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The Pursuit of Becoming: Constraints and Resources of Wyoming Women Hunters

By

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Abstract

Hunting, a unique outdoor activity, has been both an integral component of human culture and a useful tool in wildlife management. However, the under-representation of women reflects the long-lasting influence of an oppressive society. Women often feel excluded, unwelcome, and unsupported in these settings. As hunting decreases in popularity and participation drops nationally, determining how to recruit and retain hunters from non-traditional backgrounds is essential to the continuation of the activity. This research explored aspects of supports and constraints identified by Wyoming women who are active or interested in hunting. Mentorship and confidence are influential to the hunting experiences of these hunter groups, but also present as constraints; especially for women interested in becoming hunters. A comparison of the constraints experienced by these two groups provides recommendations for improving hunter support resources.

Keywords: hunting, constraints, women, recruitment, retention, mentorship, confidence

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Chapter 1

Introduction

Statement of Problem

Hunting has been a long-standing component of human culture and a useful approach in wildlife management. As a cultural element, hunting is often passed down from generation to generation as an intricate element of familial relationships. In conservation, hunting is viewed as a population management tool to mitigate impacts of wildlife diseases and decrease human wildlife conflicts (e.g. vehicle collisions, property damage, etc.). Additionally, the sale of hunting and fishing licenses is a primary source of funding for state wildlife agencies.

However, hunting across the United States has been steadily decreasing. Since 2015, hunting numbers have declined and now roughly only 4% (11.5 million) of the national population participates (Moore, 2021). The decline in hunting participation is attributed in part to urbanization, societal perception of hunting, and changing national demographics (Larson et al. 2014). The continuation of hunting in culture, wildlife management, and conservation is, therefore, reliant on the recruitment and retention of hunters, specifically groups that have historically been underrepresented. Consequently, one group of interest is the woman hunter.

Historically, rural-dwelling white males have dominated hunting participation (Jackson et al., 1989; Adams & Steen, 1997). Women account for only 11% of hunters and do not participate as consistently as men (Gigliotti & Metcalf, 2016). The consequences of the past exclusion of women in hunting spaces may be an explanation behind decreasing trends.

Beginning in the late 1980s and continuing to the early 2000s, multiple studies emerged to identify barriers women encounter in hunting (Adams & Steen, 1997; Mcfarlane et al., 2003;

Heberlein et al., 2008; Martin & Miller; 2008). These initial studies noted that women face constraints to their participation in hunting at multiple levels of their lives. Jackson (1997) defined a constraint as “any factor that is perceived or experienced by individuals that limit...participation in recreation activities” (pg. 461). In the literature on hunting, common constraints are lack of mentorship, barriers involving self-confidence, and improper equipment (Macfarlane et al., 2003). Additionally, a lack of social support is a consistent constraint identified by women hunters (Quartuch et al., 2017; Metcalf et al., 2015). These constraints affect the likelihood of women to continue or begin hunting.

Fortunately, due to research from the above-mentioned studies, wildlife agencies and communities began offering programs that focus on increasing the number of women hunters. These resources, such as Becoming an Outdoors Women (BOW), generally help women gain skills that promote outdoor recreation. Because of BOW programs and mentoring programs like the First Hunt Foundation, women hunters are finding ways to navigate some of these constraints.

In the United States, the number of women hunters has increased in recent years. The total number of women hunters increased by 25% between 2006 and 2011 (Schmitt, 2013). However, participation in hunting varies by state. This is generally based on wildlife populations, land access, and community culture. Wyoming, a state with a largely rural population and plentiful public lands, regularly has one of the highest proportions of women hunters in the nation (Heberlein et al., 2008). However, little research has been conducted on the human-dimensions of Wyoming’s hunting populations. Understanding the experiences of women hunters in this western state may provide new information that is transferable to other mountain west states.

Purpose

This research project sought to identify constraints that impact women in Wyoming who are interested in hunting, as beginners or as active hunters. Through the lens of a multi-level model and quantitative methodology, this research may reveal how hunting and constraints affect women across every level of their lives. By highlighting the connections women hunters have with themselves, others, and society further understandings on the impact of constraints may be discovered.

Moreover, much of the past research on the limitations of women hunters has been through the experiences of active hunters. For women simply interested in beginning hunting there is a lack of support to get started. These potential future hunters are possibly being missed by current recruitment and retention efforts because of the lack of information on their needs and identities. By sampling women who are interested in becoming hunters, new insights on this population could be identified.

This research specifically seeks to understand the experiences of women hunters in Wyoming to provide information that is transferable to other western states. By improving the understanding and support of these women, this research could suggest improvements for future resources that would promote recruitment and retention of women hunters across state lines. In this way, this study may assist in addressing the decline in hunting participation and potential subsequent loss of funding for conservation.

The implications and findings of this research may reveal ways that current recruitment and retention programs are being successful and should be further supported. The demographic aspects of this research may offer extended areas of research and new questions in this area of study. The topic of hunting, and broader yet, equality in the outdoors, are relevant in society and specifically, within Wyoming.

Research Questions

This research is being guided by the following research question(s):

1. What constraints are influencing the recruitment and retention of women interested in hunting in Wyoming?
2. Is there overlap in constraints identified by women who do hunt and women who are interested in hunting?
3. What resources do women in Wyoming identify to be helpful in becoming involved in hunting?

Positionality

I grew up in Wyoming around a culture of hunting, fishing, and general outdoor recreation. These experiences fostered an interest in wildlife and conservation that I have continued to pursue. However, as a young girl, I noticed the lack of women around me in these spaces. Unfortunately, this remained a common observation in outdoor experiences as I grew up and tried more activities independently. Throughout college courses and in wildlife-related job settings, I noticed that the conservation field was continuously male-dominated. My female-identifying peers, friends, and colleagues often spoke about this as a shared experience.

In the education settings of my professional career, I had extremely rewarding experiences working with youth, especially young women. The eagerness and courage of these young women when entering spaces that were traditionally male dominated was inspiring to me. I often had older women comment on how happy they were to see these spaces changing from what they knew in the past. It has meant a lot to me to see women participate in roles previously only held by men and relentlessly strive for equality.

Therefore, I am doing this research because it addresses an issue that is personal to me and my experiences. It connects three topics I am passionate about: wildlife, education, and justice. This research aligns and stems from my personal and professional goal to provide opportunities for all people to engage in conservation and recreation. In this way I hope that this project becomes a drop in the bucket that aids in addressing equality gaps in the outdoors.

Chapter 2

Literature Review

Theoretical Frameworks

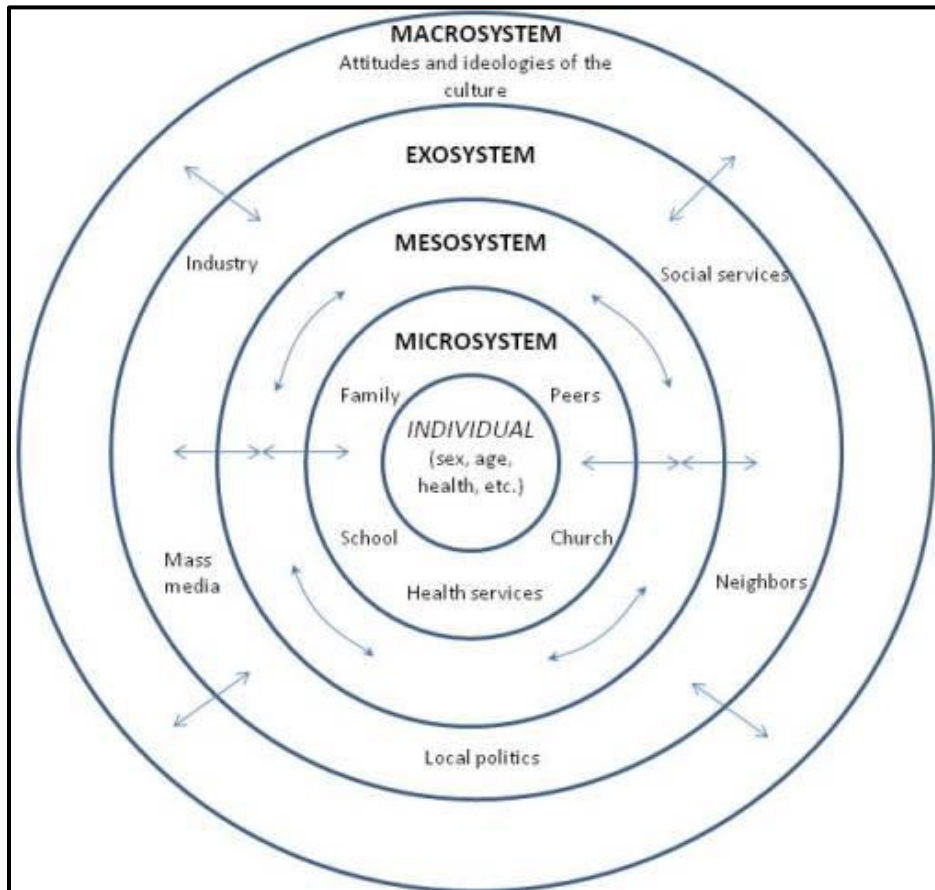
Social-Ecological Model

In the late 1970s Bronfenbrenner, a child development psychologist, created the ecological systems theory and subsequent model. Bronfenbrenner (1977) recognized that human behavior is a result of many influencing factors, such as self-identity, relationships with others, and the culture of community. Bronfenbrenner argued that, “human development...requires examination of multi-[level] systems of interaction not limited to a single setting and must take into account aspects of the environment beyond the immediate situation containing the subject” (pg. 514). Therefore, understanding human interests and behavior is reliant upon understanding the influence of the environment and interactions in which people exist.

The social-ecological model attempts to capture the multi-layered influences in a person’s life through a nested levels visual (Figure 1). The model centers on the *Individual* within the *Microsystem*. At this level, perception of self and a person’s closest relationships are most influential. At the microsystem, the bi-directional interactions are strongest and most influential to an individual (Härkönen, 2001). The *Mesosystem* surrounds this and incorporates non-familial relationships and is viewed as a place of multiple interacting microsystems (Paquette and Ryan, 2001). Expanding outward the influence of culture, policy, and societal ideology are examined at the *Exosystem* and *Macrosystem* levels. The macrosystem may be considered a “societal blueprint” made up of culture and other societal conditions (Härkönen, 2001). Within each layer are bi-directional arrows demonstrating the reciprocal impacts of relationships and overlap of levels (Bronfenbrenner, 1999).

Figure 1

Bronfenbrenner's Social-Ecological Model



Note. A visualization of the systems that create the multi-level environment of a person's life (Mash & Wolfe, 2015).

Bronfenbrenner's idea gained traction within psychology, sociology, and education (Härkönen, 2001). The model is applied in these fields because of the encompassing view it presents while acknowledging the variance amongst individual people and lived experiences (Hayes et al. 2017). Across the literature, the model has been a tool in understanding barriers that exist in people's lives and in understanding how social relationships affect a person interests and actions (Larson et al. 2014; Newman & Farson, 2015). In the work of Martínez-André et al. (2020), the social-ecological model was used to understand barriers to physical activity for

young people. Individual qualities, such as gender and age, along with relationships that comprise the micro and meso levels, were influential in the recreational opportunities available to individuals.

The central idea of this model is that the environment in which a person exists largely influences their development and explains the need for considering interactions between levels and relationships. Hunting, as a complex activity, touches all levels of a person's life; societal, communal, relational, familial, and individual. Larson et al. (2014) used this model to consider how hunting opportunities are affected by the influence and overlap of these levels. That study coined the term "social habitat" as it refers to "the myriad of factors that interact to influence hunter recruitment and retention" across the multiple levels (2014, pg. 105). Larson et al. (2014) expands on this by justifying how community organizations, family relationships, and individual beliefs affect how likely a person is to hunt. Therefore, the way in which this model captures multiple levels of influence on human development makes it applicable when considering how societal norms and relationships reach into the inner most parts of human life in relation to hunting.

Feminist Theory

Feminist theory focuses on the equality, empowerment, and increased visibility of people who identify as women (Henderson, 1991). Feminist theory is complex, multifaceted and continuously evolving. While I provide brief overview of the theory as it applies to this research project, I acknowledge the breadth of feminist theory that cannot be captured entirely here.

Historically, feminist theory traces back to the early 1800s and has since gone through multiple waves. The first wave of feminism targeted systems of oppression and the core concepts

of the theory began to take shape (Rampton, 2015). In the 19th century the early work of feminism was connected to the abolishment of slavery and the women's suffrage movement. It was during this first wave of feminism that patriarchal systems were initially targeted for deconstruction.

