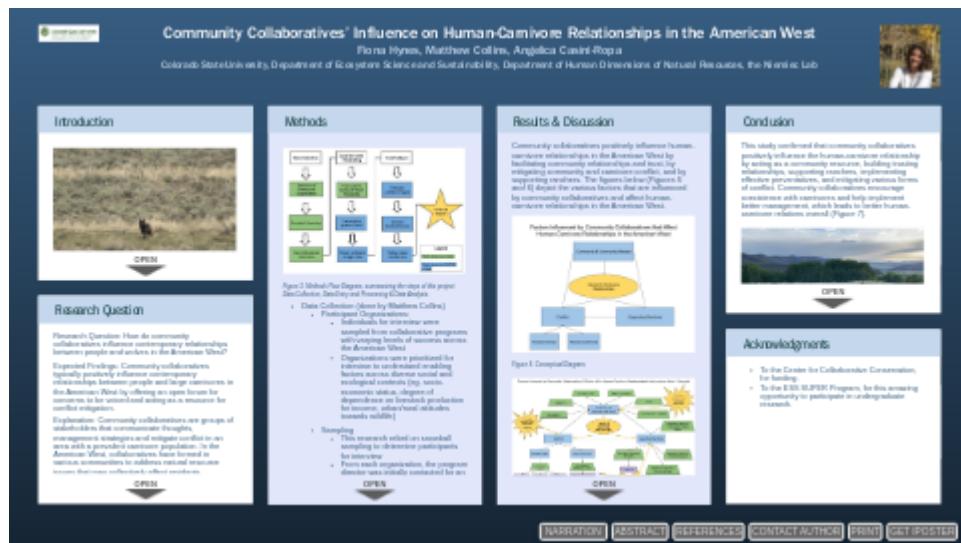


# Community Collaboratives' Influence on Human-Carnivore Relationships in the American West



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# INTRODUCTION

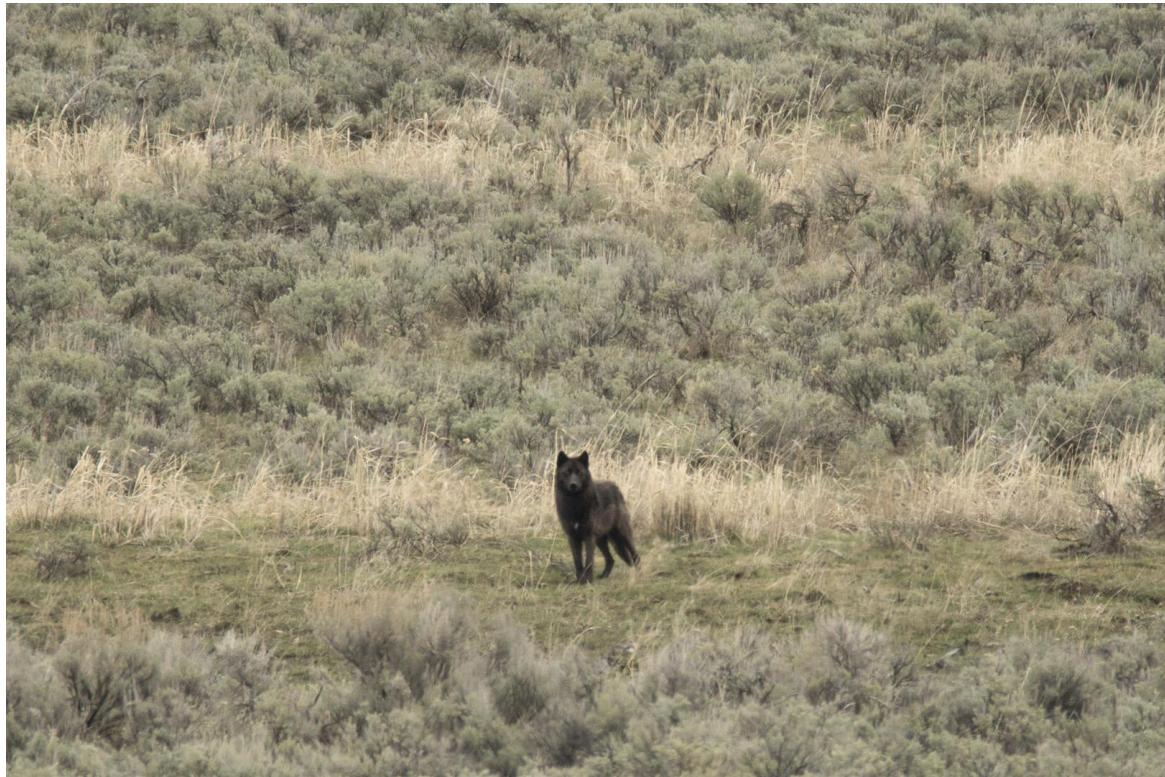


Figure 1. Photo of a wolf, captured by Matthew Collins.

The American West is expansive and home to a variety of ecosystems and unique creatures; it used to be wild and untouched, ruled purely by the laws of nature. As the global population continues to grow, these wild areas are encroached upon by urbanization which forces interaction between wild animals and modern society. While some of these interactions are inconsequential, some result in conflict. Carnivore-human conflict is a global issue that needs to be addressed; in the American West, the carnivores of interest are wolves and grizzly bears (wolf pictured in *Figure 1*, bear in *Figure 2*). Humans and carnivores tend to conflict because they have similar needs/wants: large open spaces and a protein rich diet (Treves and Karanth, 2003). While the conflict aspect is not new in this dynamic relationship between humans and wolves, the desire to achieve coexistence is. In the past, humans have taken wild ecosystems and domesticated them, exterminated wild food sources, and then exterminated large carnivores for threatening their stolen livelihoods. This history of extermination contributed to the extirpation of large carnivores from the American West and eventually to their listing as an endangered species. Endangered status makes it unlawful to kill carnivores, resulting in modern conflict. For example, the grey wolf (*Canis lupus*) was a member of the Endangered Species List since 1973 due to near extermination; consequential attempts to reintroduce this species in order to fortify the population have resulted in an increase in conflict (Center for Human-Carnivore Coexistence, 2020). Coexistence is necessary because large carnivores are typically key species thus crucial to ecosystem processes and livestock production