

THE INFLUENCE OF SOCIAL MEDIA INTERACTIONS ON PERCEPTIONS OF AND  
ATTITUDES TOWARD MEXICAN GRAY WOLVES

By

Kaycie Waters

---

Copyright © Kaycie Waters 2019

A Thesis Submitted to the Faculty of the

DEPARTMENT OF AGRICULTURAL EDUCATION

In Partial Fulfillment of the Requirements

For the Degree of

MASTER OF SCIENCE

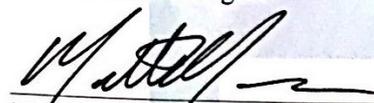
In the Graduate College

THE UNIVERSITY OF ARIZONA

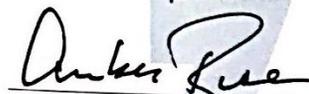
2019

THE UNIVERSITY OF ARIZONA  
GRADUATE COLLEGE

As members of the Master's Committee, we certify that we have read the thesis prepared by Kaycie Waters, titled *The Influence of Social Media Interactions on Perceptions of and Attitudes Toward Mexican Gray Wolves* and recommend that it be accepted as fulfilling the dissertation requirement for the Master's Degree.

  
Matthew M. Mars

Date: 6-21-2019

  
Amber Rice

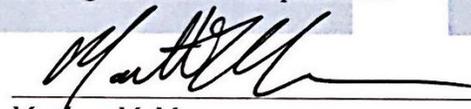
Date: 6-21-2019

  
Scott Bonar

Date: 6-21-2019

Final approval and acceptance of this thesis is contingent upon the candidate's submission of the final copies of the thesis to the Graduate College.

I hereby certify that I have read this thesis prepared under my direction and recommend that it be accepted as fulfilling the Master's requirement.

  
Matthew M. Mars  
Master's Thesis Committee Chair  
Department of Agricultural Education

Date: 6-21-2019



## **Acknowledgments**

I want to thank all of those who helped make this project possible. Thank you to my amazing committee for supporting me, guiding me, and inspiring me to do the best I can. Thank you to my phenomenal advisor, Matt Mars, who helped me grow and develop into the social scientist I am today. Finally, thank you to my family, especially my parents, for always believing in me. Their love and support is what fueled the efforts for this thesis, and for that I am forever grateful.

## Table of Contents

Abstract .....	5
Introduction.....	6
Literature Review.....	8
Mexican Wolves and Rancher Conflict .....	8
Online Communities .....	10
Goals .....	11
Conceptual Framework.....	11
Methods.....	13
Study Design and Site .....	13
Sampling.....	14
Data Collection.....	15
Data Analysis .....	16
Positionality and Trustworthiness .....	17
Limitations .....	18
Findings.....	19
Narrative Structures.....	19
Intellectual Value .....	19
Social Value .....	22
Cultural Value .....	23
Political Value.....	26
Discussion.....	28
Cultural Echo Chambers .....	28
Political Value.....	29
Conclusion .....	30
References.....	33

## **Abstract**

Many socio-political issues arise when predators are reintroduced into areas that are concurrently used by ranchers. This is especially true for the endangered Mexican gray wolf in eastern Arizona. While the socio-political issues are well documented, there is a gap in understanding of what influences the formation of ranchers' perceptions of and attitudes toward Mexican gray wolves and their reintroduction. My study explores how social media and interactive communication influence ranchers' perceptions of and attitudes toward this topic. I theoretically frame the study with the three value-types of online communities identified by Seraj (2012). These value types are: intellectual value, social value, and cultural value. A qualitative, ethnographic design is used to discover how ranchers' perceptions and attitudes are formed in relation to the wolf reintroduction. Seraj's value-types provide insights to how interactive communication among ranchers influences their views of predator reintroductions. Analysis of data collected through interviews, online community observations, and documents, reveals political value as a fourth value type that contributes to interactive communication. Ranchers' experiences with government agencies heavily influences their views on government projects. Cultural value, however, tends to have the most influence on how information is received via online communities. This creates a cultural vacuum, where the expression of outside views leads to defensive discussion that maintains and strengthens the culture of the community rather than foster its refinement and evolution. The use social media as a way to communicate information is rendered ineffective if the information shared is not in line with the online community culture. Instead, wildlife managers can more effectively communicate with this important stakeholder group by engaging in personal, individual communication with members of this group. Wildlife managers can turn to online communities to prepare for this in-person communication.

## Introduction

Conflict between apex predators and agriculture has been well documented in the literature, as apex predators (e.g. bears, cougars, wolves) can threaten the safety of cattle, sheep, and other grazed livestock (Goljani Amirkhiz, Frey, Cain, Breck, & Bergman, 2018; Jacobs, Main, & Pienaar, 2018; Lindsey, du Toit, & Mills, 2005). This conflict is heightened when wildlife management professionals reintroduce predators into areas that are concurrently used by ranchers (Jacobs et al., 2018; Lindsey et al., 2005; Schoenecker & Shaw, 1997). While conflicts between predators and ranchers have been documented, there is a gap in the literature specific to how the perceptions and attitudes ranchers have toward predators and their reintroduction are developed and sustained. Specific to the current paper, this gap is especially relevant to the Mexican gray wolf reintroduction project in eastern Arizona (AZ). Specifically, the study of public perceptions before the first wolves were released revealed that 58% of people surveyed were against the project and the overall reintroduction of the wolves (Schoenecker & Shaw, 1997). To date, however, no other follow up studies have been performed.

Programs to eradicate predators in the 1800's and 1900's led the Mexican gray wolf into near extinction (U.S. Fish and Wildlife Service, 2017b). In fact, the current population of Mexican wolves began from only five individual animals that were used by wildlife officials to start an intensive captive breeding program following the 1982 Recovery Plan for the species (U.S. Fish and Wildlife Service, 2017b). The wolves from this breeding program were reintroduced in the United States in 1998 across habitat that spans AZ, New Mexico (NM), and Mexico (U.S. Fish and Wildlife Service, 2017b). Currently, the Mexican gray wolf remains listed as endangered under the United States Endangered Species Act with an estimate in 2017 of only 113 wolves surviving in the wild. (U.S. Fish and Wildlife Service, 2017b).

The reintroduction of the Mexican gray wolf has raised a number of socio-political issues (Povilitis, Parsons, Robinson, & Becker, 2006; Schoenecker & Shaw, 1997; Walsh, 2013). While many environmental and conservation groups support the reintroduction, there are members of the public who are concerned about how the wolves will affect their safety and livelihoods. This is especially true for ranchers in the reintroduction areas. U.S. Fish and Wildlife Service has lethally removed Mexican gray wolves that prey on ranchers' livestock in order to address ranching community concerns (U.S. Fish and Wildlife Service, 2017b, 2017a). Yet, this step can have grave impacts on the success of the reestablishment of the wolves (U.S. Fish and Wildlife Service, 2017b). Instead, wildlife management agencies need to work with, and not against, ranching communities to increase the likelihood of the recovery of Mexican gray wolves successful, which includes ensuring the interests of the ranchers are understood and met. Knowledge of how ranchers' perceptions and attitudes toward the Mexican gray wolf reintroduction project are influenced can help wildlife management professionals be better prepared to effectively communicate with ranchers and ultimately collaborate toward a sustainable species reintroduction.