From there, in the 1960s feminist theory gained traction as people continued to challenge male dominance in modern society. Efforts to elevate women beyond the limitations of gender continued. As a driving element of the civil rights movement, feminist theory was focused around the passing of the Equal Rights Amendment of 1972 to ensure legal equality on the basis of sex (Rampton, 2015). Today, feminist theory actively informs relevant political activism in regard to reproductive rights, equality in the workforce, social justice work, and environmental justice for all people (Day, 2016).

The resistance to oppressive systems by early advocates of feminist theory laid the groundwork for this theory to expand its reach and application. Applying feminist theory in research on the under-representation of women advances the theory's core concepts of equality and empowerment. Further, an inclusion of feminist theory allows for advancement of new, inclusive methods (Harding, 1987) that may not have been considered in past research. Therefore, feminist theory becomes a powerful framework in research on hunting because it is a space in which women have previously been excluded.

Ecofeminism

French feminist Françoise d'Eaubonne coined the term "ecofeminism" in 1974 (Glazebrook, 2002). Ecofeminism is branch of feminist theory that specifically addresses the connection between the domination of nature and domination of women. Ecofeminism

emphasizes how capitalistic, patriarchal systems simultaneously exploit nature and women. Littlefield (2010) emphasizes this by saying that, “male dominance is seen as a result of social patterning that has promoted male hegemonic power and ideologies” (pg. 97). Through the silencing of women’s voices and the under-valuing of non-human life, men excluded women as sources of knowledge in relation to nature and outdoor activities (Littlefield, 2010). Mies and Shiva (1993) discuss that an essential component of ecofeminism is that it offers an alternative to the limitations upheld by a homogenized and patriarchal culture.

The connection of women and nature is central to ecofeminism. "In nature, conformity to traditional female roles is not required” (Henderson, 1996, p. 196). 2022). Experiences in nature give women spaces to deconstruct roles that have been socially and culturally imposed on them. Hunting, in this way, is an opportunity for women to challenge different roles that women have been subject to, both within and outside of the activity itself. For example, “in many cultures, women are particularly associated with...natural areas because the survival of their families relies on harvesting and producing food from the land” (Henderson, 1995). Therefore, despite criticism of how hunting does not align with ecofeminist ideas (Kheel, 1996), other studies have shown that the innate connection that women share with hunting is a reason behind their desire to do so. When women choose to hunt, they actively defy the cultural impositions that have historically excluded them and, in turn, reinforce their connection with nature (Littlefield, 2010; Murphy, 2015).

Ecofeminism highlights that there is more to existence than the dualisms often imposed on people within society. Binary ways of thinking tend to result in power dynamics due to the attribution of superiority or inferiority onto certain groups of people. These assumptions are oppressive and do not represent the diversity that occurs within nature and amongst people. A

prominent goal within ecofeminism then is to challenge the ideas of hierarchical thinking on the basis of race, sex, age, or gender (Zabinski, 1997). Within ecofeminism, gender roles are not only an extension of male domination, but also impose constraints on how women interact with nature.

Incorporating ecofeminism into hunting spaces and hunting research allows for acknowledgment of a history based in domination not only of women, but of nature. The centering of women and non-human creatures through this theory creates a more complete view of all that hunting truly encompasses (Littlefield, 2010; Burkett & Carter, 2022). The foundational connection between women and nature that ecofeminism is built upon can be supported through opportunities, such as hunting, that enhance this relationship. As described in the works of Culp (1998) and Henderson (1996), providing women positive outdoor experiences where they have opportunities to overcome gender roles and resist societal oppression actively supports feminist theory and ecofeminism.

Gender

Feminist theory and ecofeminism both incorporate the discussion of gender. The concept of gender continues to evolve and is no longer limited to the definitions offered in early foundational literature. According to the informed definition presented in the work of Henderson, “gender is a set of socially constructed relationships produced and reproduced through people's actions” (1994, pg. 120). Gender identity can change during the course of a person’s life, is necessary for a sense of self, and is not restricted to the limitations of one’s biological sex. The implications of gender inform the work and motivations behind both feminist and ecofeminism theories. “Gender...incorporates the social meanings of roles, unequal power, and cultural

expectations” (Henderson, 1996, pg. 144). Gender, as a construct, then influences a person’s perception of their own identity, along with the identities and perceived roles of others.

Feminist theory acknowledges the limitations imposed on women through gender roles. According to feminist theory, gender roles are the result of patriarchal systems that have asserted power and control over women (Day, 2016). As determined by dominating societal norms, gender roles can result in judgment on what behaviors or positions are deemed acceptable for a person’s gender. For women, a common gender roles often entails being the primary caregiver to children (Henderson, 1996). This role has the possibility to consume a woman's time, financial resources, and perception of self-worth. All of which can translate into constraints that affect other aspects of her life, including her leisure and recreation.

Leisure Studies and Recreation

An important acknowledgment within ecofeminism, and broadly in feminist theory, is the exclusion of women in outdoor spaces. In the field of outdoor recreation, there has been a prevailing dominance of perspectives and practices that historically excluded women (Reed, 2022). Due to this, early research in recreation and leisure focused on the connection between gender and constraints. The work of Culp (1998) found that the “social construction of feminine roles” alters women’s “experiences and perceptions of outdoor recreation and their access to outdoor opportunities” (pg. 375). The lasting grasp of gender roles continues to influence the perception of women within spaces on the basis of what is socially acceptable or not (Warren & Loffler, 2006). In a summary of prior work, Burkett and Carter (2022) conclude that “the underrepresentation and sexualization of women in outdoor recreation [is linked] to patriarchal... frameworks that emphasize both nature and women as something to be overcome or dominated”

(pg. 1017). The issue identified in leisure studies is not necessarily the difference in men and women within these spaces, but rather unequal access, opportunity, and under-representation that disadvantages women.

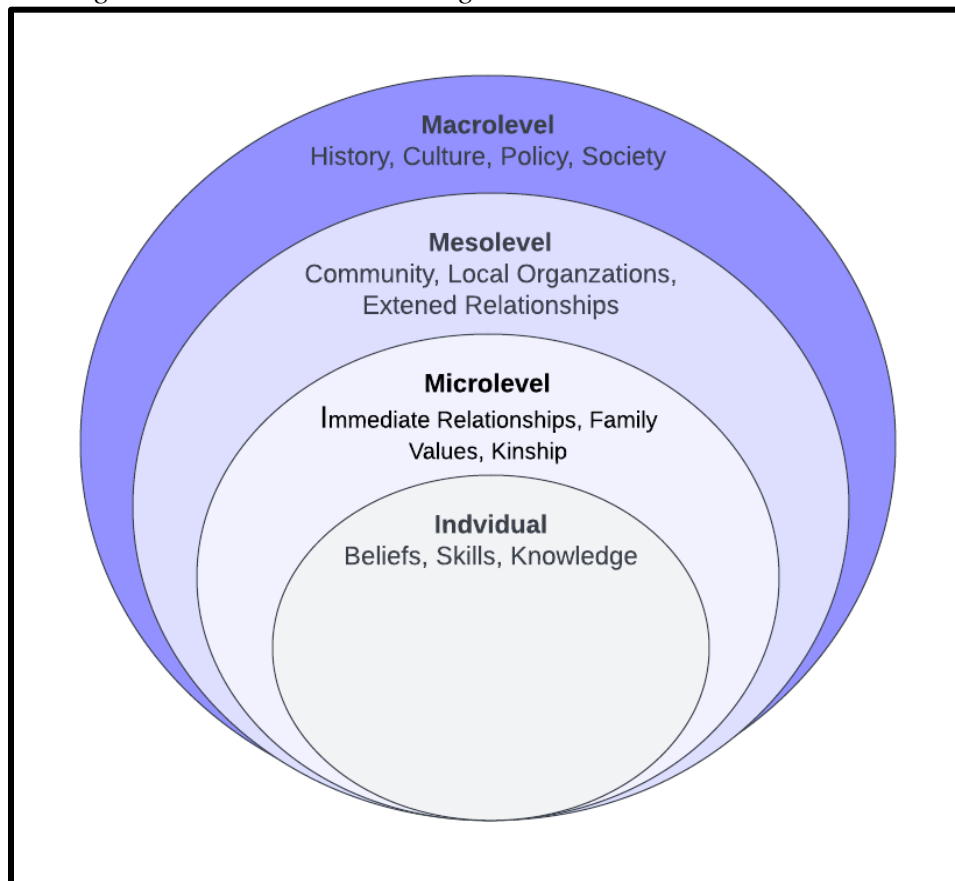
Therefore, understanding how patriarchal systems still affect aspects of women's lives gives further reason to incorporate feminist theory into research on women's recreation. Understanding how gender affects women's leisure is recognizing the value feminist theory and ecofeminism can provide in this area of research. Women's participation outdoor recreation activities, such as hunting, is one way in which women are actively overcoming gender constraints and pushing toward equality in new spaces.

Hunting Across Levels of the Social-Ecological Model

The following sections use the social-ecological model to frame existing literature on hunting. Themes from the literature are organized based on the levels of adapted and expanded versions of the model. This demonstrates the complexity and interconnectedness of hunting as an activity. Additionally, this provides necessary context behind hunter recruitment and retention efforts.

Figure 2

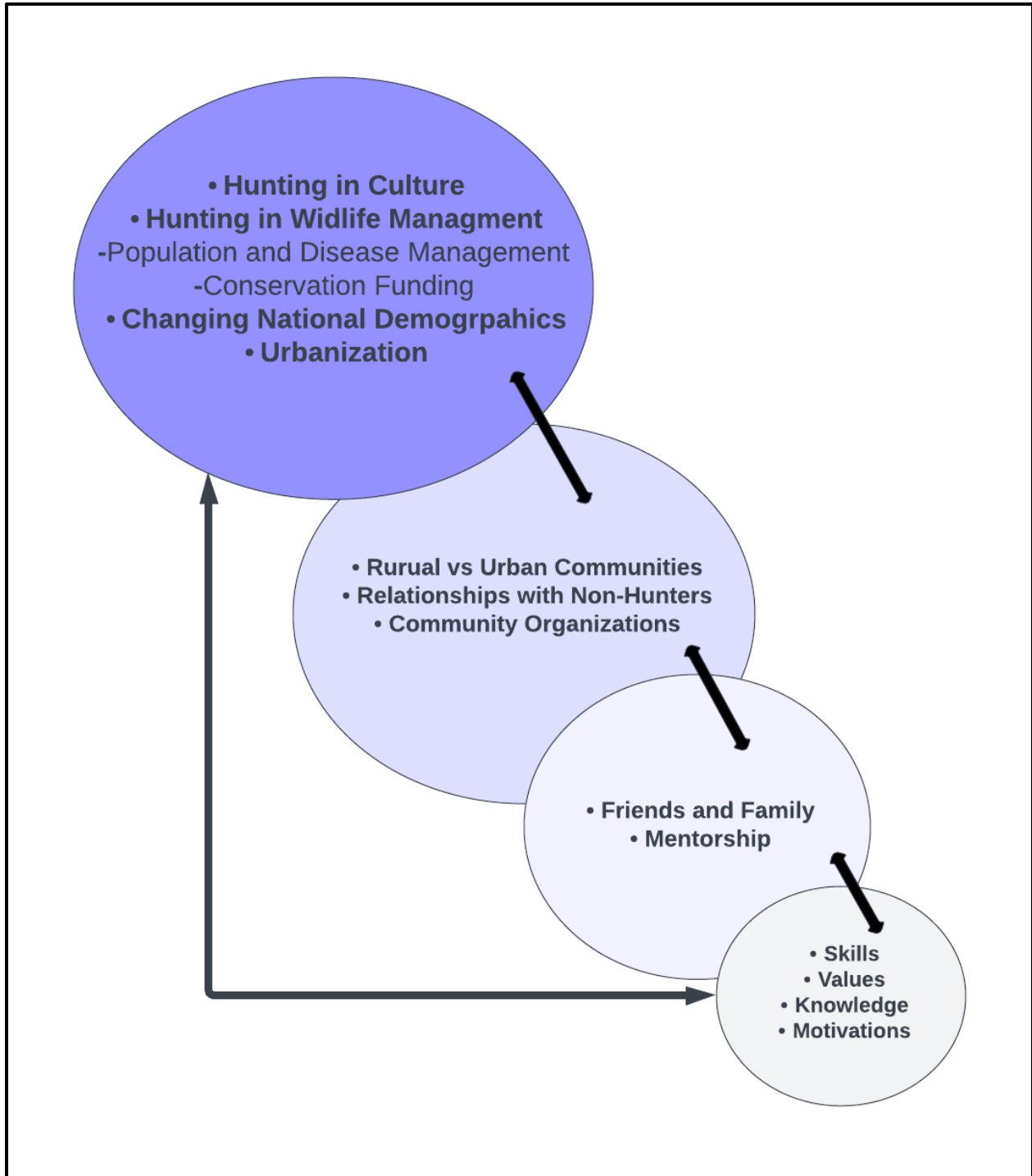
Hunting Factor in the Social-Ecological Model



Note. Adapted from Bronfenbrenner's Social-Ecological Model (Mash & Wolfe, 2015; Larson et al. 2014)

Figure 3

Hunting Factors in an Expanded Social-Ecological Model



Note. An expanded version of the social-ecological model. Arrows demonstrate the bidirectional influence of factors within each level.