continues to dominate land use, resulting in increased conflict (Boronyak et al., 2020). Previous research has shown that unique, community generated approaches for carnivore-human conflict mitigation yield the best results in moving towards human-carnivore coexistence. To reach the ultimate goal of long-term coexistence, human wildlife conflict management plans should be based on research specific to the ecosystem and community, incorporate citizens' input, and progress should be monitored following implementation of the plan (Treves et al., 2007). Various stakeholders are involved in working towards coexistence, ranging from conservationists, who want to preserve the species, to ranchers, who want to preserve their way of life. Ranchers are a main stakeholder involved carnivore-human conflict and while the losses are collectively minimal, each one is felt individually. For example, with the passing of Proposition 114 in Colorado, wolves will be reintroduced in 2023 and the overall economic losses are estimated to be about 1% of livestock (Center for Human-Carnivore Coexistence, 2020). Carnivore conflict and management are not only dependent on the biological environment but the sociopolitical climate as well; as public perception of carnivores moves from fear towards idolization and urban development continues to sprawl, management plans must move beyond the typical options of eradication, regulated harvest and preservation (Treves and Karanth, 2003). These management plans must be multidimensional, proactively address conflict and include the implementation of various methods, such as fencing, carcass removal and increased monitoring of livestock (Wilson et al., 2017). The purpose of this comprehensive study is to evaluate how community collaboratives in the American West influence modern relationships between humans and carnivores, specifically wolves. This study is informed by the research question: How do community collaboratives influence contemporary relationships between people and wolves in the American West?



