused set of beliefs is made evident by the positively ranked statements that pose solutions to livestock-grizzly conflict, whereas the other factor groups' positively ranked statements were focused on describing problems generated by bears and non-ranchers. These "solution statements" involve broad community-wide efforts to incorporate

livestock guardian dogs and range riders into ranching operations, acknowledge shared belonging on the landscape, and avoid relying solely on a hunting season to keep conflict at bay. Their focus on solutions distinguishes this group's mindset from the other factor groups. Importantly, believing that an 'ecosystem resolution' mindset will help communities think beyond conflict and allow them to create flexible pathways to reduce conflict, this group does not adhere to the idea that there is one path to conflict-reduction.

Respondents that hold the 'ecosystem resolution' perspective believe that everything and everyone *belongs* and has a role on the landscape, and this group is generally more tolerant of sharing the landscape with bears and other predators than are the other factor groups. Members of this group positively ranked "producers and livestock play an important role in the health of the ecosystem" (statement 5, 3). More importantly, they were the only group to positively rank the statement "bears, and other predators, belong on the landscape too," demonstrating their acknowledgement that both bears and people belong on the landscape (statement 6, 4). Further, this group of respondents was the only group to positively rank both statements 5 and 6. Highlighting how bears' and ranchers' shared sense of belonging on the landscape influences rancher decision-making, one rancher explained "nature looks at the whole picture, so we have to be holistic in our management." This interviewee alludes to the idea that the interconnectedness of the ecosystem must be matched with a holistic style of land management that considers the landscape and all of the players as a "whole" entity, which is how their ranch operates. This rancher also believes that other ranchers and conservationists should consider following suit to maintain the health of the landscape and improve conflict mitigation. Overall, when conceptualizing all of the changes happening on the landscape, the 'ecosystem resolution' group

acknowledges a shared belonging, which subsequently allows them to think about and work towards broad solutions to reduce conflict.

Participants who adhere to the ‘ecosystem resolution’ perspective suggest ecosystem-wide solutions can maintain socio-cultural and biological balance across a shared landscape to support the lives and livelihoods of wildlife and ranchers. The ‘ecosystem resolution’ perspective recognizes that people hold diverse values for nature, thus programs to reduce conflict must be broad to maintain a balanced socio-cultural landscape and diverse visions of land-use. One interviewee explains the spectrum of values and visions that community members have, and that community conservation programs and committees have to balance in order to manage conflicts:

“I was on a committee to talk about how we were going to manage the bears as they came...and it was a diverse group of people from, you know, people that want to protect the bear no matter what, to the other end of it, some rancher that just wanted to kill a bear no matter what. So you're trying to find out how to deal with the conflict. And everybody has to give a little to get anything.”

– Interviewee 12

Similar to this interviewee, others who hold the ‘ecosystem resolution’ perspective recognize that people within rural communities have diverse values for grizzly bears and diverse ideas for resolving conflict across the landscape. Because members of this group recognize people in their communities hold different values for wildlife, they negatively ranked “bear conservation is for those who live in urban areas, and few rural communities want them [bears] around” (statement 18, -3). Members of this group dispute the idea that rural and urban conservation goals are in conflict, further highlighting their belief that forthcoming conservation solutions need to achieve both biological and socio-cultural balance to succeed (statement 18, -3). These participants’ holistic preference for balanced landscape management coincides with a general disposition to be more tolerant of predators, as evidenced by one interviewee who stated, “so there's a degree of

tolerance for sure - I have a high tolerance for grizzly bears” (Interviewee, 27). In our interview, this participant later explained how conflict-reduction and coexistence efforts would be more successful if they were flexible to match peoples’ different values for and ways of thinking about wildlife and wildlife management: “I feel like there's so much potential in our ability to actually coexist, if we call it that, with grizzly bears, if we at large can just really honor a more collaborative and more adaptive kind of mentality, versus that of the traditional, you could say” (Interviewee, 27). Like this respondent, other Factor 3 affiliated respondents focus on offering a variety of conflict-reduction solutions when thinking about resolving conflict on the landscape and thinking about coexistence.