Hunting at the Macro Level

Recall that the macro level is the outermost level of the social ecological model. This means that it influences the other levels are nested inside of it. The macro level consists specifically of the broad societal patterns that make up an environment. The macrosystem is a blueprint for cultural context that influences social context and relationships that are embedded in each other level (Härkönen, 2001). Below are the macro level components of hunting that provide essential context to the activity and also influence how hunting presents at other levels of the model.

Figure 4

Hunting Factors at the Macro Level of the Social-Ecological Model



Hunting in Culture

For as long as people and wildlife have coexisted hunting has been an important element of human culture. Before Europeans arrived in what is now the United States, Indigenous peoples were deeply connected with nature in thriving communities across the continent. For example, as described by McCorquodale (1997), hunting was and remains an integral component

of traditional cultural life for tribes such as the Yakama/ Waptailmim (native lands located in the Cascade Mountains of Washington). Hunting was a vital component in Yakama tribal identity and traditional ceremonies (McCorquodale, 1997). Hunting kept Indigenous peoples intricately involved in the natural processes (Kerasote, 1994) and was a deeply interwoven component of their lives. The early stewardship and connected relationship of native people with the landscape and their non-human relatives is the earliest example of hunting as an essential component in culture and management.

Hunting in Wildlife Management

After European settlement and the forceful implementation of colonial ideologies, hunting was dominated by upper-class white males who hunted mainly for sport (Smalley, 2005). However, after the decimation of wildlife populations, such as Passenger Pigeons and nearly the American Bison, hunting became central to efforts of wildlife conservation (McCorquodale, 1997; Gordon 2012). Beginning in the 19th century, the North American Model of Wildlife Conservation guided legislation on wildlife management and is used today as a principle framework behind modern policy and wildlife-related decisions (Lawrence, 2022). In conjunction with the cultural importance of hunting, wildlife management agencies across the country rely on hunting as a tool in their conservation efforts.

Decreasing wildlife populations through hunting is regulated by state agencies and can be beneficial in multiple ways. For example, Ryan and Shaw (2011) found that hunting helps to maintain balance on the landscape, decreases human-wildlife conflicts (car collisions, property damage, etc.), and aids in disease control. Population density diseases, such as Chronic Wasting Disease (CWD), are of great concern for ungulate populations across the country (Needham et al., 2004). Hunting has an essential role in disease reporting and therefore, informs management

decisions. Disease samples collected from hunter-harvested animals are used to assess the distribution diseases, such as CWD, and provide invaluable information to biologists who would otherwise struggle to attain a similar magnitude of data.

Hunting Funds Conservation

In addition to providing support to conservation efforts through population control and disease reporting, hunting is the primary source of funding for state wildlife agencies (Martin & Miller, 2008; Quartuch et al., 2017). In Wyoming, 64% of annual revenue was generated through the sale of hunting and fishing licenses (Wyoming Game and Fish Department [WGFD] Revenue Sheet, 2020). Unfortunately, this funding source is currently in danger because hunting participation has been declining since the 1980s (Enck et al., 2000; Heberlein et al., 2008; Quartuch et al., 2017). On the national scale, between 2011 and 2016, hunting revenue decreased by 29%. This is equivalent to a decrease of \$36.3 billion to \$25.6 billion due to a steady drop in hunting participation. (U.S. Department of the Interior, 2017). In 2006, hunters contributed over a billion dollars towards protection of wildlife and conservation through a combination of funds from taxes on hunting equipment, private donations, and license purchases (Ryan & Shaw, 2011). Losing this funding translates into a decrease in staff, less programmatic outreach, and reduces the scale of wildlife conservation efforts (Ryan & Shaw, 2011; O'Farrell & Liu, 2020). Habitat protection, invasive species monitoring, and wildlife research are also threatened by decreased funding. Countering the current trend of revenue loss can be bolstered through the sale of licenses and is a primary reason to promote the continuation of effective hunting programs.

Demographics and Urbanization in Hunting Participation

To promote the continuation of hunting and fund conservation efforts essential in wildlife management, state agencies began to examine the dimensions of their hunter populations. Because of the historic dominance of white-males in hunting culture, minorities have long been excluded (Enck et al., 2000; Ryan & Shaw, 2011; O'Farrell & Liu, 2020). However, the national demographic is shifting, becoming increasingly more diverse (Larson et al., 2014; Quartuch et al., 2017). According to the United States Census Bureau, all races, aside from White, are increasing nationally (2022). This societal level change means that reaching underrepresented populations in hunting programs could bolster license sales. Understanding the past and present cultural oppression and exclusion of underrepresented people in hunting requires a critical examination of multiple factors at the macro level (Figure 3).

Another aspect within this level that may be affecting hunting participation is urbanization. As the dependence on wildlife as a food source decreased, the spread of urban areas simultaneously increased. Now most of the US population lives in urban settings, but most hunters do not (Quartuch et al., 2017). Urbanization in the United States has resulted in a decrease in natural landscapes that contain wildlife and a change in societal views on hunting. Cerri et al. (2018) found that modernization and urbanization have been “causing a large-scale shift in wildlife value orientations” (pg. 23). However, since the 1990s most Americans approve of legal hunting (Duda et al., 2010). But in recent years public perception has been affected by the negative portrayal of hunting in the media. Hunting in the media generally has an undesirable connotation because of the flaunting of trophy animals, emphasis on killing, and the domination of the wealthy, white male stereotype (Quartuch et al., 2017; Kalof & Fitzgerald, 2003). Hunting in the media is seldom presented as a moral activity that contributes to conservation and is deeply connected to nature and human relationships (Cahoone, 2009). Therefore, according to

Karns et al. (2015), the increasing concentration of people in urban places, in addition to changing cultural perceptions on hunting, will likely be an ongoing issue for hunter recruitment and retention efforts.

Hunting at the Meso Level

The meso level lies within the societal and cultural context of the macrosystem and provides the structure for the micro level and individual to develop. Specifically, the meso level creates an interconnection of multiple settings and allows for broad, informal relationships form (Paquette and Ryan, 2001). In hunting, the meso level includes specific settings, organizations, and broad relationships (Larson et al., 2014). The following is an examination of literature on hunting at the meso level.

Figure 5

Hunting Factors at the Meso Level of the Social-Ecological Model



Hunting culture is more dominant in rural communities (Jackson et al., 1989; Stedman & Heberlein, 2001). Thus, prior studies focused on the connection between rural living and hunting (Stedman & Decker, 1996; Heberlein et al., 2008; Quartuch et al., 2017). Tight knit small towns foster acceptance of hunting and often are associated with access to more land on which to hunt and a higher abundance of wildlife (Stedman & Heberlein, 2001). However, national and local urbanization is decreasing the amount of these rural spaces. Today, while the majority of people live in urban areas less than half of hunters reside in these spaces (Larson et al., 2014).

The effects of urbanization reach further than limiting hunting to rural dwellers, it has caused a disconnect from food sources. Within some communities the reconnection to hunting has been a result of the ‘Locavore’ movement. The idea behind this effort is to get food from local areas, aiming to create more sustainable food systems and a connection between community members (Tidball et al., 2013). The Locavore movement is an example of how

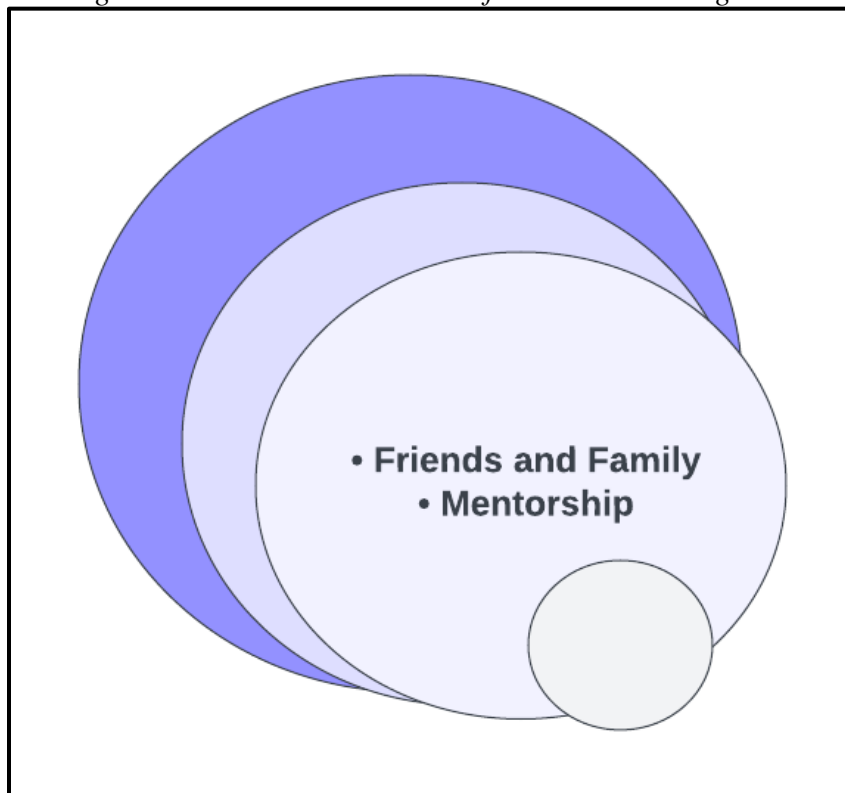
integral hunting can be in community based efforts. Further, hunting culture creates deep connections in communities because hunting benefits more than the person pulling the trigger. Non-hunters benefit from hunting in terms of acquiring meat, sharing stories, and supporting others they are connected to. For current non-hunters, participating in hunting-related activities is very dependent on relationships to active hunters (Stedman & Decker, 1996). Because of this Quartuch et al. (2017) suggests that community based organizations can have a substantial impact in fostering relationships amongst hunters, specifically through mentorship.

Hunting at the Micro Level

The micro level is the immediate environment that surrounds an individual. Interpersonal relationships are extremely influential at this level and directly impact the nested individual level (Bronfenbrenner, 1999). The section below describes how these relationships present in hunting.

Figure 6

Hunting Factors at the Micro Level of the Social-Ecological Model



The microsystem is made up of immediate relationships and support systems for an individual. Hunting is a deeply familial activity. And generally, “it takes a hunter to make a hunter” (Duda et al., 1995, p.12). Knowledge is passed from hunter to child and repeats for generations. Hunters who have support from their families are initiated at an earlier age and generally continue hunting as adults (Decker et al., 1986; Larson et al., 2014). For men this mentor has traditionally been their fathers (Mcfarlane et al., 2008). Moreover, hunting is an activity that can include the whole family and is often a way for non-hunters to spend quality time with their loved ones.

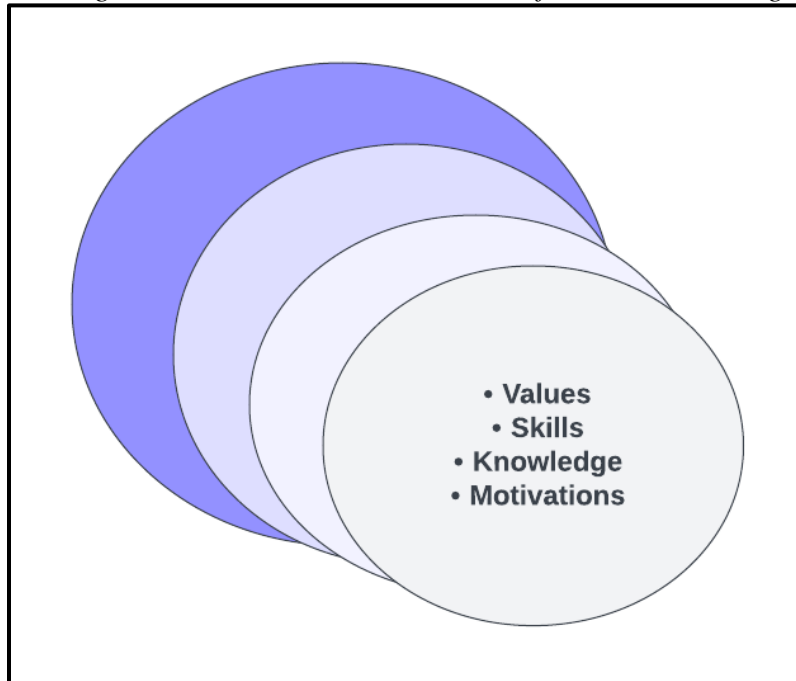
Mentorship is essential to long term hunting. According to Decker et al. (1984) the most essential role models in hunting participation are friends and family. For the majority of hunters long term mentorship comes through families. However, roughly 20% of hunters are introduced through non-familial relationships (Ryan & Shaw, 2011). Finding quality mentorship requires the commitment of active hunters to serve as mentors. Many hunters are willing to share their knowledge and pass on skills to support the longevity of hunting in conservation and culture (Littlefield, 2010). Without a social support system long term retention of hunters decreases (Stedman & Decker, 1996).