Figure 2. Photo of a bear on a carcass pile, captured by Matthew Collins.

## RESEARCH QUESTION

Research Question: How do community collaboratives influence contemporary relationships between people and wolves in the American West?

Expected Findings: Community collaboratives typically positively influence contemporary relationships between people and large carnivores in the American West by offering an open forum for concerns to be voiced and acting as a resource for conflict mitigation.

Explanation: Community collaboratives are groups of stakeholders that communicate thoughts, management strategies and mitigate conflict in an area with a prevalent carnivore population. In the American West, collaboratives have formed in various communities to address natural resource issues that may collectively affect residents. Collaboratives can have varying degrees of success depending on within program factors such as methods to build trust and reduce social conflict, and ecological and social contexts that may influence the effectiveness of different management strategies.

# METHODS

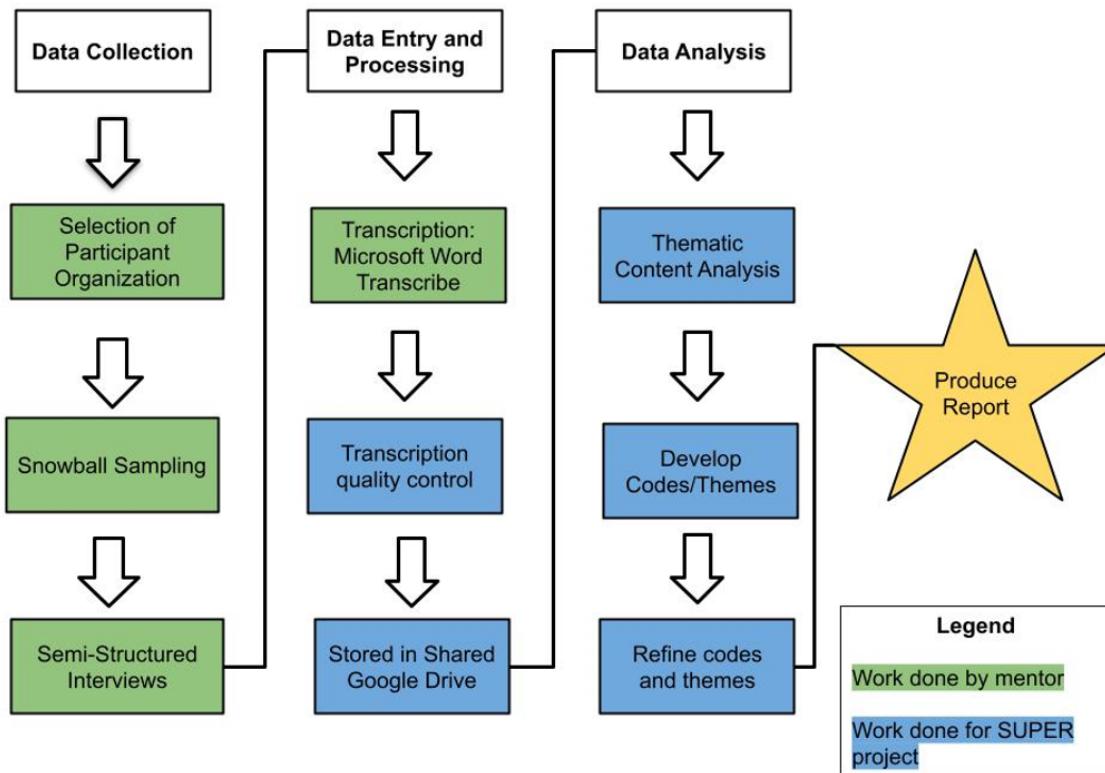


Figure 3. Methods Flow Diagram, summarizing the steps of this project: Data Collection, Data Entry and Processing & Data Analysis.