Respondents that hold the ‘ecosystem resolution’ perspective are holistic when thinking about resolving livestock-grizzly conflict, and they recognize that incorporating a variety of conflict-reduction tools would help their community maintain social and biological balance on the landscape while making progress towards diverse conflict-reduction goals. The “ecosystem resolution” group perceives grizzly conflict-reduction as a complex, multifaceted issue, thus accounting for stakeholders’ different degrees of acceptance of grizzly bears and other predators implies there is no one-size-fits-all solution to such a complex problem. Because of this, group members negatively ranked “removal of individuals/packs is the *only* way to halt depredation behavior,” showing they acknowledge the importance of everything’s role in the ecosystem (statement 9, -3). In contrast to respondents with the ‘institutional’ perspective, respondents who held the ‘ecosystem resolution’ perspective are not keen on delisting bears and relying only on a hunting season to reduce conflict (statement 19, 4). Though delisting and hunting may be important tools in the toolbox, respondents that loaded onto Factor 3 do not believe that either complex social conflict or livestock-grizzly conflict can be solved simply by removing predators

from the landscape. In fact, members of this group positively ranked the idea that “a hunting season will not solve the bear problem,” demonstrating their apprehension to rely on delisting and hunting as the key to harmoniously sharing the landscape with bears (statement 19, 4). Instead, this group pushes for “nimble management solutions,” which would be more flexible responses to conflict than just lethal removal or hunting, and would account for different conservation values, interactions with wildlife, and the labor costs of conflict-reduction across ranching communities (Interviewee, 20).

To reduce conflict on the landscape, respondents with the ‘ecosystem resolution’ perspective emphasize the importance of offering individualized conflict-reduction tools and techniques to match each operation and holistically ensure that predators, livestock, and ranchers with differing values can coexist. Participants that loaded onto Factor 3 incorporate conflict reduction tools into their ranch management practices because this group’s holistic views on resolution coincide with a general willingness to adopt and test new tools on the landscape, demonstrated by their positive responses toward using livestock guardian dogs and range riders (statements 32, 3 & 8, 3). These participants believe that the dogs “could help deter predators in most ranch settings” (statement 32, 3) and that range riders “have huge potential moving forward...to improve the number of carcasses that are compensated” (statement 8, 3). However, this group also recognizes that even if livestock guardian dogs and range riders are implemented on some ranch operations conflicts will still occur between livestock and grizzlies as ranching communities figure out what works best for them to reduce conflict. One interviewee mentioned that while the range riding program is beneficial for reducing conflict in their valley, it may not work for other communities and their interactions with bears:

“There's like no silver bullet, and you're not going to get rid of conflicts, ever. That's definitely something I've learned is that like, this range riding program right here would not work for everybody. It's not what everybody would want. It's not what everybody needs” – Interviewee 13

This interviewee demonstrates how finding the right tool to suit a community or an individual operation is important, but acknowledges that conflict will always occur. Thus, those holding the ‘ecosystem resolution’ perspective also believe that financial compensation is a useful tool to help mitigate communities’ frustration and financial struggle when this occurs. Due to their optimism toward financial compensation, respondents grouped to Factor 3 disagreed with the idea that “compensation for depredation is not an acceptable way to deal with predators” (statement 2, -4). Instead, participants in Factor 3 believe that financial compensation could aid ranchers’ transitions to a more seamless sharing of the landscape with bears, demonstrated by the negative ranking of statement 2. Overall, the ‘ecosystem resolution’ perspective demonstrates how some members of the ranching community conceptualize changes on the landscape through a lens of shared belonging. Contrary to other factor groups, participants adhering to Factor 3 think more holistically about creating conflict-reduction solutions to balance the needs of bears and people.

Discussion

Using a Q-method analysis, I identified three perspectives on conflict that demonstrate that southwest Montana ranching communities, though often portrayed as a homogeneous group of people with similar ways of thinking, do not conceptualize livestock-grizzly conflict from the same frame of mind. That members of ranching communities do not hold similar ways of conceptualizing conflict is a particularly interesting point of consideration because it implies that community members' perspectives on conflict and conflict-reduction are influenced in different ways by various social factors. Social factors, such as changing sense of place and belonging and the symbolic meanings about grizzly bears, landscape change and conflict-reduction tools, underlie how community members perceive conflict on the landscape. Symbolic meanings and sense of place and belonging have been influenced by increasing populations of grizzly bears and newcomers, in turn influencing how members of ranching communities conceptualize where conflict is rooted on the landscape. In addition to my finding that respondents held different perspectives on conflict, I showed that within my relatively small study site they also do not agree on necessary next steps to reduce conflict, nor do they agree on the usefulness of conflict-reduction tools and technologies. Therefore, as conservationists, biologists, and community conservation groups move forward and attempt to create conflict-reduction solutions for rural communities living directly alongside wildlife, they cannot assume individuals within ranching communities hold similar ways of thinking about conflict, nor coexistence.