Accordingly, I qualitatively explored the factors that influence the perceptions and attitudes ranchers have toward Mexican gray wolves. I defined perceptions as what individuals believe to be true about a subject, and attitudes as the importance individuals place on their perceived truth. If wildlife managers understand the various ways ranchers think about and understand the implications of wolves in their shared spaces and how these thoughts are shaped and sustained, they can begin to find new and more effective ways to communicate and, more ideally, collaborate. Social media served as the empirical point of analysis of my exploration of AZ ranchers' perceptions and attitudes of the Mexican gray wolf reintroduction project.

Specifically, I identified who are likely to participate in social media conversations and observed the exchanges that occur through such conversations. In turn, I compared the insights generated through my observation with data collected through interviews with a sample of Eastern AZ ranchers. By understanding how social media and other sources of information influence the perceptions and attitudes held by ranchers toward predator reintroduction projects, wildlife management agencies will be better positioned to strategically decide how to communicate and collaborate with this important stakeholder group project.

## **Literature Review**

### ***Mexican Wolves and Rancher Conflict***

Conflict can occur when people and predators share a common landscape (Johnson & Wallach, 2016; Morehouse, Tigner, & Boyce, 2018). One such conflict appears when apex predators, such as Mexican gray wolves, inhabit land that is concurrently used by ranchers (Jacobs et al., 2018; Morehouse et al., 2018; Schoenecker & Shaw, 1997). Many ranchers perceive that predators pose a threat to their herds through the possibility of livestock killings (e.g. depredation) (Jacobs et al., 2018; Johnson & Wallach, 2016; Morehouse et al., 2018). Indeed, some ranchers will go as far as to use means of lethal removal to protect their herds from predators (Johnson & Wallach, 2016; Morehouse et al., 2018). While some government programs offer compensation for animals lost to predators, these programs often underestimate the amount of income lost through depredation (Morehouse et al., 2018). Many compensation programs also require ranchers to document the depredation event, which is difficult when livestock are on large ranges and cannot be easily tracked individually (Jacobs et al., 2018).

Although humans often see predators as a threat, apex predators play a key role in maintaining healthy and diverse ecosystems (Johnson & Wallach, 2016; Letnic, Ritchie, &

Dickman, 2012; Parsons, 1998). This is why the reintroduction of apex predators, like the Mexican gray wolf, is so important for wildlife management. Reintroduction of apex predators can help manage population numbers of meso-carnivores, ungulates, and small mammals (Johnson & Wallach, 2016). Removal of these important apex predators can cause prey population numbers to grow large enough to cause significant damage to landscape vegetation through over-grazing and browsing pressure (Johnson & Wallach, 2016). Maintaining healthy apex predator populations is thus important for overall ecosystem health and function (Johnson & Wallach, 2016; Letnic et al., 2012; Parsons, 1998).

Gray wolves are a species specific to the United States that was targeted for eradication for many years (Lappalainen, 2018; U.S. Fish and Wildlife Service, 2017b). A subspecies of the gray wolf, the Mexican gray wolf, was reintroduced into AZ and NM in 1998 causing a number of socio-political issues to arise (Schoenecker & Shaw, 1997; U.S. Fish and Wildlife Service, 2017b; Walsh, 2013). Public attitudes toward the reintroduction continue to be mixed, with backlash from some stakeholders, including ranchers, hindering the progress of the reestablishment of the Mexican gray wolf population (Schoenecker & Shaw, 1997; Walsh, 2013). In fact, the removal of wolves by wildlife management agencies due to encounters with humans or depredation on livestock has been the primary source of wolf mortalities (U.S. Fish and Wildlife Service, 2017b). Collaboration with the public is one way to increase the success of the Mexican gray wolf (U.S. Fish and Wildlife Service, 2017b), but to do this it is important to understand what is influencing the perceptions and attitudes people have about wolves. Previous research has explored public perceptions through survey research and town hall observations (Schoenecker & Shaw, 1997), but none have been focused on recent perceptions and attitudes developed through dialogue on interactive social media sites.

### *Online Communities*

The use of social media as a communicative device has continually increased over the past decade (Perrin, 2015). This contemporary communication platform allows for another way to investigate the public's perceptions of and attitudes toward different socio-political issues, and how such perceptions and attitudes are shaped and sustained through online interactions (Di Minin, Tenkanen, & Toivonen, 2015). In this regard, online communities provide social spaces for the consumption and creation of knowledge (Seraj, 2012). The use of social media and other online community platforms also allows for people in different regions to come together to discuss and debate common topics and issues (Costello, McDermott, & Wallace, 2017). Seraj (2012) identified three values that explain how people are brought together to interact and influence one another via online communities: intellectual, social, and cultural. Each value is described further in the paper. While these values have been explored in the context of marketing, they have yet to be applied to research on how the promotion of ideas through online communities influences and sustains public perceptions of and attitudes toward controversial social and political issues such as predator reintroductions.

Online community values may have a key role in understanding what influences public perceptions of and attitudes toward predator reintroductions. However, few studies to date have researched how social media usage may impact the perceptions of conservation work (Di Minin et al., 2015). For example, Williams et al. (2014) conclude that social media may offer the best tool for campaigning environmental sustainability to social media users. Similarly, Di Minin et al. (2015) suggest that social media data can be used to explore how different groups of people view and value biodiversity conservation. It is well-documented that ranchers of various ages are using social media as a form of marketing and online communication (Graybill-Leonard,

Meyers, Doerfert, & Irlbeck, 2011; Telg & Barnes, 2012). This body of literature supports the possibility of using social media campaigns to communicate environmental issues with ranchers.

## **Goals**

In the current study, I used social media as an empirical point of analysis to explore eastern AZ ranchers' perceptions of and attitudes toward the Mexican gray wolf reintroduction project. It is important to identify how intellectual, social, and cultural values are created and shared within the online communities used by ranchers, and how such values influence their perceptions and attitudes toward the Mexican gray wolf reintroduction. An understanding of this will help wildlife management professionals find more effective and efficient ways to communicate and ultimately collaborate with ranchers.

## **Conceptual Framework**

This study was framed using Seraj's (2012) three values of online communities. Seraj (2012) uses Zeithaml's definition of value to identify the three constructs of online communities. Specifically, value is defined as the consumers assessment of the usefulness of a product or service based on the differences between what they believe is received and what they believe is given (Zeithaml, 1988). The use of value in the context of the conceptual framework is specific to the benefits, real or perceived, that individuals gain through active participation in online communities. Hereafter, my use of value is consistent with this definition. Seraj (2012) identified the three preceding values (i.e., intellectual, social, cultural) through a discourse analysis of an online airline community (Seraj, 2012). I used these three values to guide my own analysis of some of the online communities that ranchers use as a source of information on the Mexican gray wolf reintroduction project.