Hunting at the Individual Level

Recall that the Individual level is the inner most level of the social ecological model. This level consists of aspects that are unique to an individual person. Values, skills, and motivations are all largely influenced by a person’s culture, community, and relationships, but are unique to each individual’s identity (Härkönen, 2001). This level in hunting refers to the values, skills, and motivations relevant to each hunter. An examination of the literature regarding these factors follows below.

Figure 7

Hunting Factors at the Individual Level of the Social-Ecological Model



The individual level is greatly influenced by every encompassing level around it. Therefore, the actions or values an individual has are a result of the environment they exist within and the relationships surrounding them (Härkönen, 2001). An individual learns hunting skills and values through the socialization of the hunting culture they exist within (Larson et al., 2014; Purdy et al., 1989). In hunting, social support and social learning are strong predictors of a person's likelihood to view hunting positively. Individuals that enjoy recreating in the outdoors and have the opportunity to share in those activities with their loved ones are more likely to have a positive attitude toward hunting (Stedman & Decker, 1996). These values then shape a person's motivation to develop relevant skills and knowledge.

Multiple studies have found that motivation is a strong influencing factor for individual hunters (Jackson et al., 1989; Adams & Steen, 1997; Quartuch et al., 2017). Decker et al. (1984) created typologies for hunters based on their motivations. Generally, people hunt to connect

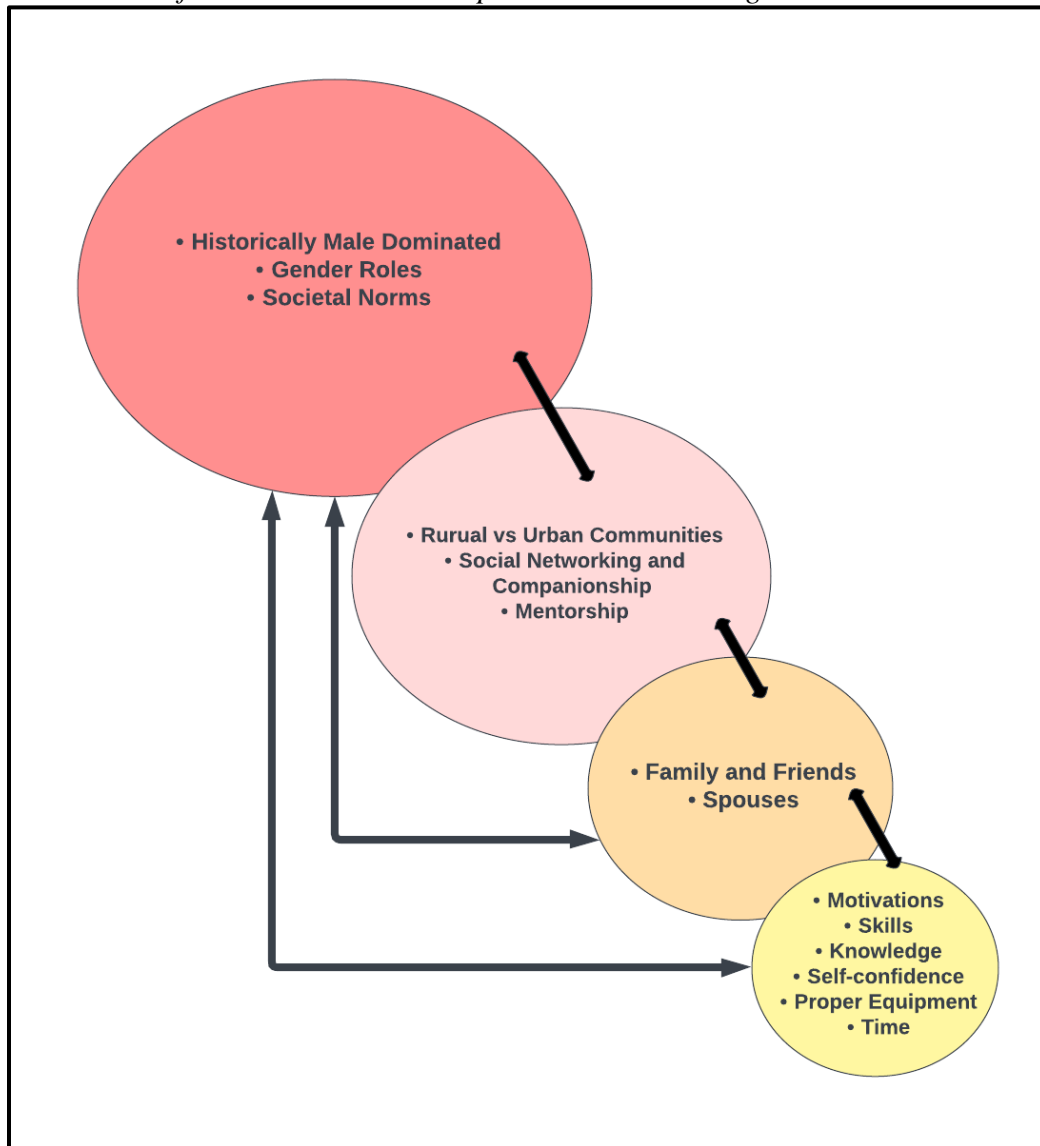
with nature, spend time with other people, use specialized skills and equipment, and to assist in wildlife conservation efforts (Decker et al., 1984; Heberlein et al., 2008; Ryan & Shaw, 2011). Understanding the motivations that individuals have toward hunting in turn provides insight to the values informing their individual interests and their relationships.

Constraints of Women Hunters

The following sections examine the literature in reference to women hunters. Previously I used the social-ecological model to demonstrate the complexity of hunting as a societal, relational, and individual topic. Hunting culture is interwoven across all levels of the model. This study focuses on understanding how hunting culture exists in the lives of women. To better understand the experiences of women entering hunting spaces I continue to use the social-ecological model to demonstrate how constraints exist across the levels of women's lives. In presenting information from existing literature in this way, this study illuminates the complex challenges women encounter in recreation with the goal of determining how hunter programs can be most supportive to women in navigating these constraints.

Figure 8

Constraints of Women Hunters in Expanded Social-Ecological Model

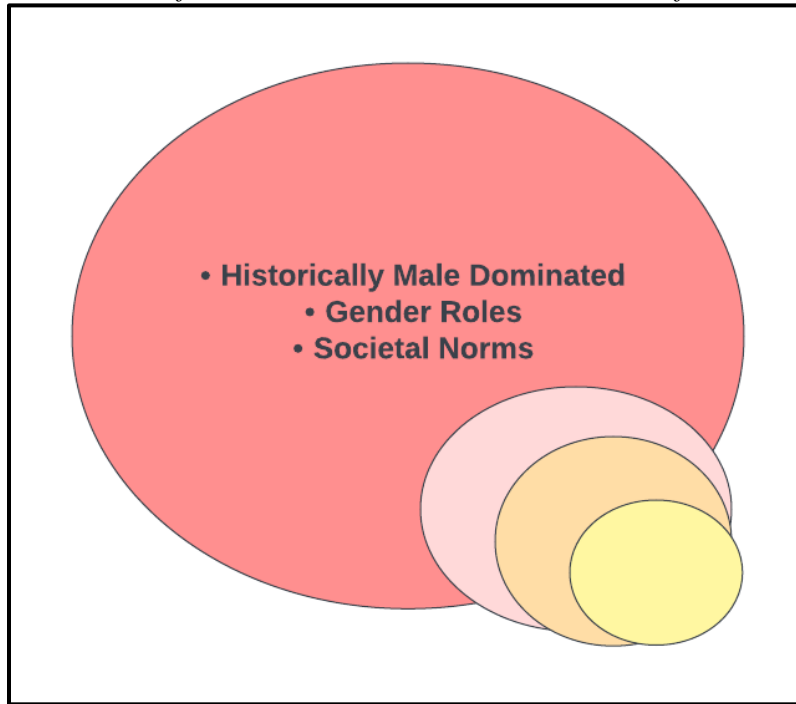


Note. Expanded version of the social-ecological model with constraints of women hunters at each level. Arrows represent the bidirectional influence across levels.

Macro Level Constraints

Figure 9

Constraints of Women Hunters at the Macro Level of the Social-Ecological Model



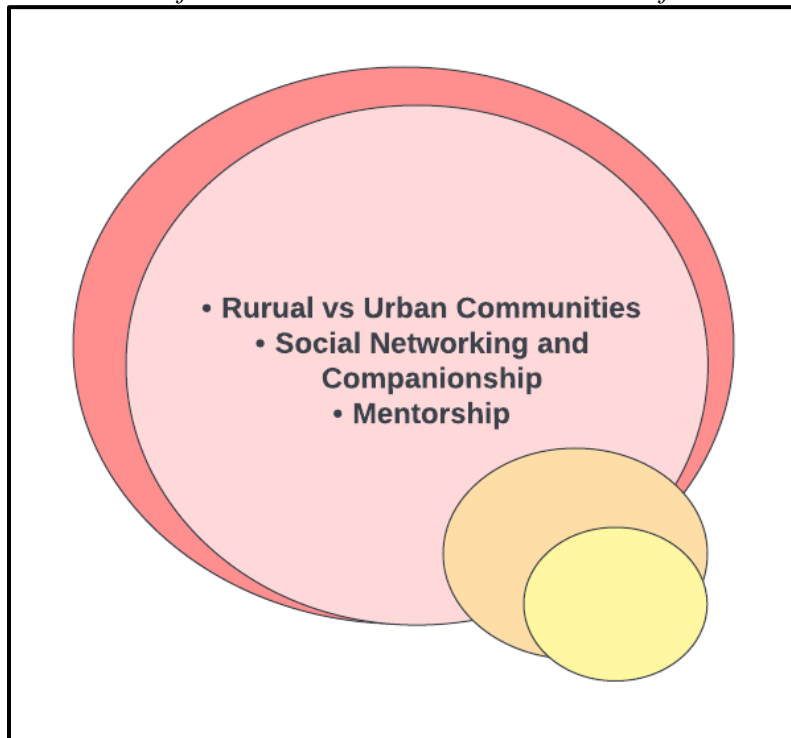
The macro level examines the societal and cultural influence at play in the lives of women hunters. At this level women face constraints through the continuation of traditional gender roles. Understanding the impact of gender is essential to supporting women in hunting. Historically, culturally, and institutionally gender has affected women's access to outdoor opportunities and recreation. The perception of women partaking in recreation and what activities are deemed acceptable based on societal norms limits participation. In male dominated spaces, such as hunting, women do not participate at the same rates as men (Martin & Miller, 2008). Studies seeking to understand this disparity focused on the different experiences of men and women in the same activities (Henderson, 1996; Adam & Steen 1997). The findings of these studies recognized that the opportunities available to men are a result of the privilege they have upheld in society. This, in addition to culturally enforced gender roles, affected women's access and inclusion in hunting.

By becoming involved in outdoor recreation activities like hunting and fishing women place themselves in situations in which “gendered expectations and stereotypes” are evident but also create space for them to resist these gendered assumptions...[and develop] their own sense of empowerment that translate[s] to other aspects of their lives (Burkett & Carter, 2022). Today, gender stereotyping in hunting may not be as extreme as it was in the past (Gigliotti & Metcalf, 2016), but the lasting impacts may explain why the increase in women hunters parallels changing cultural perceptions of women and their advancement into new roles within society.