- Data Collection (done by Matthew Collins)
  - Participant Organizations:
    - Individuals for interview were sampled from collaborative programs with varying levels of success across the American West
    - Organizations were prioritized for interview to understand enabling factors across diverse social and ecological contexts (e.g. socio-economic status, degree of dependence on livestock production for income, urban/rural attitudes towards wildlife)
  - Sampling
    - This research relied on snowball sampling to determine participants for interview
    - From each organization, the program director was initially contacted for an interview. The program director then referred additional participants for an interview.
    - Ranchers, Wildlife Agency representatives, third-party facilitator, and conflict-reduction specialists were prioritized for interview within each organization

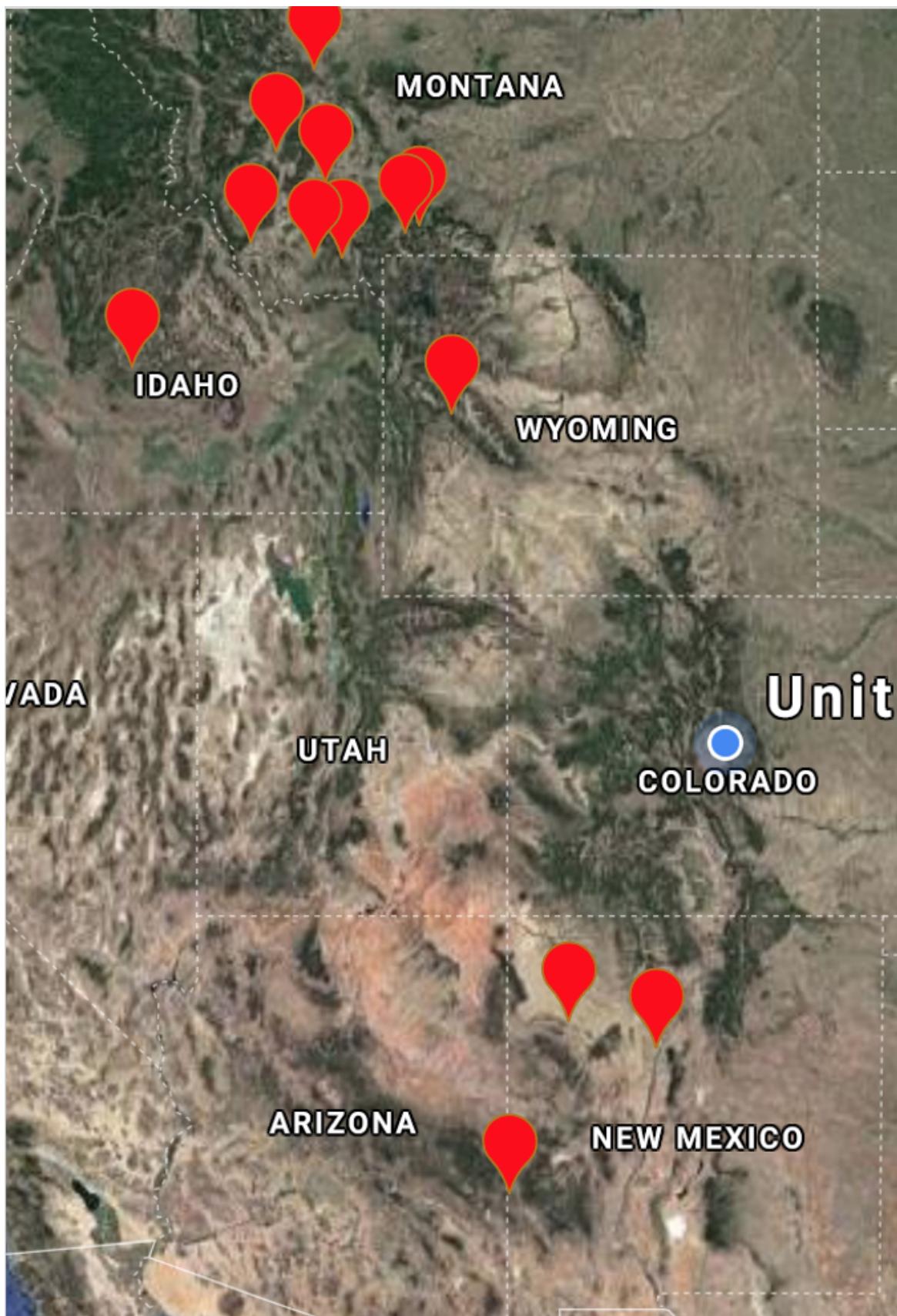


Figure 4. Study area showing all the interview sites, including the ten analyzed for this project, map by Matthew Collins.

- Data Collection (study area shown in *Figure 4*).
  - Voice memos were recorded to process the content of interviews and set directions for analyses and alterations to the interview script.
  - Semi-structured interviews were conducted with relevant stakeholders on-site or remotely by phone.
  - Interview protocols were piloted with project collaborators

- Data Entry and Processing (transcription as a group effort)
    - Recorded interviews were transcribed using Microsoft Word Transcriber.
    - Interview audio and transcripts were uploaded and shared into a Google Drive folder, so that everybody in the group could have access to them.
    - Each interview was then assigned to a group member, so that the transcription could be checked and refined against the original recording
  - Data Analysis (individually conducting thematic content analysis for specific research questions)
    - Thematic Content Analysis
      - Following the transcription of the interviews, thematic content analysis will begin in order to answer the research questions by searching for patterns in ten interviews.