The first of the three values of online communities is intellectual (Seraj, 2012). The primary characteristic of the intellectual value is users' understanding that knowledge in online communities is co-created (Seraj, 2012). Seraj found that social media users believe that content shared within their particular community is unbiased and trustworthy because it is co-created by many users that share a common topical interest (Seraj, 2012). Zwick et. al. (2008) described such co-creation of knowledge as occurring when information that cannot be generated by corporations is created by empowered consumers. Here, I extended this construct to include ranchers who use social media sites to inform themselves, and others, about the Mexican gray wolf reintroduction project. Ranchers are seen as the "empowered consumers" and conservation groups, wildlife management agencies, and those promoting the reintroduction of the Mexican gray wolf as being "corporate-like."

The second value of online communities is the social (Seraj, 2012). Online communities allow for interactive engagement and connection between participants (Gordon, 2010). These interactions can create stronger relationships among participants and build loyalty to and within the online community (Seraj, 2012). Storytelling and the sharing of beliefs and thoughts on a shared topic of interest contributes to the social value of an online community (Seraj, 2012). In this study, I explored if and how ranchers use social media to share with one another stories involving Mexican wolves and discuss their experiences with and beliefs about the reintroduction project. The social value created through these common experiences and beliefs is likely to play a vital role in the formation and maintenance of the perceptions and attitudes ranchers have toward Mexican gray wolves and their reintroduction.

The third value of online communities is the cultural (Seraj, 2012). Culture is composed of shared beliefs, norms, and values that connect individuals relevant to a specific context, which

over time fosters a collective identity (Davis, 1984). The co-creation of knowledge (i.e., intellectual value) and the sharing of stories and interaction among participants (i.e., social value) contribute to the creation of the cultural value within an online community. The culture of the online airline community that was explored by Seraj (2012) was created and reinforced by the exclusivity “to the specific group of people who have some knowledge, bond, excitement, and curiosity about aviation” (p. 217). Shared experiences and passions that create a sense of belonging in a community contribute to the cultural value. Cultural value in ranching communities may be created and enhanced in the social media sites used by ranchers.

## **Methods**

### ***Study Design and Site***

Eastern AZ is a rural region that is composed of less than 5% of the state’s population (approximately 356,000 people; 33,780 square miles) (“Arizona Population 2019,” 2019; “Counties Of Arizona,” 2019). Cattle were raised on the land that now makes up AZ well before the Gadsden Purchase took place in 1853 (Moresey, 1950) with ranching continuing to be one of the largest agricultural commodities in AZ today (Murphree, 2018). The vegetation of the landscape grazed in eastern Arizona varies greatly, from grasslands to chaparral and pinyon-juniper forests (Nichol, 1937). Mexican gray wolves typically use these forested terrains (U.S. Fish and Wildlife Service, 2017b).

I relied on a single qualitative case study design (Yin, 2009) to explore the guiding research question. I opted for a single case study design in order to confine the data and analysis in a defined socio-geographic region (i.e., eastern AZ). Specifically, the case was bounded by the reintroduction of the Mexican gray wolf in eastern AZ and conceptually guided by Seraj’s (2012) three value types. The boundaries of eastern Arizona are flexible, as Mexican gray wolves travel

outside of politically defined counties. This single case study design with flexible boundaries that encompass Mexican gray wolf movements allowed for a more focused, in depth study.

### *Sampling*

I conducted the study using an ethnographic approach that involved multiple methods of data collection (Glesne, 2015; Taylor, Bogdan, & DeVault, 2015). The discourse that took place between 2013 and 2019 through five online communities relevant to conservation and ranching served as primary data. Here, I define and limit online communities as groups of individuals that engage in discussion of the Mexican gray wolf reintroduction project through social media platforms. These platforms include Facebook, electronic magazines and newspapers, and blog sites. Also, semi-structured interviews and focus groups with eastern AZ ranchers (n = 13) were conducted to capture individual perceptions of and attitudes toward the Mexican gray wolf reintroduction. The insights gained through the interviews and focus groups were compared with the patterns revealed through the analysis of the social media discourse. This data triangulation enhanced the trustworthiness and transferability of the study.

The five online communities were purposefully selected (Onwuegbuzie & Leech, 2007; Patton, 2002) based on information provided by the ranchers who were interviewed. The communities included the Arizona Cattle Growers Association Facebook page, The Westerner blog, Beef Magazine, Western Livestock Journal, and the White Mountain Independent newspaper. These communities allow for participants to comment on information and exchange thoughts about the topics relevant to ranching, which includes the Mexican gray wolf reintroduction effort.

For this study, ranchers within the Mexican gray wolf habitat and proposed habitat expansion (U.S. Fish and Wildlife Service, 2017b) were targeted. I contacted prospective

participants through my attendance at the Wilcox-San Simon Natural Resources Conservation District (NRCD) meeting, which was held on February 28<sup>th</sup>, 2019 as a public event.

Concurrently, an invitation to participate in the study was sent to NRCD members through the group's newsletter. Members of the AZ Cattle Growers Association were also extended an invitation through a third-party contact. Ranchers with an interest in participating in an interview or focus group contacted me directly. Additionally, chain sampling strategies were used to identify and recruit more participants (Biernacki & Waldorf, 1981). A total of 13 ranchers were interviewed either individually or in small groups. A total of seven individual interviews and two focus groups were held. (Kitzinger, 1995). Pseudonyms were assigned to participants in order to maintain individual anonymity.

### ***Data Collection***

The ethnographic study of online communities is referred to as netnography (Costello et al., 2017; Kozinets, 2002). Netnography is an increasingly common qualitative tool used by social scientists (de Valck, van Bruggen, & Wierenga, 2009) to explore online communities and “identify and understand the needs and decision influences of relevant online consumer groups” (Kozinets, 2002, p. 63). The key term “Mexican gray wolf” (and its plural version) was used to search through the dialogue in each online community in order to find discussions relevant to the reintroduction project. Those discussions identified through the search were captured using computer screenshots. A total of 50 separate online community posts that spanned 2013 to 2019 were analyzed. I used netnographic techniques to compare what ranchers said in interviews and focus groups with what was being discussed within online communities. Online community observations have been shown to increase the ability of researchers to conduct their studies without influencing the other data being collected (Kozinets, 2002). Accordingly, online

communities were observed without any active participation on my part as the researcher. If a profile was needed, I identified myself as a graduate student and researcher per The University of Arizona's human subject protection protocol.