Theoretical Implications

The following section addresses conceptual and theoretical implications gleaned from my findings. I demonstrate how symbolic meanings and the sense of belonging to a place influence

how ranching communities interpret conflict, before addressing the points where the three perspectives converge.

Symbolic Meanings

Federally managed resources, like protected species and National Parks, have been shown to be representative symbols of restrictive government control and reduced local autonomy in the literature and in my study sample (Clark & Rutherford, 2005; Scarce, 1998). For example, the Endangered Species Act serves as one example of a policy that the federal government implemented to protect wildlife. However, the act itself has been noted as representing government control, and stakeholders, particularly in the Greater Yellowstone region where protections for endangered species are in place, often see the policy through a lens of controversy (Wilson, 1997; Scarce, 1998). Similarly, as made evident throughout my interviews, people may hold multiple meanings for bears and participants interpret bears as many things, including: predators, symbols of the wild, endangered species, symbols of government control, and symbols of divided cultural values. Further, in my interviews, how individuals give meaning to grizzly bears influences how they interpret the broader conflict and underlying implications of it for ranchers and their communities, as exemplified by the following quote:

“Ranchers are dealing with the physical threat bears present, but they're also dealing with all of the symbology that they represent - of the federal government managing their bodies, the lack of agency, the lack of value by the American public, the expectation of the American public to just be okay with grizzly bears.” – Interviewee 2

This interviewee explains how, in addition to the grizzly bear’s threat to livestock health and ranching livelihoods, the many symbolic identities an individual may assign to grizzly bears, depending on the context, influence how individuals think about broader conflict surrounding bears. For example, those holding the ‘institutionalist’ perspective often interpret bears as

symbolic of the government's control over ranchers and the landscape. The 'ecosystem resolution' group interprets bears and land as symbolic of wild landscapes that deserve to be shared. In contrast, respondents with the 'social divide' perspective see bears as representing the social divide that rests between the non-ranching public, who they believe want to intrinsically protect bears, and the ranching community who experiences the more negative aspects of living with bears and other wildlife. The 'social divide' group also views the physical changes happening on the landscape, as newcomers purchase ranch lands, as a symbolic representation of this social divide. Understanding how each perspective gives meaning to bears – as representing a social divide, government control, or wild landscapes – would directly help to understand how members of ranching communities think about conflict and how conflict is associated with changes on the landscape.

How participants interpreted changes happening on the landscape also influenced their interpretations of conflict-reduction efforts and tools in different ways, depending on their perspective on conflict. For participants who interpret conflict as a social divide (Factor 1), tools were not easily seen as does not allow for them to interpret as a pathway forward because the tools represent the cultural influence and pressure from outsiders they believe to be at the root of the conflict. Further, the meanings this group ascribes to conflict-reduction tools seems to contradict the ranching communities' goals to preserve their sociocultural community, which leads to members of Factor 1 responding to conflict-reduction programs with opposition. Participants grouped to Factor 2 interpret range landscapes as associated with ranchers' freedom and authority to make their own management decisions, thus interpreting changes on the landscape from a similar lens as Factor 1 respondents as potentially contradictory to their goal to maintain their land and community. Respondents holding the 'ecosystem resolution' perspective,

however, understand that solutions to conflict need to be flexible to match the changes happening on the landscape. Therefore, rather than focusing on institutional restrictions or social division within ranching communities, this group of stakeholders interprets conflict-reduction tools as symbolic of the holistic conceptualization of ecosystem management that is necessary to achieve a harmonious shared landscape. Each group interprets bears, the landscape, and conflict-reduction tools from a different perspective because they've conceptualized the underlying conflict in different ways as it relates to all of the changes happening on the landscape and the extent to which their sense of belonging to a place is impacted by those changes.