      - This method allows for the identification of meaningful topics, patterns, and ideas inherent within the data (Braun and Clarke, 2006) Through an iterative process, themes and sub-themes will be identified, reported through memo writing, refined and then applied back to data.
      - Interviews will then be read through to find themes/patterns relating to the specified research questions, these themes and patterns will be organized into a codebook using NVivo12 software. These generated codes will then be refined into more defined themes and reviewed to ensure they answer the proper research question.
    - Thematic Analysis Process
      - “Familiarize self with data”
        - Process of transcribing, reading through, note-taking
      - Generate initial codes
        - Process of coding interesting features across entire dataset
      - Search for themes
        - Generate themes and gather data
      - Review themes
        - Make sure themes work with codes and dataset, create analysis map
      - Refine themes
        - Define and name themes
      - Produce report
        - Include extract samples, relate analysis to RQs and literature
- Data Interpretation (product as individual codebook, report, poster)
  - Once a refined codebook is generated, the prevalence of these themes will be evaluated.
  - This codebook will be reviewed in conjunction with a comprehensive literature review to conduct the analysis.
  - Through the process of identifying and refining codes, the thematic content analysis will be focused to explore identified research questions.

# RESULTS & DISCUSSION

Community collaboratives positively influence human-carnivore relationships in the American West by facilitating community relationships and trust, by mitigating community and carnivore conflict, and by supporting ranchers. The figures below (*Figures 5 and 6*) depict the various factors that are influenced by community collaboratives and affect human-carnivore relationships in the American West.