Meso Level Constraints

Figure 10

Constraints of Women Hunters at the Meso Level of the Social-Ecological Model



Hunting exists in culture at a societal level but it is within communities that hunting culture is a crucial element to examine. At this level constraints and motivations of women hunters appear more specifically. Women in rural spaces are more likely to hunt (Martin &

Miller, 2005). This is partially due to the fact that in the past it was more acceptable for a woman living in the country to hunt. “Women who live in urban or suburban areas may not have easily accessible hunting locations in their community or have a longer distance to drive to hunting properties” (Metcalf et al., 2015, pg. 42). Martin and Miller (2008) found that women hunters who lived in rural areas spent more days hunting than women who did not. In these ways, location of dwelling can be a constraint and influential factor to women hunters

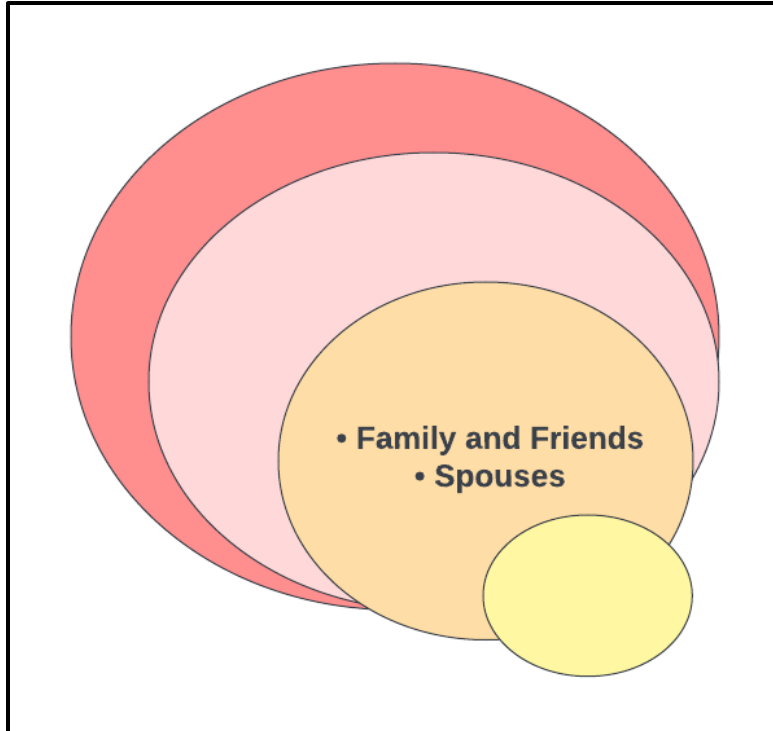
The social aspect of hunting has been a major draw of women. Murphy (2015) describes how a hunting camp is where a close group of hunters connect through cooking, storytelling, teaching ethics, and sharing in the labors that are associated with harvesting an animal. The relational element of hunting is both a motivation that draws women to hunt and a constraint that makes it difficult to begin a hunting journey when there is a lack of social network. Gigliotti and Metcalf (2016) found that the value of social networks was a main reason why women hunt. Simultaneously, *No One to Go With* was found to be a major constraint specified by women hunters. Murphy (2015) connects this by describing how impactful hunting relationships can be once there is a structure to build them.

Based in that, an extremely important element of hunting for women is mentorship. Unlike men, whose main hunting mentor is generally their father, the most common mentor for women hunters is a male life partner (Jackson et al., 1989; Martin & Miller, (2008); Gigliotti & Metcalf, 2016). In the work by Adams and Steen (1997) 67.8% of women hunters were initiated into hunting via their husbands. The authors reinforced this constraint by suggesting that the progression of women in hunting is almost entirely reliant on the men in their lives. Therefore, a woman who is single and does not come from a hunting family is much less likely to begin or continue hunting.

Micro Level Constraints

Figure 11

Constraints of Women Hunters at the Micro Level of the Social-Ecological Model



Social support, already mentioned to be an influential factor for women hunters, is most commonly found at the familial level for people who hunt. However, women's deeply rooted connection and role in their families can be a constraint when it comes to hunting. The responsibility of childcare and planning activities often falls on women (Henderson, 1996), as a result of cultural gender roles that exist in the encompassing macro level. Women hunters listed *Not Enough Time Because of Children* to be a limiting factor in their hunting experience (Adams & Steen, 1997). Additionally, this constraint connects to findings that women generally make outdoor recreation decisions for their families (Mcfarlane et al., 2003).

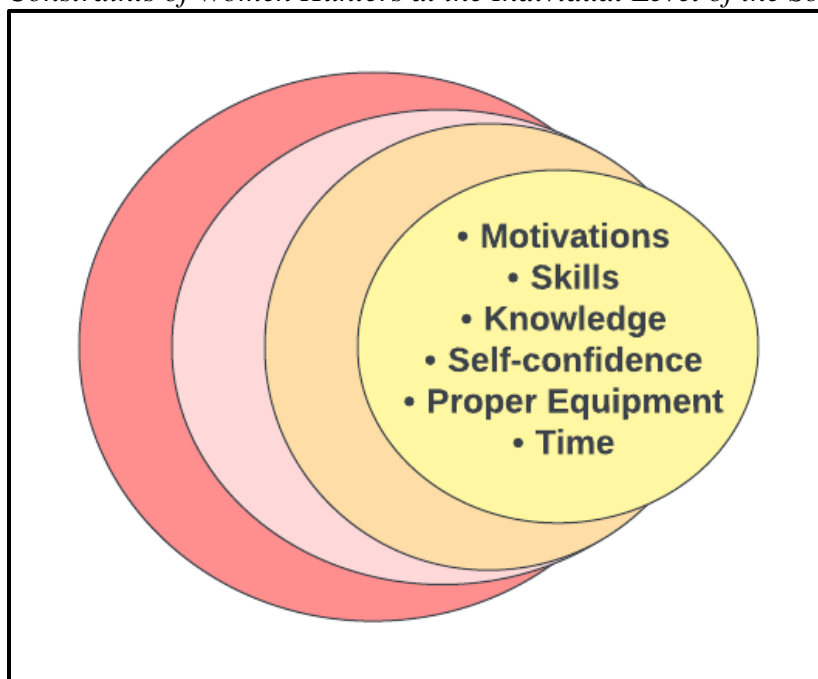
The flip side of this, however, reveals that women are two and a half times more likely than men to hunt in order to spend time with their family members (Ryan & Shaw, 2011).

Because of this, women hunters provide opportunities to introduce their children and family members to hunting if adequate opportunities are available. Family camps, family-friendly hunting areas, and family licensing structures are all potential ways to support (Metcalf et al., 2015). Because of their influence and interest in their families, wildlife agencies need to recognize the cascading potential that may come from reaching and engaging more women into hunting (McFarlane et al., 2003). However, separating women from their families is essential to deconstructing societal norms and culturally imposed gender roles. Therefore, priority should be placed on identifying and navigating constraints affecting the participation of women as individuals. This requires examining the inner most level of their lives.

Individual Level Constraints

Figure 12

Constraints of Women Hunters at the Individual Level of the Social-Ecological Model



It is impossible to consider the experiences of women hunters without understanding how relational, communal, and societal factors impact the inner most aspects of their lives. Women value their connection with non-human creatures and have a desire to spend time outside (Quartuch et al., 2017; Gigliotti & Metcalf, 2016). In connection with this and ecofeminism, *Connecting with Nature* was a top motivation for women hunters (Metcalf et al., 2015). Because many women come to hunting through a non-traditional route, the importance of spending time outside is a justified motivation (Larson et al., 2014). However, past exclusion of women in outdoor recreation continues to be a constraint. Women often do not feel welcome in outdoor recreation or feel judgment from others based on societal norms regarding the acceptance of their participation (Culp, 1998; Macfarlane et al., 2003). Increasing a person's connection to nature and comfort in outdoor settings is essential for continuation in an outdoor recreation activity (O'Farrell & Liu, 2020).

Furthermore, women's participation in hunting is related to their perception of their own skills. Warren and Loeffler (2006) found that while women are eager to develop outdoor skills there has been a lack of support for them to do so. Historically, women did not have opportunities to develop wildlife related skills because of lacking mentorship from families and communities, a constraint mentioned earlier. In the literature, women hunters identified *Lack of Training and Skills* as constraints in their hunting journey that limited their participation. This constraint then translates to a fear of not fitting in which becomes another barrier (Metcalf et al., 2015).

Having personal knowledge of wildlife is essential to be a successful hunter. However, research demonstrates that women in the 1980s had less knowledge about wildlife and their habitats (Kellert & Berry, 1987; Jackson et al., 1989). In a study by Metcalf et al. (2015)

Complex Rules and Regulations was a constraint identified by women hunters and hunting with people who are more knowledgeable was a strategy taken by women hunters to navigate knowledge barriers. However, it can be difficult for women to put themselves in situations where they are perceived as knowing or being qualified less than others who are more experienced (Warren & Loeffler, 2006).

Perception of self is an important aspect of hunting for women. This affects skill and knowledge development, but also self-confidence (O'Farrell & Liu, 2020). Women identified "lack of self-confidence" as a constraint in a variety of outdoor recreation settings (Culp, 1998; Warren & Loeffler, 2006). Further, women rated their self-confidence in all hunting related activities lower than men did (Jackson et al., 1989). And women who enter hunting spaces can be intimidated by others who have more experience than them (Culp, 1998; Macfarlane et al., 2003). This has a negative impact on one's perception of self and sense of belonging.

A sense of belonging within an outdoor activity is associated with having the correct equipment. In hunting proper equipment is necessary for comfort, safety, and an ethical harvest. Jackson (1988) and Adams and Steen (1997) found that inadequate equipment or clothing were common constraints specified by women hunters. Further, acquiring all the necessary gear takes time and contributes to the financial burden of hunting (Metcalf et al., 2015). Hunting expenses can add up quickly when factoring in gear, licensing, and travel to locations; which all can vary depending on the season. Further, hunting is a time intensive activity. Some hunters take time off work to increase the amount of time they spend in the field. Martin and Miller (2008) identified time and financial strain to be among the most limiting constraints from women hunters. Adams and Steen (1997) found that women hunters ranked *Not Enough Time Due to Work or Family*

Obligations as a high level constraint. Women hunters, therefore, spend less time in the field than do male hunters (Martin & Miller, 2008).

When examining the constraints of women hunters across all levels of their lives it becomes evident how interconnected the limitations are. The gender roles existing at the macro level affect the mentorship and social networks available to women hunters. From there, these traditional expectations result in less time, less resources, and less support. These constraints leak from the meso and micro levels into the individual level, creating barriers with self-confidence and skills. Understanding the overlap and complexity of constraints to women in hunting is the first step in creating effective hunter support resources.

Current Resources

In this research, *resources* refer to any support that exists to improve the opportunities of women hunters. Generally these resources are in the form of programs, classes or workshops. The decline in hunting participation, and the associated decline in wildlife conservation funding, brought attention to programs focused on recruiting and retaining hunters. The recognition of past exclusion of women in hunting led to the research and development of women's specific hunting programs. The main goals of these programs have been to minimize the impacts of constraints women face in hunting.

One of these resources is called Becoming an Outdoors Woman (BOW), which is a weekend outdoor skills-based program that started in 1991 and has spread across the nation. Beyond BOW is an extension program of BOW that was developed to specifically focus on teaching women hunting related skills. Since 1996, the Wyoming Game and Fish Department began offering BOW and Beyond BOW workshops to promote the inclusion of women in the outdoors (Luek, 1995; A. Leonard, personal communication, September 30, 2022). These

programs have been effective at building skills, knowledge, and self confidence amongst participants (Ensign, 1999). According to Jones (2007), women who participated in BOW workshops had less perceived constraints and were more like to be involved in outdoor activities.

However, single-event activities, like BOW programs, may not effectively translate to long-term hunter retention (Larson et al., 2014). After weekend BOW workshops, women participated less in the activities they were introduced to. Specifically related to hunting, participation in activities involving firearms did not increase after BOW participation. (Martin & Miller, 2008). Although Jones (2007) found that participation in BOW helps women overcome constraints related to lack of social support or lack of skill, there are mixed results on whether or not these relationships are sustained after the program.

Additional hunter support programs such as the First Hunt Foundation (FHF) focus more on mentorship to recruit and retain hunters (First Hunt Foundation, 2023). This program is built around a process that focuses on building relationships through a step-by-step plan to promote the long-term retention of hunting in culture. The Wyoming FHF state director expanded on this saying, “The idea is to teach the whole experience. Skills, confidence, and culture” (F. Williams, personal communication, Nov. 11, 2022). The Wyoming branch of the FHF is one of the most successful, containing roughly 100 members and 5 chapters, three of which are run by women. This program is run entirely by volunteers and uses existing hunters as mentors for those interested. Mentorship programs such as the FHF offer a potential solution for involving underrepresented people, who are coming to hunting though non-traditional paths. After all, “before a non-hunter participates in hunting-related activities, [they] first requires a network of social relationships with hunters” (Stedman & Decker, 1996).

Addressing the Gaps

Hunter support programs, such as BOW, Beyond BOW, and the FHF, may be essential in recruiting and retaining women hunters because they provide opportunities to overcome limiting constraints. However, current research on women hunters and hunters in general, has been primarily informed by those who actively do hunt. Women who participate sporadically or are interested in becoming hunters have not been included into most of the research (Macfarlane et al., 2003) According, to Ryan and Shaw (2011), the real challenge for increasing hunting participation is reaching individuals who are interested in hunting because this population is difficult to identify. In response to this gap, my study focuses on gathering information specifically from active and interested hunters.

Further, much of hunter human dimension research comes from states such as Texas, New York, Oregon, or Illinois. (Adams & Steen, 1997; Quartuch et al., 2017; Metcalf et al., 2015; Martin & Miller, 2008). However, states with high hunting participation and largely rural populations, such as Wyoming, may offer insight into different elements of hunting culture. Since Wyoming draws a high number of women hunters (Heberlein et al., 2008) research focused on these women could be insightful for nationwide hunting programs, with specific implications to other western states. Moreover, examination into human-dimensions of western hunter populations may offer additional approaches for supporting different demographic of hunters.