Sense of Belonging to a Place

Changes to the landscape or environment, and how community members interpret those changes, can disrupt their attachment to a place and subsequently disrupt their sense of place and feeling of belonging to that place and the community (Devine-Wright & Howes, 2010). Consistent with the literature, my interview data demonstrated that landowners in rural, agricultural communities expressed more concern about changing senses of belonging and place than non-agricultural newcomers (Keske et al., 2017), especially as it relates to increasing bear and human population growth. Demographic changes, by means of amenity migration and exurban expansion, continue to alter rural communities' cultural and social values for land and wildlife and these changes are consistent across my study site (Gosnell et al., 2006). My interviews uncovered that southwest Montana ranching communities experienced changes to their senses of place and belonging as a consequence of increasing grizzly bear and human populations. I found that these changes that are disrupting their sense of place continuously came up during my conversations with members of ranching communities about conflict and conflict-reduction. All factor groups indicated that their connection to the landscape is altered as the

landscape changes, via increasing conflict with wildlife or clashing views about wildlife and land management goals with newcomers who buy land and begin to live in the community. Because conflict for many community members originates out of the landscape changes that disrupt sense of place, these community members may develop negative feelings about conflict-reduction tools because they do not resolve the disrupted sense of place that the conflict is truly about.

In my study, I found that when the rancher's sense of place is degraded, ranching communities are likely to notice more conflict and have stronger feelings of social division or tension, leading to conflict over and about grizzly bears. Importantly, respondents grouped to Factor 3 do not focus on these tensions within the community because they accept that both bears and people belong on the shared landscape. Due to this shared sense of belonging, respondents with the 'ecosystem resolution' perspective do not feel that their sense of place is directly threatened by changes on the landscape, and they focus on community-wide solutions to conflict that incorporate bears and diverse members of the community. However, respondents grouped to Factors 1 and 2 associate ranchers' sense of place with idealized memories of what the landscape used to be. For example, the following quotes exemplify how ranching community members' senses of place are impacted as their experiences on the landscape shift away from what they used to be:

"I know what it's like to try to move cattle and ride in an area where there is [sic] grizzly bears. It used to be fun, it's not necessarily fun anymore... We used to be proud that we live next to Yellowstone National Park. But since this brucellosis thing and all the predators and everything that we have to deal with, we're not nearly as proud of the park." – Interviewee 15

"Just the huge influx of people, they don't realize how much it's changed [from] before they got here. So there's always that perspective of, you know, 'shut the door, because there are more people coming in now and somebody's building next to me.' It's like, yeah, but that used to be a field." – Interviewee 3

Here we can see that Interviewee 15's sense of place is deeply influenced by and embedded in conflict with bears and the feeling that federal management of wildlife and the landscape has altered their pride and connection to the landscape. Further, Interviewee 3 explains how non-ranching newcomers have been buying up land at rapid rates, bringing with them new ideas for the landscape and new values into traditional communities. Interviewee 3 continued on to explain how newcomers might feel threatened by additional newcomers moving in and worry about how they'll change the landscape, but that neither group of newcomers understands what the landscape means to ranchers. Most importantly, this individual demonstrates how rural communities experiencing demographic changes experience simultaneous physical and cultural changes upon the landscape, and there is a large cultural misunderstanding about the origins of conflict within rural communities that increases as more people move in and change the environment.

In my interviews, it was clear these physical and cultural changes to the landscape disrupt ranching communities' sense of place, leading them to oppose further grizzly bear expansion. For many interviewees, the combination of newcomers and federal management disrupting their sense of place led to their sense of belonging diminishing. In addition, in both my interviews and the q-sort results, it is clear this diminishing sense of belonging to a place directly affects perspectives on conflict. For example, members of ranching communities who adhere to Factor 1 believe that newcomers' cultural values cause conflict because they conflict with existing cultural values in the community. During our interview, a researcher described a common sentiment held by Factor 1 group members; "we [ranchers] belong here, and all of these new-West transitions are a threat to our way of life" because they diminish ranching community members' sense of place and their connection to the landscape (Interviewee 2). Participants

grouped to Factor 2 suggested that conflict is caused by bear conservation policy because policy diminishes communities' sense of belonging to place by limiting ranchers' ability to maintain the landscape as they see fit. On the contrary, further evidence of this relationship between conflict and sense of place is seen in the fact that Factor 3 group members who adhere to a solution-oriented perspective *did not* experience disruptions to their sense of place or belonging.