## Factors Influenced by Community Collaboratives that Affect Human-Carnivore Relationships in the American West

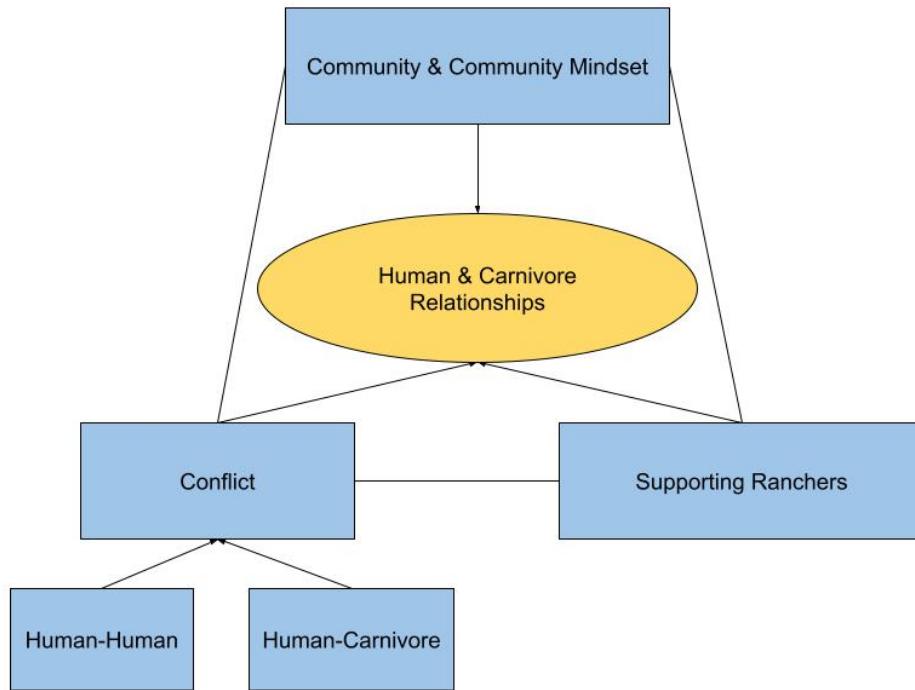
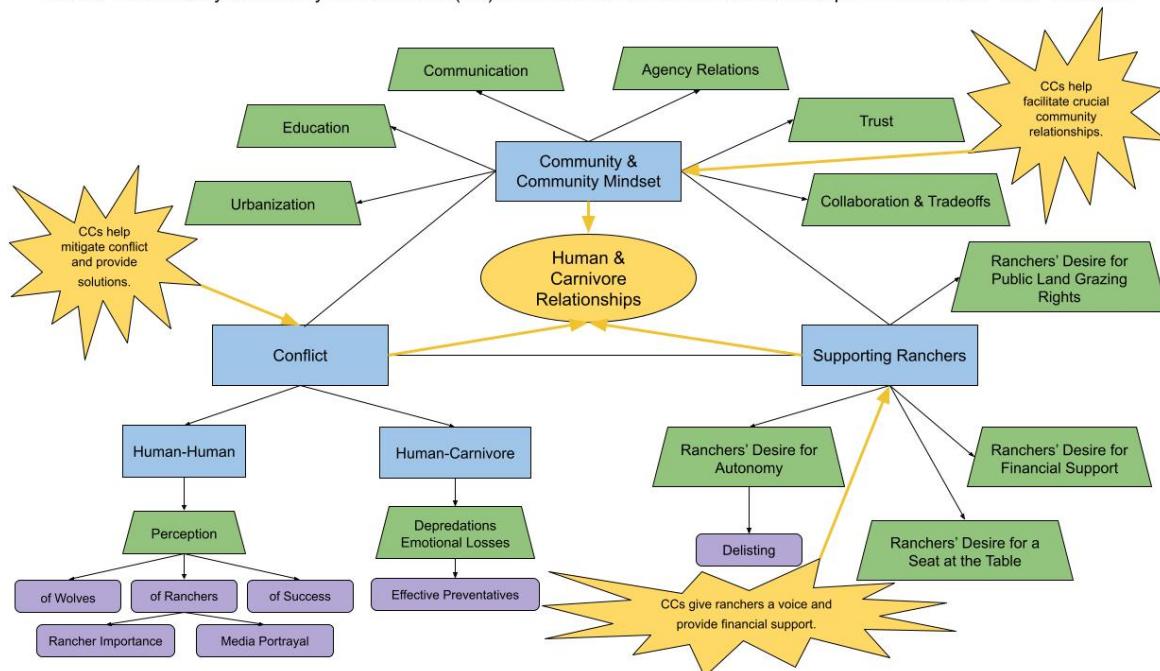


Figure 5. Conceptual Diagram.