Through the lens of the social-ecological model, this literature review revealed how interwoven hunting culture is in the levels of a person's life. Furthermore, the constraints experienced by women hunters demonstrate how the influence of society, relationships, and self-identity affect a person's access to recreational activities. This highlights the importance of understanding and breaking down each level in order to best address specific constraints

impacting women's hunting journey. Existing hunter support programs are a step in the right direction but there is room for improvement. This study aims to expand on the literature discussed here to better the opportunities for women hunters.

Chapter 3

Methodology and Methods

Research Design

Using a quantitative methodology to answer my research questions, I sought to uncover *what* constraints and resources are impacting the hunting experiences of women in Wyoming. A quantitative approach allowed me to collect large quantities of data that addressed these questions. Using a survey, I compared the constraints of women who do hunt to those who are interested in beginning hunting. An electronic survey allowed me to reach participants from different locations.

Population and Participants

The population consisted of women in Wyoming who actively consider themselves hunters or who are interested in becoming a hunter. The participants were those who responded to the survey from the population group. To qualify to have their responses used in this study, participants needed to acknowledge they were 18 years or older at the time of survey completion. Participant responses from those who identified as male were not included.

Instruments

To answer my research questions, I created a web-based survey to collect data. Using Qualtrics® software, the survey instrument was made available for computers and mobile devices. The survey consisted of questions pertaining to constraints to women hunters, resources that support women hunters, and demographic questions (sex, race, age). The questions varied based on responses given by participants and were presented in multiple choice, Likert-scale matrixes, and short answer styles. An example of how these questions were presented to

participants can be found in Table 1. The survey was developed in November 2022 and distributed in January 2023. The entire overview of the survey and questions used in the analysis can be found in Appendix A.

Data Collection and Project Timeline

At the beginning of this research process ethical considerations were taken into account and this study was determined exempt by the IRB at the University of Wyoming.

This survey instrument was designed based on the literature on women hunters, hunting recruitment and retention programs, and constraints to women in their leisure. From this literature review I defined definitions of key terms. In my research a *constraint* was defined as factors “perceived or experienced by individuals that limit participation in recreation activities” (Jackson, 1997, pg. 461). An *interested hunter* was defined as a person who has no prior hunting experience but would like to participate in the future. An *active hunter* was defined as a person who had hunted prior to this survey.

In addition to reviewing the literature I consulted with members of the Wyoming Game and Fish Department’s education division and the Wyoming First Hunt Foundation. These meetings assisted in narrowing the scope of research questions and aided in identifying qualified participants.

Recruitment of Participants

Active women hunters were recruited through email from participation lists from prior Becoming an Outdoors Women (BOW) programs, Beyond BOW programs, Wyoming chapters of the First Hunt Foundation, and WY Women’s Antelope Hunt. Women interested in hunting were gathered from these same email lists but also recruited via flyers that contained a QR code. Because women interested in hunting could be anywhere within a community flyers were posted

and handed out on the University of Wyoming campus, local outdoor stores, coffee shops, and other frequented locations in Laramie, Wyoming. Participants who completed the survey were also able to send the link to other women or directed to contact the project investigator with emails of other hunters. I used direct and snowballing techniques to recruit participants.

Data Analysis

Survey Response

The survey instrument collected 343 responses over the span of 29 days. The survey was initially distributed to 239 emails of Wyoming BOW, Beyond BOW and the First Hunt Foundation participants. The survey completion rate of these emails was 21%. Once participants completed the survey they had the option to share it. Additionally, the survey was shared on social media sites. Therefore, the primary distribution technique was via snowballing-through social media sites and from the original email lists. Less than 1% of participants accessed the survey via QR code.

Filters for Analysis

Of the 341 total complete and non-male responses, 74% (n=253) of participants had hunted before. Of the participants who had not hunted before (n=88), 55% (n=48) people indicated they were interested in becoming hunters. Participants who indicated they had hunted before are considered *Active Hunters*. Participants who had not hunted before are considered *Interested Hunters*. Responses from people with no prior hunting experience and no interest in becoming a hunter (n=39) were not considered further in this study.

For the purpose of this research only those who indicated that they are non-male Wyoming residents were considered for answering the research questions. Of those who had hunted before 46% (n=108) of people were WY residents. Of those interested in hunting, 74%

(n=31) indicated that they were Wyoming residents. After applying these filters to the data set and using only completed surveys, the total number of responses was 129.

Research Question 1 and 2:

After the filters were applied, for statistical analysis, I performed a t-test using SPSS software to determine significance between the two groups. I assigned the Likert-scale questions numeric values to determine the means of both groups (Table 1). I used a t-test to determine difference between the means reported by each group. When the assumption of equal variance was not met I adjusted for it during the interpretation of significance. Factors that were not statistically significant between active and interested women hunters, as both a constraint or as an influence, are not discussed further in the following chapter.

Table 1

Numeric Values Assigned to Likert-Scale Matrix Questions

Constraint	Numeric Value
Strongly Limiting	4
Moderately Limiting	3
Mildly Limiting	2
Did Not Limit	1
Neutral	0
Influence	
Strongly Influential	4
Moderately Influential	3
Mildly Influential	2
Not Influential	1
Neutral	0

Research Question 3:

Respondents ranked their familiarity with existing hunter support resources, in addition to their interest in future proposed programs. Responses were calculated as percent and reported as such.

In summary, a quantitative approach through the use of an electronic survey allowed for data collection of two hunter groups. To answer the research questions of this study survey responses were filtered to include only non-male, Wyoming residents. In analysis, a t-test determined if the overlap in constraints experienced by the hunter groups was significantly different. The results of relevant survey questions and statistical analysis are presented in the following chapter.

Chapter 4

Results

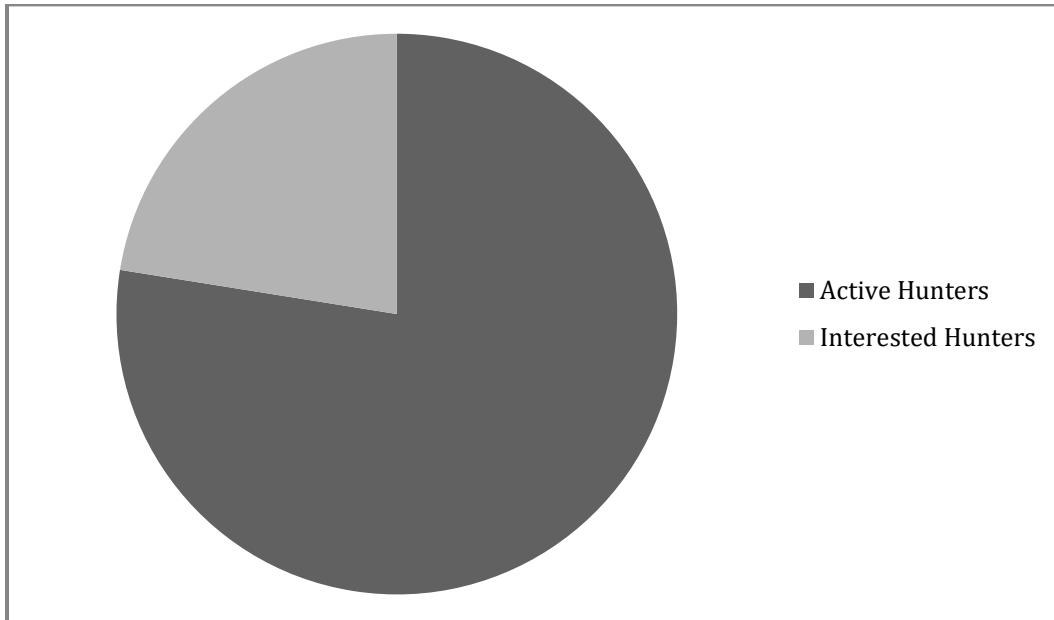
The research questions guiding this research focused on identifying the constraints on women actively hunt and those who are interested in hunting. Additionally, I asked these women about their familiarity and interest in supportive resources that would improve their hunting experiences. In this section I review pertinent demographics, beginning with those who identified themselves as *hunters* versus those who were *interested*. Then I display the findings related to retention of active hunters. Next, I address aspects of the research questions related to constraints. I identify constraints experienced by both groups and indicate the differences. Finally, I present the data related to my third research question regarding current and future interest in supportive resources.

Hunter Groups

As displayed in Figure 13, the majority of participants (78%) identified themselves as someone who had hunted before. As stated prior, anyone who replied in this way was considered an *Active Hunter* regardless of their current participation status. Those comprising the remaining group of participants (22%), made up the group of *Interested Hunters*.

Figure 13

Wyoming Participant Hunting Experience



Note. Only Wyoming residents and non-male responses were considered for analysis. Interested Hunters, (n=29). Active Hunters (n=100).

Demographics

Across all demographic factors there are participants from both groups. Women with variable identities are interested or actively participating in hunting. Although most responses came from the 18-25 age range, there are women interested in hunting across all ages. The average starting age of active hunters was 21 and Table 2 represents this by displaying that the majority of active hunters fall in the 18-25 and 26-35 age ranges. In alignment with findings on women hunters from previous studies (Adams & Steen, 1997; Larson et al., 2014; Quartuch et al., 2017), most women from both groups are married. Based on information from the U.S Census Bureau (2021) regarding the demographics for the state of Wyoming, the results of this study on race, age, and relationship status suggest a representative sample.

Table 2*Demographics of Participants*

Demographic	Interested Hunters		Active Hunters	
	n	%	n	%
Gender Identity				
Female	27	96	95	97
Non-Binary/Third Gender	1	4	3	3
Ethnicity				
Hispanic/Latino/Spanish	25	11	3	3
Not Hispanic/Latino/Spanish	3	89	95	97
Race				
American Indian/Alaska Native	0	0	3	3
Asian	1	3	1	1
Black/African American	0	0	0	0
Native Hawaiian/Pacific Islander	0	0	1	1
White	27	93	95	95
Other	0	3	0	0
Age				
18-25	11	39	24	24
26-35	7	25	25	26
36-45	6	21	17	17
46-55	2	7	16	16

Table 2 (continued)

Demographic	Interested Hunters		Active Hunters	
	n	%	n	%
Age				
55+	2	7	16	16
Sexual Orientation				
Straight/Heterosexual	23	82	85	89
Gay/Lesbian/Homosexual	1	4	3	3
Bisexual	4	14	6	6
Other	0	0	1	1
Prefer Not to Say	0	0	1	1
Relationship Status				
Single	11	39	25	26
Married/Life Partner	16	57	63	67
Other	1	4	6	6
Prefer Not to Say	0	0	3	3

Note. Interested Hunters, (n=29), Active Hunters, (n=100). All demographic questions were optional to respond to so response numbers per question did not necessarily include all participants of each group.

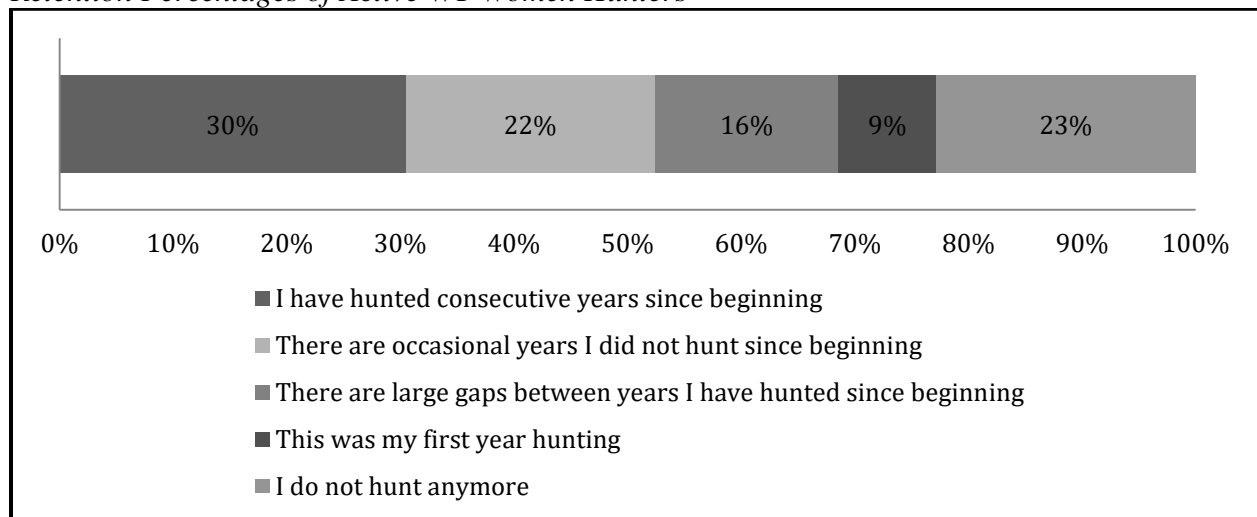
Retention of Active Hunters

The first question that guided this research was: What constraints are influencing the recruitment and retention of women interested in hunting in Wyoming? In addition to identifying constraints it was necessary to determine the participation of active hunters to address this question. Therefore, to consider the impact of constraints on the recruitment and retention of hunters, women who identified as active hunters were asked how many total years they have hunted. The average response was 8.15 years. To further understand their retention participation,

active women hunters were asked to describe their cumulative hunting experience (Figure 6). Most active women hunters have hunted consecutive years since they began. However, note in Figure 6 that over 23% of active hunters no longer hunt and 9% indicated this was their first season as a hunter.