My results suggest that restoring a sense of belonging to a place can be beneficial for community programs to identify and achieve shared conservation goals. If a sense of place is strengthened within the ranching community, then the likelihood of community participation and collaboration in terms of conflict-reduction is higher, as has been noted in other case studies (Escalera-Reyes, 2020). For example, a well-revered community-led conservation organization has garnered success in many conservation efforts because the organization moves forward only after they've collaborated, discussed, and come to a unanimous decision. One interviewee described how this collaborative organization gives community members the ability to have a voice when making decisions about the surrounding environment; "I think that because they're consensus based, that the community does trust them to make reasonable decisions, and actually are leaders in conservation work" (Interviewee 19). As noted by this and other interviewees, this particular community-led organization allows community members a voice through which they are able to initiate efforts that restore their sense of place on the landscape. My participants also shared stories that demonstrated when ranchers' sense of belonging to a place is diminished and they feel pushed out of their communities, then conflict ensues. However, the relationship between conflict and sense of place is a catch 22, because this problematic relationship continues as a cycle, and the sense of place is further diminished as more social conflict occurs within the community. Thus, the most effective way to reduce conflict within communities presents as

restoring a sense of place by working to bolster community participation and collaboration on shared conservation goals.

Points of Convergence

Despite finding that participants across ranching communities interpreted and made sense of conflict from different lenses, I still found points of convergence across the three perspectives, where people shared opinions about conflict and conflict-reduction. For example, respondents across the three perspectives agreed that producers and livestock are good for the health of the rangeland ecosystem and that they deserve a place on the landscape. They also agreed ranchers should have the ability to continue making a living by ranching. Despite divergent perspectives about the root causes of conflict, these perspectives suggest there is a shared land ethic across my study group. This result is consistent with past findings that people within the ranching livelihood have a strong connection to place and a desire to steward the landscape (Lien et al., 2017). However, it is important to note holding a shared view on ranchers' belonging, benefits to and stewardship of the landscape did not directly imply that participants would share perspectives about conflict. Therefore, we may not accurately assume that community members will make sense of conflict-reduction on the landscape in a similar manner, even when they hold a shared land ethic, suggesting that they will also adopt or avoid conflict-reduction tools for differing reasons.

In addition to holding a shared land ethic, most of my participants agreed range riders hold promise as a conflict reduction tool. Range riders are a unique tool because their use involves humans spending time monitoring the landscape, whereas other tools like electric fencing and livestock guardian dogs do not involve a consistent human presence on the landscape. At least some of the agreement on their use seems to derive from the fact that the

ability to monitor interactions between livestock and predators while also, physically and emotionally, maintaining ranchers' place on the landscape appears to allow ranchers a seamless transition into the use of tools. Range-riders spend an immense amount of time on the landscape, and in my interviews it seemed that participants may be more apprehensive to use other tools that do not involve such an in-depth human presence on the landscape. Other conflict-reduction tools, such as electric fencing, livestock guardian dogs, and attractant management place a lot of trust in technologies that do not directly involve ranchers in their use, and many ranchers still implement, or consider implementing these tools, but slightly less often than range riders. One interviewee explained how each rancher has different values, and because of this, ranchers have many different ways to address livestock-grizzly conflict on their operations and there is not one tool that will be most effective:

“I don't think it's just one thing. I just think that there's so much diversity in people that you'll hear a new argument tomorrow about why guard dogs are dumb. Or why we shouldn't be able to shoot the wolves. I mean. So I just, I don't know, I've got, in this valley, I've got 100 different neighbors that ranch, no two of us do it the same, yet most of us have been in business for generations. So obviously, there's more than one way to ranch.” – Interviewee 12

The greatest convergence, as evidenced by this participant's acknowledgement of 'more than one way to ranch,' is that there is no one-size fits-all approach to conflict-reduction. Between the biological clock of the grizzly bear, grazing timelines, and bureaucracy that limits biologists' responsiveness in times of conflict, there is only so much room for ranchers to be flexible within their operations' annual schedules, limiting the types of tools they can use and the time they can dedicate to them (Cinque et al., 2022). Despite not reaching a consensus about the usefulness of all conflict-reduction tools, participants generally agreed that there are many obstacles that

ranchers need flexibility to work around, and conflict-reduction efforts need to offer equal flexibility.