The interview and focus group protocol was designed to capture the sources of information that ranchers use to inform themselves and others about the Mexican gray wolf and its reintroduction (see Figure 1). The protocol also encompassed Seraj's (2012) three values of online communities (intellectual, social, cultural). Example questions include the following: What are your information sources on the reintroduction project? (intellectual value), What kind of social interactions do you have on these sites (or with these information sources) and how do these interactions influence your views? (social value), What kind of culture or common beliefs surrounds the sources of information that you use? (cultural value). Interviews and focus groups were conducted in locations determined by each individual interviewee, were audiotaped, and later transcribed.

### *Data Analysis*

Data were analyzed primarily using a deductive approach. Specifically, a structured set of codes composed of constructs developed from Seraj's (2012) articulation of intellectual, social, and cultural values (see Figure 1) was developed and systematically applied to the data (Miles & Huberman, 1994). For these codes, ranchers were defined as those who operate or work on a ranch in eastern AZ. Conservationists (i.e. wildlife management professionals) were defined as those working to restore the Mexican gray wolf population. Lastly, citizens were defined as those who are not ranchers or conservationists but nonetheless participate in interactive online communication about Mexican gray wolves. The discourse between these three groups generated

further insights on the formation of intellectual, cultural, and social values within the online communities included in the study.

<b>Coding Categories</b>	<b>Shorthand Code</b>
Intellectual Value/Ranchers	IV – R
Intellectual Value/Conservationist	IV – C
Intellectual Value/Citizen	IV – Z
Social Value/Ranchers	SV – R
Social Vale/Conservationist	SV – C
Social Value/Citizen	SV – Z
Cultural Value/Ranchers	CV – R
Cultural Value/Conservationist	CV – C
Cultural Value/Citizen	CV – Z

*Figure 1: Codes used for deductive analysis*

First, the interview transcriptions and online community observation data were ideographically analyzed (Gelo, Braakmann, & Benetka, 2008). Idiographic analysis involves coding individual pieces of data using the structured set of codes. Memos were used to record themes that emerged throughout this phase of the analytical process. Nomothetic analysis followed, in which the memos from the idiographic analysis were coded collectively to reveal common patterns (Gelo et al., 2008). Next, multiple rounds of axial coding were performed in order to further refine the patterns until final themes were revealed (Glaser & Strauss, 1967). Secondly, the data were inductively coded using an open coding strategy (Glaser & Strauss, 1967). This step allowed me to identify any additional relevant patterns or themes that were not captured through deductive analysis.

### ***Positionality and Trustworthiness***

In qualitative research, the researcher is the primary instrument (Glesne, 2015). My personal involvement in wildlife conservation agencies, through volunteering and employment as a Terrestrial Wildlife Specialist with the AZ Game and Fish Department, influenced my view of the Mexican gray wolf project. I am supportive of the reestablishment of this species, but also

understand the concerns ranchers have for their livestock and overall economic wellbeing. In order to reduce the potential for bias, data were analyzed by my graduate advisor and myself in order to establish and apply a more objective coding strategy (i.e., researcher triangulation) (Glesne, 2015; Riege, 2003). Multiple forms of data (i.e., interviews, focus groups, online observations) were also collected and analyzed in order to further enhance the trustworthiness of the findings (i.e., data triangulation) (Glesne, 2015; Riege, 2003). Memos and detailed field notes were kept throughout the duration of the research in order preserve ideas and monitor the integrity of my analysis (Birks, Chapman, & Francis, 2008). The resulting audit trail provided a record of my research activities that can be used to support future replication of the study. The steps taken to enhance the trustworthiness of the findings also increases the likelihood that the insights generated here are transferrable to similar contexts (e.g., reintroduction projects of predators in other regions) (Riege, 2003).

### *Limitations*

My study was limited by access to participants and participants' lack of trust toward university researchers. Some participants expressed a lack of trust in university research that often discounts the challenges ranchers' face with preference instead being directed at the success of the reintroduction project. While extensive efforts were made to recruit participants, many ranchers were unable or unwilling to participate in this study. This lack of trust may have led to the withholding of information by participants. Additionally, online community observations were limited by the comments that were publicly available to me. Comments were coded at face-value, and it is possible that comments by citizens were coded as rancher or conservationist comments and vice-versa.

## **Findings**

### ***Narrative Structures***

The five online communities identified for this study varied in the way narratives are set up and, more importantly, how the exchange of information is fostered. Some communities simply re-post or share articles from various sources including local and national news sites, wildlife advocate websites (e.g., biodiversity.org), letters to the editor, and/or email communications. For example, a majority of the posts in the Arizona Cattle Growers Association Facebook page simply contain links to various articles or shared pictures from meetings. Other online communities, like The Westerner Blog, post commentary from the owner of the site along with links to articles.

One common structural element shared across the communities is the ability for participants to comment on shared materials. In particular, participants are able to provide public comments on and engage in interactive discussions of shared content. The interactive sections of communities that foster comment exchanges and ongoing discussions are where much of the intellectual, social, and cultural values are created and contributed to by participants.

### ***Intellectual Value***

The intellectual value is regularly created and shared in the online communities observed in this study. A majority of the posts across all communities conveyed and contributed to the development of the intellectual value in various ways and to various degrees based on the inherent community-wide sharing of information. The intellectual value that is shared through posts is then either supported or criticized by participants sharing comments and engaging in discussion via threads and/or new posts. For instance, Ralph describes intellectual value that was formed through his own experiences in the following way:

I've got a strong of pack mules and we, we go into the Gila Wilderness and I've seen what they've [the wolves] done there...I've seen the elk population go from very healthy elk population to never seeing an elk and, and then I know they, they will be killing livestock.

Ralph then goes on to describe his encounter with wolves while leading a group through the Gila Wilderness:

I had people on foot with kids behind me and I rode up on horseback in this open area. These two wolves, both collared just like dogs, they didn't run off from me... they stood there and, you know 30-40 feet away from me, and just stood there...I didn't go on. I had, you know I was packing animals with gear and they [the people in the group] were hiking and they didn't you know. I stopped and I waited to make sure that they [the wolves] didn't make any moves at me...they stood their ground and I was afraid to go on...Scared me to death.

Ralph's description illustrates how the intellectual value that originates with personal experiences and perspectives can, and often is, shared and spread via online communities.

The tone of the intellectual value that originates from the experiences and perspectives of individual ranchers specific to wolves is almost always negative. In turn, this overarching tone spreads through online communities and contributes to and strengthens the general opposition of ranchers to the Mexican gray wolf reintroduction project. For example, one rancher commented within the Arizona Cattle Growers Association Facebook page, "It's [Mexican gray wolf reintroduction] a failed program, I've had biologists tell me that. So, throw money at it."