## Factors Influenced by Community Collaboratives (CC) that Affect Human Carnivore Relationships in the American West - Extended



*Figure 6. Thematic Content Map.*

Community collaboratives foster a sense of community while acting as a resource for education and an open forum for discussion. Collaboratives also foster community and agency relationships by bringing both parties together for communication and collaboration. By making ranchers feel less alone and like they have a seat at the decision-making table, collaboratives encourage ranchers to be more open minded and have a better relationship with carnivores in general. These enhanced relationships are crucial, as one interviewee said, “If you’re ever going to solve a problem, you have to build relationships.”

Community collaboratives also mitigate problems by resolving community as well as human-carnivore conflicts. Community conflict arises from the variety of conflicting stakeholder values, community collaboratives work to change perspectives to be more holistic and open-minded. Public perceptions of carnivores, ranchers, and what long-term success looks like vary within a community, and this can lead to social conflict, which consequently negatively influences the human-carnivore relationship. This community mindset and collaboratives helping ranchers implement effective preventatives, such as carcass collection programs, fencing, fladry, range riding, and guard dogs, was exemplified in almost every interview.

Conflict, both within the community and due to depredation, is a major cause of negative human-carnivore relationships that community collaboratives work to reduce. Ranchers are important producers in the American economy and feel as though the general public wants more wildlife, including carnivores, without understanding or having to live with the repercussions, as one interviewee said: “ranchers, they kind of feel like they’re a little bit out there on an island where you know a lot of the public sentiment wants more wildlife.” If ranchers are to have positive human-carnivore relationships and strive for coexistence, they must be supported in their desires. Common rancher desires include delisting carnivores so lethal action can be taken when necessary, a seat at the table, financial support for implementing preventatives or through loss compensation, and grazing rights on public lands.

Community collaboratives fight for and represent rancher desires and values, which encourages ranchers to return the favor and strive for coexistence with carnivores. Successful community collaboratives, such as the Blackfoot Challenge or the Upper Green Cattle Association, have fostered better human-carnivore relationships as they strive for coexistence by implementing better management practices and more effective preventative measures while building trusting community relationships.

Possible study limitations include possible bias due to the snowball sampling method and only one coder was used in the analysis process thereby reducing the analytical vigor.

## CONCLUSION

This study confirmed that community collaboratives positively influence the human-carnivore relationship by acting as a community resource, building trusting relationships, supporting ranchers, implementing effective preventatives, and mitigating various forms of conflict. Community collaboratives encourage coexistence with carnivores and help implement better management, which leads to better human-carnivore relations overall (*Figure 7*).



*Figure 7. Happy mountain cows, coexisting with wolves and humans.*

## ACKNOWLEDGMENTS

- To the Center for Collaborative Conservation, for funding.
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## ABSTRACT

Ranchers in the American West are having to deal with the reintroduction of wolves (*Canis lupus*) as conservationists strive to restore the species' historical range. Community collaboratives mitigate the conflict that arises between predator and producer while serving as a community resource. While studies have assessed the effectiveness of collaboratives in reducing conflict, few studies have assessed how collaboratives may foster positive community relationships. Further, few studies have assessed how collaboratives increase acceptance of carnivores through enabling proactive depredation solutions and helping ranchers bear the financial burdens of livestock loss and these proactive solutions. To explore whether community collaboratives build tolerance towards carnivores, this study utilizes thematic coding analysis to analyze interviews regarding community collaboratives' effect upon human-carnivore relations in the American West. It was concluded that community collaboratives positively influence contemporary relationships between people and carnivores by offering an open forum for discussion. Community collaboratives increase positive perceptions of carnivores by reducing anger through offering proactive solutions and by giving ranchers a voice while reducing stress by helping bear financial burdens. Overall, how ranchers feel they are being treated greatly effects how they treat carnivores and community collaboratives are crucial for making ranchers feel heard and valued.

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