Conflict-Reduction Implications

Collaborative decision-making has been promoted as a practical way to reduce conflict and solve other conservation goals at the community level (Wilmer et al., 2018). In an overview article of conservation conflicts, Redpath et al. (2013) outline the challenges to collaborative, community conflict-reduction efforts include factors such as mismatching conservation goals, unwillingness to participate, lack of or strict legislation, and financial incentives that overlook cultural values and conservation goals. My findings demonstrate that each of the three perspectives on conflict held by members of ranching communities recognize at least one of the challenges identified by Redpath et al. For example, by acknowledging stakeholders' diverse opinions about lethal removal, predators, and who belongs on the landscape, respondents grouped to Factor 3 believe that emerging policy should not exclude anyone or any species from the landscape and should therefore try to capitalize on shared conservation goals. The 'ecosystem resolution' perspective diverges from Factor 1's narrative that new people moving in will cause problems by dividing the rangeland, and by bringing different cultural values for wildlife and having different ideas of who belongs. One interviewee who held the 'social divide' perspective described how many communities feel torn about how to move forward to reduce conflict, and whether or not to involve newcomers, when stating rural communities are "sort of at this crossroads [where], some of them want to have the new West people involved, but they want them on their terms" (Interviewee, 2). Respondents from the Factor 1 group believe the stress of living with predators needs to be shared better with the public, and that the public does not understand the full range of considerations ranchers take into account when making decisions for

their operation, including presence of wildlife, drought conditions, and grazing permit restrictions.

More specifically, Factor 2 group members believe that collaborative conservation decision-making is possible, but it will not solve or reduce livestock-grizzly conflict because community conservation groups do not have the power to manage wildlife or land. Environmental sociologists have found evidence to support the argument that wildlife institutions “that address environmental justice, including the devolution of wildlife to local communities, may be more salient than the conventional measures of costs and benefits for understanding human-wildlife coexistence” (Merz et al., 2023). Because grizzly bears are still listed as endangered species, their status is often interpreted as a threat to ranching communities’ freedom which increases the costs of coexistence. For individuals who interpret federal management and endangered species as a threat, there is a likelihood they would exhibit oppositional behavior to conflict-reduction efforts in their community. Other environmental sociologists demonstrated how tensions caused by uneven governance and authority of management do not allow for collaborative conflict management (Bennett et al., 2022). The authors later describe how “issues within the governance structure and relationships within management in terms of lack of legitimacy, trust, and participation, need to be addressed to create a socially viable collaborative governance regime capable of managing conflict” (Bennett et al., 2022, p.1). Similarly, Redpath et al. found that legislation and policy can exacerbate conflict when the legislation causes certain stakeholder groups to feel restricted (2013). Consistent with the literature, my results demonstrate that Factor 2 group members believe that legislation restricts communities from collaborating to resolve conflict on the landscape and

altering the governance structure to give management authority to community-level institutions would help communities reduce conflict.

Though often difficult to initiate, there are examples of collaborative community conservation groups that have found a good balance in achieving their community goals across my study site. Across southwest Montana many community-lead conservation groups consistently engage with community members from each of the three perspectives and these groups still manage to reach consensus. While my interviews described how individuals are still upset and divided about livestock-grizzly conflict, social conflict, and conflict-reduction on a larger scale, I did find evidence that successful collaboration towards shared goals occurs at the community scale, suggesting that collaborative community conservation efforts could be best able to make practical steps toward addressing conflict.

Conclusion

Conservationists across western Montana are pushing for better incorporation of conflict-reduction tools to reduce conflict between livestock and grizzly bears. However, and despite many rural ranching communities being open to the idea of a shared landscape and the tools sometimes proving effective, the adoption and incorporation of conflict-reduction tools is still opposed in many settings. More recently, social scientists focused on technology adoption have identified that social factors, like symbolic meanings and sense of place, heavily influence whether changes to landscape, either by technology proposals or increasing human and grizzly presence, are accepted or opposed. By researching the various subjectivities and perspectives that southwest Montana ranching communities have about increasing grizzly presence and broader changes happening to the social landscapes of rural communities, we are able to get a better idea of how people make sense of conflict. Understanding these perspectives on conflict is necessary before we can fully understand conflict-reduction tool adoption and make practical strides toward improving conflict-reduction measures and coexistence. The interviews and Q-method survey I conducted with members of the ranching community revealed that bears and landscape changes can represent and hold a variety of diverse meanings, suggesting that conflict-reduction tools will also be endowed with these and other meanings that may bolster or threaten an individual's sense of place. Three perspectives about conflict were uncovered within the study group, demonstrating that rural ranching communities, though often portrayed as a homogeneous group, do not conceptualize conflict the same way. Thus, the creation of successful conflict-reduction programs could hinge on local-level programs that have insight regarding community values and relationships and could address individual community members' perspectives on the root causes of conflict, meaning there might be a higher likelihood of reaching points of consensus surrounding conflict-reduction. In particular, my results suggest that one way to do