Conversely, the intellectual value that is created and shared by conservationists is overwhelmingly focused on the benefits of the re-introduction project. For example, the following article posted within The Westerner Blog illustrates the intellectual value that is created and shared by conservationists: "The Fish and Wildlife Service considers the [Mexican gray wolf] recovery program a success, according to a spokesperson." Conservationists often work to align the information they share through online communities with scientific studies. For example, one conservationist posted an excerpt from a particular article that stated, "According

to the most recent count, there are ‘at minimum 113’ Mexican gray wolves in the wild in Arizona and New Mexico, according to wildlife officials.” Yet, the intellectual value created and shared by conservationists within the online communities is often discredited by ranchers who also use the same sites when misaligned with their own intellectual value. While the intellectual value shared by conservationists often emphasizes the positive aspects of the reintroduction, the intellectual value shared by ranchers focuses on the negative. One article in Beef Magazine about a study done on wolf-cattle interactions in Idaho shared intellectual value that exhibits the threats the wolves present to cattle, “Wolf presence also may indirectly affect – and reduce – calf weaning weights and cow body condition in the fall, perhaps resulting in increased veterinary care and supply costs, and death loss to disease.” This statement did not originate with the researchers of the study, but instead was proposed by the Beef Magazine author who wrote the article on the study. The intellectual value that was created from this study aligns with those of other ranchers and as such works to highlight the perceived. negative effects associated with the wolf and its re-introduction.

While conservationists and ranchers tend to be on opposite sides of the intellectual value continuum, citizens often fall between the other two groups in a relatively indifferent position. In other words, citizens share intellectual value that rarely advocates for or against the introduction of the Mexican grey wolf. Instead, citizens simply share their perspectives. One citizen commented on an article posted in the White Mountain Independent, “Wolves are fearful and very shy of people – they do not attack them.” Another citizen shared intellectual value in the comments in Beef Magazine, “Wolves are not overpopulated and only a fraction of their original size.” The intellectual value provided by these individuals seems to be positive in reference to the wolves but is not strongly in support of or against the wolves. Oftentimes, the positive

comments posted by citizens sharing intellectual value will be discredited by ranchers who use the same online communities.

### *Social Value*

Social value is exhibited more often by ranchers than by citizens or conservationists. Many ranchers will draw on experiences that other ranchers managing cattle alongside gray wolves have had in order to strengthen their arguments against the Mexican gray wolf. For example, one rancher wrote in a letter that was posted in Beef Magazine, “Our area doesn’t have the additional threat of wolves, but our recent experiences gave us additional insight into the serious challenges many ranchers face with regard to predators.” While this rancher says that wolves are not an immediate threat to their cattle, they are creating and sharing social value by leveraging the experiences and perspectives of others to affirm their own concerns, whether real or perceived. Likewise, Anthony draws on and exemplifies the social value created by others to support his own concerns about the wolf,

My other concern is that from, just what I’ve read, but never had any experience from the wolf being aggressive with me or my family or my horses or anything, but I’ve heard stories and so it makes me uneasy.

More specifically, the Yellowstone wolf introduction is often referenced as an example of how wolf reintroductions can negatively affect prey populations. One rancher commented on a post in The Westerner Blog, “Large wolf populations can significantly reduce elk and deer populations – at least in places like Yellowstone, where wolves have thrived since their reintroduction.”

William referenced the Yellowstone wolf reintroduction in an interview,

...information from the Yellowstone reintroduction and the EIS, those conditions, it just wasn’t the same field. The Yellowstone reintroduction occurred after all the major fires that had occurred in the late 80s, and so the habitat issues there changed significantly and the prey base really just increased significantly, but that wasn’t the case on the AS [Apache Sitgraves].

Ranchers in eastern AZ will empathize with ranchers in other areas that manage livestock in an area shared with wolves, and vice versa. This sharing of common experiences does not advance a solution between the rancher-wolf conflict, but instead furthers the divide.

Social value is exhibited less frequently by citizens, but is still present in the online communities observed. Some citizens point to others' experiences, ranchers included, to affirm their own feelings about the wolf. One citizen commented on an article posted in Beef Magazine,

...I know from experience and stories from ranchers I have met that some fudge the numbers [of livestock depredations] by waiting for a wolf to find the dead cow or sheep and wait till the wolf has eaten some then killing the wolf and claiming predation.

The social value shared by this citizen draws on her or his personal relationship with particular ranchers to discredit the complaints of other ranchers. Another citizen looks to ranching communities in the Midwest to support solutions for ranchers in Arizona. This citizen commented on an article posted in The Westerner Blog, "Instead, stock can be protected through means accepted among ranchers in other regions who coexist with wolves, such as the Midwest." This citizen uses the social value to support solutions for coexistence. Importantly, citizens use the social value to promote the possibility of wolves and ranchers co-existing and/or to criticize ranchers' views of wolves. Social value by conservationists is not prominently exhibited within the online communities observed in this study.

### *Cultural Value*

Intellectual and social values are prominently shared and leveraged within and across the online communities and personal narratives analyzed in the current study. Both intellectual and social values contribute to the creation of cultural value, which is the most prominently observed

in this study. Further, the sharing and leveraging of the cultural value by citizens and conservationists is not as prevalent as that performed by ranchers.

Ranchers consistently create and share a cultural value that strongly opposes the wolf reintroduction. On an article posted in the White Mountain Independent, one rancher commented, “Scrap the wolf, we do not need it” and another rancher commented on a post in the Arizona Cattle Growers Association Facebook page, “Shoot, shovel, shut-up, or send them [the wolves] south.” In this regard, the cultural value exhibited by ranchers shows a dominant belief that the wolves are not needed or wanted. In an interview, Sadie said, “For some reason they [Mexican wolves], to me, they earned their right of almost extinction for something whether it’s human population and things like that and I just don’t think they should reintroduce them.” The cultural value created and disseminated by ranchers across the online communities strongly opposes the wolves. During an interview with Fred, he said,

Forgive the crudeness of the comparison, but this is like when you turn a child molester into a neighborhood near a school, you know. The people without kids are probably going to be okay. The parents with kids, they don’t want the person there. The wolf program is a little bit the same way. You have those that are on the periphery...but you get ranchers up there...they are seeing their livestock that they care about being harassed and damaged and hurt and some of the stories break your heart.

Ranchers care about their cattle and their livelihood, and their cultural value centers on protecting their way of life. The reintroduction of the Mexican gray wolf is thus seen as a threat, and the cultural value is oppositional to the Mexican gray wolf reintroduction.

The cultural value that is created and shared by ranchers also promotes a dislike and/or lack of respect for those who support the wolf reintroduction. One rancher’s comment on a post in The Westerner Blog read, “Isn’t there a clause in the bill of rights which protects the rancher from unlawful seizure of his property, i.e. by drooling tree huggers?” This rancher’s cultural

value shows a belief that those who support the wolf reintroduction project are not only acting unlawfully, but also out of ignorance and/or lack of understanding of the implication of the reintroduction on ranchers.

Some citizens exhibit a cultural value that supports the wolves. An article posted in The Westerner Blog said that one citizen argued with ranchers that, “Wolves have as much right to be on the landscape as cows.” This person supports the wolves and compares their plight to those of the cattle that ranchers feel are threatened by the wolves’ presence. Other citizens work to create and share a cultural value that undermines or disrespects those that are against the wolves. One citizen commented on a post in the White Mountain Independent, “These beautiful animals are sitting ducks for trigger happy gun owners.” While these comments overall show that citizens attempt to share a cultural value within online communities, their input is relatively minimal compared to the cultural value expressed by ranchers.