Figure 14

Retention Percentages of Active WY Women Hunters



Note. Active Hunters, (n=100) responses on their total hunting years indicating their retention as hunters in Wyoming.

Constraints

Recall that the second research question asks whether there is overlap in constraints identified by women who do hunt and women who are interested in becoming hunters. So, to address aspects of research question one and this research question respondents were asked two questions regarding factors that are identified in the literature as being limiting and/or influential to women’s hunting experiences (Adams & Steen, 1997; Mcfarlane et al., 2003, Martin & Miller, 2008; Metcalf et al., 2015; Quartuch et al., 2017). Participants ranked constraints based on how limiting the factors are to their hunting experience. As an inverse to that question, respondents ranked the same factors based on how influential they are to their hunting experience in a

following question. The same factors were asked to both groups, active hunters and interested hunters.

Table 3 and Table 4 display the averages calculated after converting the Likert-scale questions into numeric values (Table 1, see methods chapter). Note that higher averages indicate a more limiting constraint. *Lack of Confidence in My Hunting Skills* is the constraint with the highest average among both groups. Further, there is a significant difference between active and interested hunters on this constraint. *Lack of Time to Hunt* was the highest ranked constraint by active hunters but did not result in significance between the groups because both identified it as a limitation. Below I discuss results of specific constraints that were significantly different in both Table 3 and Table 4.

Table 3*Constraints of Women Hunters and the Significant Difference Between Hunter Groups*

Constraint	Interested Hunters			Active Hunters		
	n	Mean	SD	n	Mean	SD
Lack of Familial Mentorship*	29	2.83	1.41	100	2.05	1.37
Lack of Mentorship from Spouse	29	1.69	1.51	99	1.26	1.04
Lack of Non-familial Mentorship	29	1.97	1.64	99	1.45	1.14
Lack of Hunting Companions	29	2.55	1.38	99	2.13	1.21
Lack of Confidence in Skills**	29	3.28	1.25	99	2.07	1.31
Lack of Primary Equipment**	29	2.83	1.26	98	1.57	1.21
Lack of Secondary Equipment	29	1.83	1.31	99	1.35	0.85
Lack of Time to Hunt	29	2.34	1.11	98	2.31	1.23
Lack of Financial Capabilities to Hunt*	29	2.14	1.30	99	1.57	1.11
Lack of Access To Land to Hunt On	29	1.86	1.41	98	1.80	1.21
Lack of Knowledge on Wildlife**	29	2.55	1.18	99	1.55	1.00
Lack of Knowledge on Hunting Regulations**	29	3.03	0.94	98	1.55	1.03

Note. * Two-tailed p-value < 0.05. ** Two-tailed p-value < 0.001.

Table 4*Influence of Factors on Hunting Experiences and the Significant Difference Between Hunter Groups*

Factor	Interested Hunters			Active Hunters		
	n	Mean	SD	n	Mean	SD
Familial Mentorship*	29	3.24	2.88	100	2.57	1.62
Mentorship from Spouse**	29	3.34	1.14	100	2.26	1.54
Non-familial Mentorship*	29	2.86	1.13	100	2.32	1.40
Companions to Hunt With	29	3.38	0.98	100	3.01	1.29
Confidence in Hunting Skills*	29	3.48	0.95	99	2.80	1.01
Possession of Primary Equipment	29	3.07	1.10	100	2.67	1.32
Possession of Secondary Equipment	28	2.54	1.20	100	2.35	1.27
Time to Hunt	29	2.72	1.19	100	2.90	1.13
Financial Capabilities to Hunt	29	2.55	2.30	100	2.32	1.22
Access to Land to Hunt On	29	2.83	1.04	99	2.47	1.22
Knowledge of Wildlife*	29	3.14	1.30	100	2.62	1.09
Knowledge of Hunting Regulations*	29	3.24	1.02	100	2.52	1.21

Note. * denotes significance of two-tailed p-value < 0.05. ** denotes significance of two-tailed p-value < 0.001

Familial Mentorship

In Table 3, note the significant differences between active and interested hunters on the lack of familial mentorship (parent, sibling, etc.) as a constraint, $p = 0.008$. In addition, these data indicated a significant difference between active and interested hunters on the influence of familial mentorship (parent, sibling, etc.) in their hunting experience, $p = 0.042$. Interested hunters are less likely to have familial support (Ryan & Shaw, 2011; Quartuch et al., 2017) and

therefore lack this traditional mentorship making the difference in limitation and influence understandable.

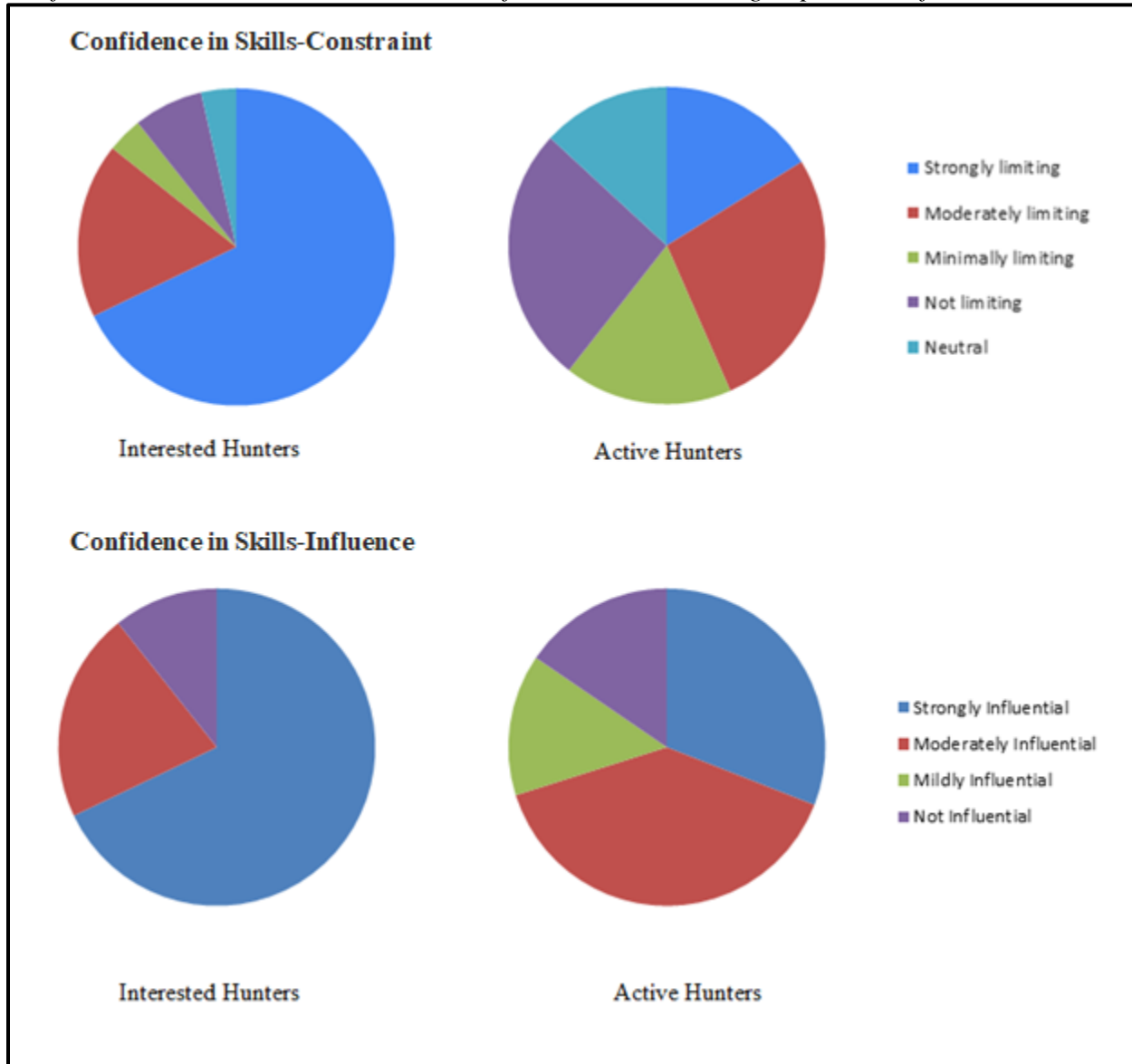
Confidence in Hunting Skills

There is a significant difference between active and interested hunters on the lack of lack of confidence in their hunting skills as a constraint, $p = <0.001$. Most women (46%) interested in becoming hunters ranked *Lack of Confidence in My Hunting Skills* to be strongly limiting their hunting experience (Figure 15). This demonstrated that interested hunters are more limited by lack of confidence in their skills than active hunters.

There is also a significant difference between active and interested hunters on the influential of confidence in their skills on their hunting experience, $p = 0.003$. Confidence in hunting skills was strongly influential in the hunting journey across both groups, as a majority of the respondents (89%-interested hunters, 69%-active hunters) indicated that *Confidence in My Hunting Skills* to be strongly or moderately influential to their hunting experiences. This suggests that the role of confidence in hunting is perceived as a greater limitation and a greater influence to women who are interested in hunting than active women hunters.

Figure 15

Confidence in Skills as a Constraint and Influence to the Hunting Experience of WY Women



Note. Interested Hunters, (n=29), Active Hunters, (n=100). As a constraint, confidence in skills was significantly different for interested hunters than active hunters ($p = 0.013$). As an influence, *confidence in skills* was not significantly different among the two groups.

Knowledge of Wildlife and Hunting Regulations/Laws

There is a significant difference between active and interested hunters on the lack of knowledge on the wildlife they are hunting, as a constraint, $p = <0.001$. Also, there is a significant difference between active and interested hunters on the lack of knowledge of hunting

regulations and laws, as a constraint, $p = <0.001$. Expanding on this, when examining knowledge of wildlife and knowledge of hunting regulations, there are significant differences between the hunter groups. ($p = 0.027$, $p = 0.002$ respectively) between the hunter groups as influences on hunting experiences. Based on these data, interested women perceive knowledge of wildlife and regulations as important to their hunting experience and also identify that a lack of this information is limiting their participation.