this would be to restore a shared sense of place among ranching community members. As the future of research increasingly moves toward the study of socio-ecological systems, rather than treating social and ecological realms as separate entities, the inclusion of sense of place and symbolic meanings as they relate to conservation-oriented decision-making will be increasingly important for understanding perspectives about conflict on changing landscapes and creating conflict-reduction solutions for bear management (Escalera-Reyes, 2020; Hill, 2021; Jaicks, 2022).

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Appendix A.

34 statements made up the Q-Set

1. Our community benefits, mostly economically, from nature-based tourism and other natural amenities that have enticed people to move to or visit our area.
2. Compensation for depredation is not an acceptable way to deal with predators, because it signals that it's okay for them to be here.
3. The public should have to pay a tax if they want bears on the landscape, and that tax would be separate from any hunting/tag/ammunition revenues.
4. State and federal agencies (IDFG, MFWP, USFWS) are transparent about their goals for bear management.
5. Producers and livestock play an important role in the health of the ecosystem.
6. Bears, and other predators, belong on the landscape too, and they play an important role in the health of the ecosystem.
7. How I think about conflict and conflict-reduction has changed over time.
8. Range riders have huge potential moving forward because the extra eyes out there will improve the number of carcasses that can be compensated.
9. Once predators start killing livestock the only way to halt that behavior is to remove the individual/pack. Removal needs to be added to the toolkit of management and conflict-reduction.
10. Bears and people moving in equally threaten ranching livelihoods.
11. TV, and other media, negatively impact how urban people grasp rural life in the West, and what it's like to live and work around wildlife.
12. Technology, like drones and cameras, can provide us with knowledge to help ID and remove bears that have killed livestock.
13. Increasing conflict-reduction tools across the valley will get us a step closer to delisting bears.

14. Conflict with wildlife is a natural part of running a ranch operation.
15. Bears don't belong where people are, even as people expand further into forests and rangelands.
16. It's not natural for producers to have to be with cattle on the allotments.
17. The public appreciates the role that ranchers play in stewarding range landscapes and keeping these valleys undeveloped.
18. Bear conservation is for people who live in urban areas. Few rural communities want them around.
19. A hunting season will not solve the bear problem.
20. Allowing the state to manage bears, like was done with wolves, would allow producers the freedom to keep conflict with, and about, wildlife at an acceptable level.
21. Community level conflict-reduction programs are key to working around federal restrictions while still maintaining both ranchers and bears on the landscape.
22. Successful management has allowed elk populations to trend towards recovery, which keeps predators occupied on natural prey sources, rather than livestock.
23. Bears should fear and respect humans.
24. Since I started using tools, I feel a greater sense of security for myself, my family, and/or my livestock. (can include bear spray, dogs, any other tools that come to mind, etc.)
25. Second-home owners play an important role in conserving the ranching livelihood and reducing conflict by contributing to local organizations.
26. If producers were to receive financial compensation just for living within, or in between, grizzly bear recovery zone it would make it easier to live with bears in the future.
27. It's partially my responsibility to change my routine while riding, checking fence, or doing anything out on the range, to feel safe as predators increase.

28. Many conservation groups can still reduce conflict without having producers represented on the board, because producers and conservation groups often share the same goals.
29. Predators on the ESA are being used as weapons by people who don't live around them, and it restricts people who live around those predators from being able to maintain their livelihood.
30. By making technology more accessible, the industrialization of agriculture has allowed local ranch operations to persist.
31. As long as producers can financially and safely keep ranching on the land that our/their families have been on for generations, I don't care much about where grizzly bears reside.
32. Livestock guardian dogs could help deter predators in most ranch settings, and their benefits often outweigh the unintended consequences.
33. The stress of living with bears and wolves falls squarely on the agricultural community, and it shouldn't. The stress and financial impacts need to be shared.
34. An increase in the amount of fencing on the landscape and around the home would make me feel fenced in, rather than fencing predators out.