The cultural value is rarely created and shared by conservationists within the online communities. Yet, when cultural value creating and sharing is exhibited by conservationists the importance and validity of wolf recovery is central. One article posted in the Western Livestock Journal showed an example of the cultural value that is typical of that which is created and shared by conservationists by quoting a U.S. Fish and Wildlife spokesperson who said, “Recovery of the gray wolf under the Endangered Species Act (ESA) is one of our nation’s great conservation successes, with the wolf joining other cherished species, such as the bald eagle, that have been brought back from the brink.” The cultural value that is created and shared by conservationists that favors the wolves’ reintroduction is often countered and/or overshadowed by the oppositional responses that are commonly made by ranchers.

Cultural value has more influence within online communities than that of intellectual or social values. Information shared within an online community is interpreted based on the culture of that community. Information, experiences, and perspectives that are shared within, but not aligned with the dominant values of a particular online community is refuted, and in some cases outright rejected.

The cultural value within online communities leads to a community that falls within a cultural echo chamber. More specifically, it creates a space where only certain ideas and beliefs are shared or accepted (Dubois & Blank, 2018). The culture of the community decides what is and isn't accepted. Outside views that are presented within an online community often lead to defensive discussions that maintain and strengthen the culture of the community rather than foster its refinement and evolution. The defense and perpetuation of the intellectual and social values of the participants of the online community contributes to the strengthening and reverberation of the cultural value. Opposing views are rejected by participants of the online community, which in turn works to preserve and/or enhance the cultural value.

### ***Political Value***

A fourth value that is not represented in Seraj's (2012) value framework was revealed through the inductive analysis of the data. This fourth value is the political value, which is created through the sharing of online community participants' views of government agencies and programs. Political value specific to the Mexican gray wolf reintroduction, while not exhibited by conservationists, is occasionally exhibited by citizens and heavily expressed by ranchers. Ranchers associate the Mexican gray wolves with invasive government actions. One rancher commented on a post in Beef Magazine, "We... the people are allowing the unconstitutional act of not allowing ranchers to protect their personal property without risk of hundreds of thousands

in fines and jail.” The political value that is created and shared through this post centers on the rancher’s belief that the reintroduction of Mexican wolves infringes on his constitutional rights. Similarly, another post in The Westerner Blog was written by a rancher as an open letter to the Office of the National Ombusman hearing officers. The rancher writes, “The federal government has demonstrated it is oblivious to local needs. The wolves and its organic protection, the ESA, have held sway as the agency and the federal government’s priority. People don’t matter.” The political value that is typically created and shared by the ranchers is based on a common understanding that the government is extending beyond its legal boundaries when enacting the reintroduction project and is doing so with little to no regard for the livelihoods of ranchers and the well-being of communities. This is supported in the data collected through interviews with ranchers. In an interview, Ralph said, “It’s the bureaucrats that are on top of all of them [field employees], trying to destroy everything...Fish and Wildlife Service has got to be one of the most corrupt organizations in the world.” Overall, the ranchers express a lack of trust in the federal government, which in turn amplifies their opposition to the Mexican gray wolf reintroduction.

The political value that is created and shared by citizens is often in opposition to that which is put forward by the ranchers. For example, one post in The Westerner Blog quoted a citizen that said, “The government killed this wolf in secret and is hoping that her death won’t cause a stir...” However, and like the political value that originates with and is sustained by the ranchers, the political value of citizens sometimes reflects a sense of disappointment in the actions and competencies of the government. For example, one citizen contributed to the political value by commenting on a post in the White Mountain Independent, “Let’s get rid of the dangerous alligators in the republican administration and congress...They are far more

dangerous than any wolf.” While ranchers think that the government has been too invasive, citizens feel the government has not done enough to facilitate the reintroduction of the wolves.

## **Discussion**

The reintroduction of predator species poses many challenges to wildlife management professionals, especially when there are conflicts between the reintroduced predator species and human actors (e.g., ranchers) that use the same landscape (Goljani Amirkhiz et al., 2018; Jacobs et al., 2018; Lindsey et al., 2005; Schoenecker & Shaw, 1997). The reintroduction of the Mexican gray wolf has raised such conflicts with many eastern AZ ranchers. The most cited concern for those who opposed the project before the release of wolves were the negative effects on livestock and hardships for ranchers (Schoenecker & Shaw, 1997). An understanding of how intellectual, social, cultural, and political value influence rancher perceptions of and attitudes toward the reintroduction project can help wildlife management professionals communicate and collaborate with this and other stakeholder groups. While social media is undoubtedly a growing communication platform (Perrin, 2015), it may not be an effective campaigning tool for the promotion of predator reintroductions.

### ***Cultural Echo Chambers***

My findings have clearly shown that ranchers often share and discuss information about the reintroduction of the Mexican gray wolves within online communities. Such information and discussion is informally regulated by the culture of the online communities, which results in a cultural echo chamber. An echo chamber is a space where only certain ideas and beliefs are shared or accepted (Dubois & Blank, 2018). Accordingly, social media spaces may not be as effective for public relations as some may believe (Allagui & Breslow, 2016), and the cultural value expressed by the participants of an online community creates a space that becomes more

closed to new ideas and as reinforcing to established positions and beliefs. As the findings here indicate, it can be problematic when wildlife management professionals attempt to use social media as a way to share objective information about the Mexican gray wolves.

In the context of the Mexican gray wolf reintroduction, information about the wolves that is shared through social media and intended to objectively inform participants of the online communities can actually have the opposite effect, as the participants draw on the social value to protect and strengthen their culture (Karlsen, Steen-Johnsen, Wollebæk, & Enjolras, 2017). While citizens sometimes attempt to create and share the cultural value in the online communities observed in this study, their efforts are undermined within the dominant echo chambers of the communities. Similarly, the cultural value is being exhibited by conservationists in online communities, but conservationists do not draw on the social value to protect their culture in the same way ranchers do. Instead, the social value of conservationists is rarely observed. This may be because the wildlife management professionals that were identified as conservationists are not allowed to share personal views on social media due to federal and state agency employee regulations.

Ranchers, however, often create and share social value that reassures one another of the dangers wolves pose to their livestock. This social value contributes to the cultural echo-chamber, as ranchers help one another defend their positions and further strengthen their views. New or different ideas that do not align with the cultural value of the community are not only rejected, but contribute to the strengthening of the current cultural value.

### ***Political Value***

Political value was revealed as a fourth value that is created and shared within the online communities within this study. This may be especially relevant within the context of wildlife

management projects that are often run by state or federal agencies (Organ, Decker, Stevens, Lama, & Doyle-Capitman, 2014). The government involvement in these wildlife projects lead to the possibility of political issues arising (Hiroyasu, Miljanich, & Anderson, 2019; Pepin-Neff & Wynter, 2019; Serenari, Cobb, & Peroff, 2018). When communicating with stakeholders about wildlife management practices, it is important to consider the political value that is being created and shared by and between various stakeholder groups. Many of the ranchers observed in this study were opposed to the Mexican gray wolves not only because of the perceived threat to their livestock, but also because of their more general opposition to government actions. A study done by Young et. al. (2015) showed that many people, both ranchers and non-ranchers, believe politics can hinder the successful management of predators. Political positions play a key role in influencing the perceptions and attitudes ranchers have toward the Mexican gray wolf reintroduction, and thus the political value created and shared by this important stakeholder group must be carefully and strategically considered when designing and implementing communication campaigns. Understanding the political value of this stakeholder group may help create a more open conversation about how wildlife management officials and ranchers can work together.

## **Conclusion**

Opposition and conflict between wildlife management professionals and ranchers can and, as shown here, do in some cases spill over and influence larger public dialogues on controversial initiatives such as the Mexican grey wolf reintroduction project (Triezenberg, Knuth, & Yuan, 2011). Moreover, my analysis of the dialogue that occurs within the online communities used by ranchers reveals several characteristics of this stakeholder group that can help guide wildlife management professionals' interactions. This finding has led me to

recommend that wildlife management professionals carefully review online communities when preparing for and engaging in interactions with the various stakeholder groups (e.g., ranchers) that are involved in and have influence over predator reintroductions.

More specifically, I recommend that wildlife management professionals look to online communities to identify the intellectual, social, cultural, and political values that are being created and shared by and among the various stakeholder groups they aim to inform and influence. This can help wildlife management professionals identify important synergies and disconnects between the information, social interactions, cultural attributes, and political narratives that intersect and shape the various positions, perspectives, and experiences of stakeholder groups. For example, posts from an online community can help wildlife management professionals identify what sources of information a particular stakeholder group (e.g., AZ ranchers) finds reliable, and then use those sources during face-to-face discussions and in-person community outreach efforts to establish common ground and overall credibility. Wildlife management professionals can also work to identify the cultural value that is commonly created, shared, and sustained within the various online communities that transcend the complexities that are commonly associated with wildlife management initiatives. In short, online communities are promising tools for informing the manner in which wildlife management professionals initially interact and continually work with stakeholder groups.

Future research is needed to thoroughly understand the complexities of online communities. Here, my attention has been on online communities that are rancher-focused, but conservationist-focused communities may reveal a different dynamic. Future studies may analyze the dialogue that happens within conservationist-focused online communities to explore if an echo-chamber exists for conservationists as well. Further, research of online communities

that are more objective and inclusive of various groups (i.e. a municipal Facebook page) may reveal a more open, inclusive space to discuss ideas and influence views. If these online communities exist, they may provide a better channel through which to share information using social media.

## References

- Allagui, I., & Breslow, H. (2016). Social media for public relations: Lessons from four effective cases. *Public Relations Review*, *42*(1), 20–30. <https://doi.org/10.1016/j.pubrev.2015.12.001>
- Arizona Population 2019. (2019). Retrieved from <http://worldpopulationreview.com/states/arizona-population/>
- Biernacki, P., & Waldorf, D. (1981). Snowball Sampling: Problems and Techniques of Chain Referral Sampling. *Sociological Methods and Research*, *10*(2), 141–163. <https://doi.org/10.1214/aoms/1177705148>
- Birks, M., Chapman, Y., & Francis, K. (2008). Memoing in qualitative research: Probing data and processes. *Journal of Research in Nursing*, *13*(1), 68–75. <https://doi.org/10.1177/1744987107081254>
- Costello, L., McDermott, M. L., & Wallace, R. (2017). Netnography: Range of practices, misperceptions, and missed opportunities. *International Journal of Qualitative Methods*, *16*(1), 1–12. <https://doi.org/10.1177/1609406917700647>
- Counties Of Arizona. (2019). Retrieved from <https://www.arizonahighways.com/counties-arizona>
- Davis, S. M. (1984). *Managing Corporate Culture*. Cambridge, MA: Ballinger Publishing Co.
- de Valck, K., van Bruggen, G. H., & Wierenga, B. (2009). Virtual communities: A marketing perspective. *Decision Support Systems*, *47*(3), 185–203. <https://doi.org/10.1016/j.dss.2009.02.008>
- Di Minin, E., Tenkanen, H., & Toivonen, T. (2015). Prospects and challenges for social media data in conservation science. *Frontiers in Environmental Science*, *3*(September), 1–6. <https://doi.org/10.3389/fenvs.2015.00063>
- Dubois, E., & Blank, G. (2018). The echo chamber is overstated: the moderating effect of political interest and diverse media. *Information Communication and Society*, *21*(5), 729–745. <https://doi.org/10.1080/1369118X.2018.1428656>
- Gelo, O., Braakmann, D., & Benetka, G. (2008). Quantitative and Qualitative Research: Beyond the Debate. *Integrative Psychological and Behavioral Science*, *42*(3), 266–290. <https://doi.org/10.1007/s12124-009-9107-x>
- Glaser, B. G., & Strauss, A. (1967). *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Chicago, IL: Aldine.
- Glesne, C. (2015). *Becoming Qualitative Researchers: An Introduction* (5th ed.). Pearson.
- Goljani Amirkhiz, R., Frey, J. K., Cain, J. W., Breck, S. W., & Bergman, D. L. (2018). Predicting spatial factors associated with cattle depredations by the Mexican wolf (*Canis lupus baileyi*) with recommendations for depredation risk modeling. *Biological Conservation*, *224*(June), 327–335. <https://doi.org/10.1016/j.biocon.2018.06.013>
- Gordon, R. (2010). The Community-Connection Experience. In A. Peck & E. C. Malthouse

- (Eds.), *Medill on Media Engagement* (pp. 111–126). Pine Forge Press.
- Graybill-Leonard, M., Meyers, C., Doerfert, D., & Irlbeck, E. (2011). Using Facebook as a Communication Tool in Agricultural-Related Social Movements. *Journal of Applied Communications*, 95(3). <https://doi.org/10.4148/1051-0834.1164>
- Hiroyasu, E. H. T., Miljanich, C. P., & Anderson, S. E. (2019). Drivers of support: The case of species reintroductions with an ill-informed public. *Human Dimensions of Wildlife*, 0(0), 1–17. <https://doi.org/10.1080/10871209.2019.1622055>
- Jacobs, C., Main, M., & Pienaar, E. F. (2018). Florida ranchers and Florida panthers : risk perceptions , support for recovery , and evaluation of potential livestock depredation compensation. *Florida Scientist*, 78(3/4), 130–148.
- Johnson, C. N., & Wallach, A. D. (2016). The virtuous circle: predator-friendly farming and ecological restoration in Australia. *Restoration Ecology*, 24(6), 821–826. <https://doi.org/10.1111/rec.12396>
- Karlsen, R., Steen-Johnsen, K., Wollebæk, D., & Enjolras, B. (2017). Echo chamber and trench warfare dynamics in online debates. *European Journal of Communication*, 32(3), 257–273. <https://doi.org/10.1177/0267323117695734>
- Kitzinger, J. (1995). Qualitative Research: Introducing focus groups. *BMJ*, 311(7000).
- Kozinets, R. V. (2002). The Field Behind the Screen: Using Netnography for Marketing Research in Online Communities. *Journal of Marketing Research*, 39, 61–72. <https://doi.org/10.1509/jmkr.39.1.61.18935>
- Lappalainen, K. T. (2018). *Little Red Riding Hood in the Dialogic Tension of Wolf Politics in the U.S. West*. The University of New Mexico.
- Letnic, M., Ritchie, E., & Dickman, C. (2012). Top predators as biodiversity regulators: the dingo *Canis lupus dingo* as a case study. *Biological Reviews*, 87, 390–413.
- Lindsey, P. A., du Toit, J. T., & Mills, M. G. L. (2005). Attitudes of ranchers towards African wild dogs *Lycan pictus*: Conservation implications on private land. *Biological Conservation*, 125(1), 113–121. <https://doi.org/10.1016/J.BIOCON.2005.03.015>
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: an expanded sourcebook* (2nd ed.). London: Sage.
- Morehouse, A. T., Tigner, J., & Boyce, M. S. (2018). Coexistence with Large Carnivores Supported by a Predator-Compensation Program. *Environmental Management*, 61(5), 719–731. <https://doi.org/10.1007/s00267-017-0994-1>
- Moresey, R. J. (1950). The Early Range Cattle Industry in Arizona. *Agricultural History*, 24(3), 151–156.
- Murphree, J. (2018). Beef is Arizona Agriculture’s Largest Ag Commodity. *Arizona Agriculture*, 71(2), 1–2.
- Nichol, A. A. (1937). The Natural Vegetation of Arizona. *Technical Bulletin (University of Arizona, Agricultural Experiment Station)*. Tucson, AZ: College of Agriculture, University

of Arizona.

- Onwuegbuzie, A. J., & Leech, N. L. (2007). Sampling Designs in Qualitative Research: Making the Sampling Process More Public. *The Qualitative Report*, 12(2), 238–254.
- Organ, J. F., Decker, D. J., Stevens, S. S., Lama, T. M., & Doyle-Capitman, C. (2014). Public Trust Principles and Trust Administration Functions in the North American Model of Wildlife Conservation: Contributions of Human Dimensions Research. *Human Dimensions of Wildlife*, 19(5), 407–416. <https://doi.org/10.1080/10871209.2014.936068>
- Parsons, D. R. (1998). Green Fire Returns to the Southwest: Reintroduction of the Mexican Wolf. *Wildlife Society Bulletin*, 26(4), 799–809.
- Patton, M. Q. (2002). Two Decades of Developments in Qualitative Inquiry. *Qualitative Social Work*, 1(3), 261–283. <https://doi.org/10.1177/1473325002001003636>
- Pepin-Neff, C., & Wynter, T. (2019). Save the sharks: reevaluating and (re)valuing feared predators. *Human Dimensions of Wildlife*, 24(1), 87–94. <https://doi.org/10.1080/10871209.2018.1539887>
- Perrin, A. (2015). Social Media Usage: 2005-2015. *Pew Research Center*, (October). <https://doi.org/202.419.4372>
- Povilitis, A., Parsons, D. R., Robinson, M. J., & Becker, C. D. (2006). The bureaucratically imperiled Mexican wolf. *Conservation Biology*, 20(4), 942–945. <https://doi.org/10.1111/j.1523-1739.2006.00489.x>
- Riege, A. M. (2003). Validity and reliability tests in case study research: A literature review with “hands-on” applications for each research phase. *Qualitative Market Research: An International Journal*, 6(2), 75–86. <https://doi.org/10.1108/13522750310470055>
- Schoenecker, K. A., & Shaw, W. W. (1997). Attitudes toward a proposed reintroduction of mexican gray wolves in Arizona. *Human Dimensions of Wildlife*, 2(3), 42–55. <https://doi.org/10.1080/10871209709359101>
- Seraj, M. (2012). We Create, We Connect, We Respect, Therefore We Are: Intellectual, Social, and Cultural Value in Online Communities. *Journal of Interactive Marketing*, 26(4), 209–222. <https://doi.org/10.1016/J.INTMAR.2012.03.002>
- Serenari, C., Cobb, D. T., & Peroff, D. M. (2018). Using policy goals to evaluate red wolf reintroduction in eastern North Carolina. *Human Dimensions of Wildlife*, 23(4), 359–374. <https://doi.org/10.1080/10871209.2018.1444827>
- Taylor, S. J., Bogdan, R., & DeVault, M. (2015). *Introduction to Qualitative Research Methods: A Guidebook and Resource* (4th ed.). Wiley.
- Telg, R., & Barnes, C. (2012). Communication Preferences of Florida Farm Bureau Young Farmers & Ranchers. *Journal of Applied Communications*, 96(2). <https://doi.org/10.4148/1051-0834.1155>
- Triezenberg, H. A., Knuth, B. A., & Yuan, Y. C. (2011). Evolution of Public Issues in Wildlife Management: How Social Networks and Issue Framing Change Through Time. *Human*

- Dimensions of Wildlife*, 16(6), 381–396. <https://doi.org/10.1080/10871209.2011.608182>
- U.S. Fish and Wildlife Service. (2017a). Mexican Wolf Biological Report: Version 2. Albuquerque, New Mexico: Region 2.
- U.S. Fish and Wildlife Service. (2017b). Mexican Wolf Recovery Plan, First Revision. Albuquerque, New Mexico: Region 2.
- Walsh, L. (2013). Resistance and Common Ground as Functions of Mis/aligned Attitudes: A Filter-Theory Analysis of Ranchers' Writings About the Mexican Wolf Blue Range Reintroduction Project. *Written Communication*, 30(4), 458–487. <https://doi.org/10.1177/0741088313498362>
- Yin, R. K. (2009). *Case study research: Design and methods* (4th ed.). Los Angeles: Sage.
- Young, J. K., Ma, Z., Laudati, A., & Berger, J. (2015). Human–Carnivore Interactions: Lessons Learned from Communities in the American West. *Human Dimensions of Wildlife*, 20(4), 349–366. <https://doi.org/10.1080/10871209.2015.1016388>
- Zeithaml, V. A. (1988). Consumer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence. *Journal of Marketing*, 52(3), 2–22. <https://doi.org/10.2307/1251446>
- Zwick, D., Bonsu, S. K., & Darmody, A. (2008). Putting consumers to work: “Co-creation” and new marketing governmentality. *Journal of Consumer Culture*, 8(2), 163–196. <https://doi.org/10.1177/1469540508090089>