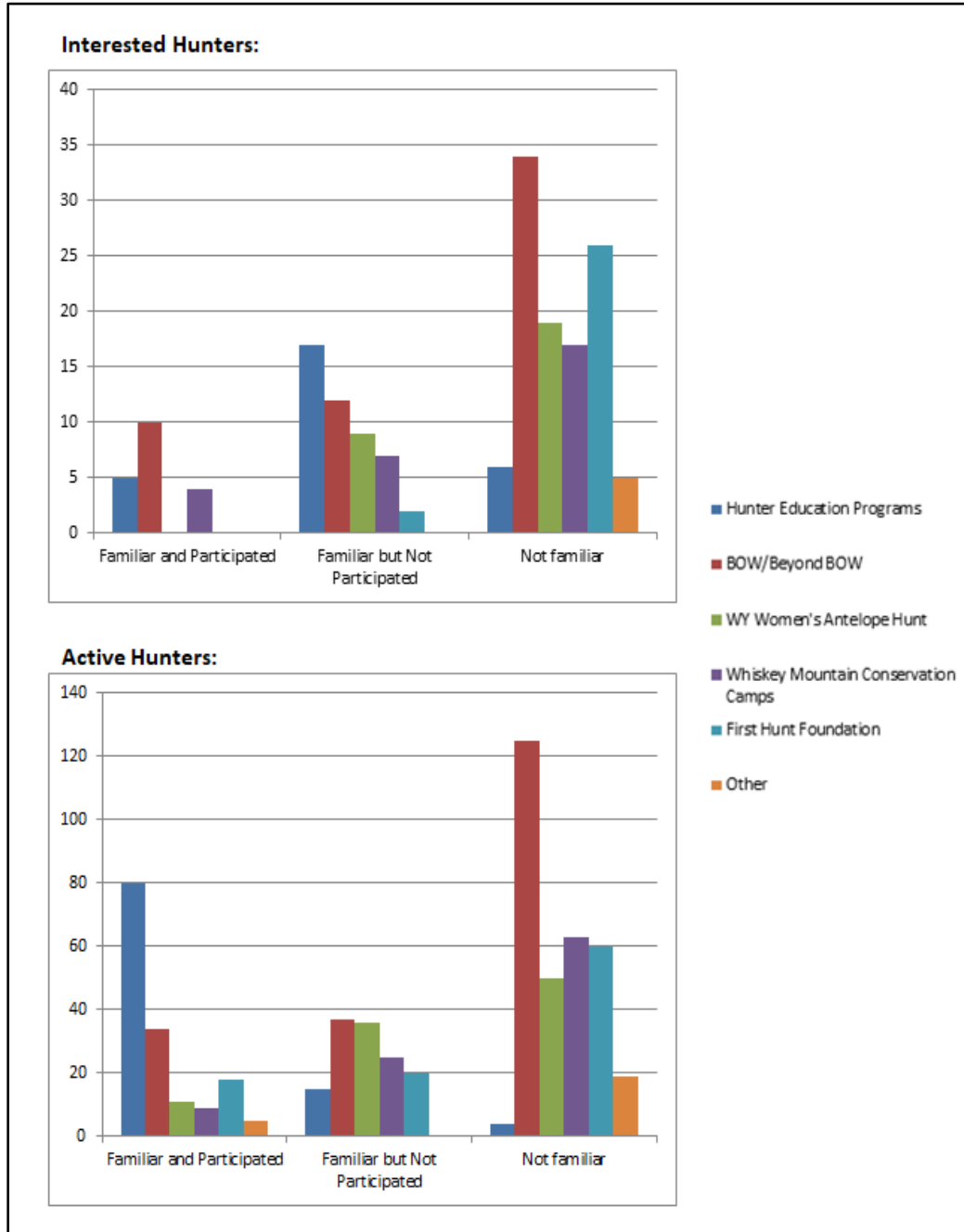
Current Resources

The final question addressed in this research was: What resources do women in Wyoming identify to be helpful in becoming hunters? Recall that *resources* refer to any support that exists to improve the opportunities of women hunters. Generally these resources are in the form of programs, classes or workshops.

To determine if current resources are addressing the constraints and needs of women hunters, respondents ranked their familiarity and participation in four known hunter-assistance programs in Wyoming. These data are found in Figure 16. Note that most responses from both groups indicate that participants are unfamiliar with these hunter assistance programs. However, among active hunters the participation in hunter education programs is higher than that of interested hunters. This may be attributed to the fact that hunter education programs are required in the state of Wyoming to legally harvest an animal. Interestingly, interested hunters indicate that while some are familiar with hunter education programs they have not participated. Moreover, BOW and Beyond BOW are the most unfamiliar resource across both hunter groups.

Figure 16

Participation in WY Hunter Support Programs by Interested and Active Women Hunters



Note. Active Hunters, (n=100), Interested Hunters, (n=29). Data presented as response counts.

In a following survey question both groups selected additional resources that would further support their hunting journey. Note that in Table 5 *Programs with Only Women* was

selected most often by interested women hunters. This resource was also highly selected by active women hunters. However, the top choice for active hunters was *Accompanying Others on Hunts*. Other selections of note included *Firearm/Archery Safety Courses and Mentored Hunts*.

Table 5

Interest in Additional Resources by Wyoming Women Hunters

Resource	Interested Hunters		Active Hunters	
	n	%	n	%
Programs with family	13	7%	33	8%
Programs with spouse/life partner	18	9%	35	9%
Programs with only women ^a	25	13%	41	10%
Online classes	16	8%	24	6%
Firearm/Archery Safety Courses ^a	19	10%	26	7%
Weekly/Bi-weekly workshops	10	5%	16	4%
One time, multi-day workshops	12	6%	36	9%
Simulation Hunts	9	5%	21	5%
Accompanying Others on Hunts ^a	17	9%	44	11%
Mentored Hunts ^a	17	9%	39	10%
Programs with hunters of same level	16	8%	30	8%
Programs with multi-level hunters	6	3%	25	6%
Gear Rental Programs	16	8%	18	5%
Other	0	0%	6	2%

Note. This table contains percentages from interested women hunters and active women hunters on their interest in additional supportive programming in Wyoming. Interested Hunters, (n= 29) Active Hunter, (n=100). ^a indicates resources with high percentage of interest from participants. These resources connected with constraints identified by both hunter groups.

In summary, the results from interested and active hunters did show overlap on constraints that influence their hunting experiences. Interested hunters are more limited by constraints than active hunters. Statistical analysis determined significance between the groups on specific factors. In addition to this, both hunter groups demonstrated variable familiarity and participation in current hunter support resources. However, both hunter groups imply interest in future resources that correspond with existing programs and constraints. Implications of these findings are discussed in the following chapter.

Chapter 5

Discussion

This research addressed concerns regarding hunting participation by women. With a majority of state wildlife agencies relying on the sale of hunting license to fund their conservation work, countering the decrease in hunting participation is critical. Women are underrepresented in this activity but have been showing increased interest over the last decade. Therefore, this research centered on identifying limiting constraints of women hunters in Wyoming. Two hunter groups, active and interested, were sampled using an electronic survey. Additionally, this research identified programs that can be improved to best support these women on their hunting journeys.

Through the lens of feminist and ecofeminist theory, along with the ecological theory model, the constraints of women hunters were found to span all levels and be interconnected to relationships women experience in their lives. These findings aligned with existing literature.

Major Findings and Implications

Demographics

In alignment with other studies, women in Wyoming begin hunting later in their life (Heberlein et al., 2008). Interestingly, the findings in my study suggest that age is not necessarily a determinant of interest in hunting, as interested hunters spanned all age ranges. Most participants in my study are married. Women who are married are more likely to hunt (Adams & Steen, 1997; Mcfarlane et al., 2003) and the findings in my research support this. Additionally, women interested in hunting represented multiple races and sexual orientations. As national demographics change, hunting culture will need to be more inclusive to bolster participation and reach these groups of interested hunters.

Implications of these findings could mean that there need to be more supportive resources that target larger age ranges. Further, and as suggested in Table 5, programs that support married women and their spouse/life partner may be something to consider for recruiting more women hunters. Organizations looking to support other under-represented populations should be encouraged by these findings and should adjust recruitment strategies to be as responsive and inclusive as possible.

Retention

It is encouraging to find that most women have hunted consecutive years since beginning. With the average starting age being 21 and the average years hunting being 8.15, women in Wyoming are a reliable hunter population. Further, 9% of active hunters were first time hunters. This implies that current recruitment efforts are effective. However, 23% of active hunters indicated they no longer hunt. Investigation into this data could yield additional ideas for support and potential continued retention of the women.

Constraints

In answering my first research question I identified constraints that are affecting the hunting experiences of women in Wyoming. Both active and interested hunters indicated that the proposed constraints are limiting. Interested hunters had higher average responses for all constraints, meaning this group is more limited than active hunters. This finding is valuable as prior studies focused primarily on active hunters (Ryan & Shaw, 2011). Understanding how constraints are perceived by interested hunters in comparison to active hunters may improve the support resources and strategies currently involved in hunter recruitment and retention efforts.

Expanding on this idea and in addressing my second research question, I found that the differences between active and interested hunters. By comparing responses I determined which

constraints are most limiting and most influential to the hunting experience. The implications of these findings are discussed below.

Mentorship

As suggested in the literature, mentorship is an important factor in hunting (Mcfarlane et al., 2003; Ryan & Shaw, 2011) and the findings in my research support this claim. Interested hunters ranked mentorship of all kinds (familial, spouse, non-familial) to be more influential on their hunting experience than active hunters. However, familial mentorship was the only form with significant difference as a constraint between the groups. In other words, interested hunters ranked family mentorship to be more limiting than active hunters because they most likely do not have access to this traditional support system, although they also indicate an understanding of its importance.

The implications of this suggest that to better support interested hunters, resources and programs should prioritize non-familial mentorship programs. Interested hunters recognize the value of mentorship, but the lack of family mentorship cannot necessarily be addressed by organizations. Non-familial mentorship did not have significance as a constraint so there seems to most opportunity for support here.

Confidence in Skills

Lack of confidence was a limiting constraint of both groups. Prior studies support this finding, suggesting that lack of confidence greatly affects women in hunting and other forms of recreation (Warren & Loeffler, 2006). Despite being the most limiting constraint of both hunter groups, interested hunters are significantly more limited by a lack of confidence in their skills than active hunters. This finding is important because it reveals that lack of confidence continues to be a limitation experienced by active hunters but is also a major barrier for women interested in becoming hunters.

The implications of this finding suggest that confidence in self and skills is an important area to support women. As suggested in my theoretical frameworks and literature review, confidence in self and skills is most likely connected to the deep-rooted influence of environments and relationships surrounding individual women.

Equipment and Financial Capabilities

A new finding that is not represented in existing literature is the identification of *Lack of Primary Equipment (firearm, bow, etc.)* as a significant constraint between active and interested hunters. A possible explanation for this that active hunters do not consider acquisition of these tools to be limiting because they have already navigated this constraint. Whereas interested hunters most likely do not possess primary equipment and may be unsure or intimidated about how to acquire such. This constraint may also be connected to a lack of confidence in skill because interested hunters may not have experience using primary equipment necessary for hunting and therefore may not know what equipment they need.

Lack of Financial Capabilities to Hunt was also significant as a constraint. Active hunters may be less limited by cost because they have navigated this constraint or may have access to financial resources from familial connections. Although hunter support organizations may not be able to reduce the costs associated with hunting, there may be additional ways of supporting hunters to minimize the impact of this constraint on recruitment and retention. Recall that Table 5 shows that interested hunters are more likely to participate in gear rental programs.

Knowledge of Wildlife and Regulations

Lack of knowledge of wildlife and hunting regulations was significantly different between interested and active hunters. This finding was surprising and not widely represented in existing literature surrounding constraints of women hunters. However, as suggested in Metcalf

et al. (2015) simplification of this information may support higher participation. Therefore, the implications of these findings may be informative sessions that could provide women interested in hunting opportunities to learn and overcome this limitation.

Resources and Programs

To address my third research question I identified resources that could support women hunters in navigating constraints. A noteworthy finding is that the women interested in hunting are familiar with hunter education programs but have not yet participated. These women have a desire to hunt and recognize the need to complete a hunter education requirement.

Unsurprisingly, active hunters were more aware of hunter education courses because they are required for legal hunting in Wyoming. In contrast with responses for hunter education programs, most women from both groups indicated they are *Unfamiliar* in reference to other existing hunter support programs. This is interesting because most of these programs, such as the First Hunt Foundation (mentor program) and BOW workshops (skills-based sessions), currently address constraints that participants state limit their hunting experiences.

The findings from this research suggest that both active and interested women hunters are looking for programs focused primarily on mentorship and companionship with other women. In connection with existing literature, programs with only women generally provide spaces for women to navigate constraints, such as lack of self-confidence or lack of knowledge (Culp, 1998; Warren & Loeffler, 2006). Based on these findings mentorship programs should be a focus of hunter support organizations. A place of growth in these existing programs could be enlisting the guidance of active women hunters as mentors for women interested in hunting. Due to the responses of participants on their familiarity with existing hunter support resources, I suggest further collaboration among these organizations. To encourage the participation of women

interested in becoming hunters and continued retention of active hunters, there needs to be intentional communication among hunter support efforts. Increasing the accessibility and collaboration of these programs may decrease the impacts of constraints felt by both groups. Additionally, these data may be useful to these resources in being more effective in their marketing and outreach strategies to best reach interested and active hunters.

Survey Response

Although this research focused on the experiences of Wyoming resident women hunters, the large response from non-residents in the unfiltered survey sample is important to acknowledge. Hunting culture in Wyoming is unique in that it is a destination hunting location, meaning non-resident people often come to the state to hunt. This is valuable because a large portion of funding for the state wildlife agency comes from out-of- state license sales (WGFD Revenue Sheet, 2020). Understanding the constraints and experiences of these non-resident but in-state hunters could provide additional insight in how to best support hunting for women across state lines.

Limitations

The methodology applied in this research allowed me to sample a large number of people. I acquired broad information to answer my research questions and successfully gathered data from two hunter groups. An electronic survey allowed for distribution to happen quickly and expanded the reach of my data beyond my physical location. But, using a survey did not allow me acquire information beyond the scope of the survey questions.

Based on this, my study answers research questions focused on identifying constraints and resources that exist for Wyoming women who actively hunt or are interested. The data acquired in this study was quantifiable and allowed for statistical analysis to determine

significance in responses between these two groups. However, my study cannot give context around the specific experiences of the participants of this research.

Recommendations for Future Research

In future studies focused on understanding the experiences of women hunters I propose further investigation into each constraint identified to be different between active and interested hunters. Perhaps a more specified survey that could reach additional participants not represented in this research. Moreover, I suggest that future research incorporate qualitative methodology to explore the *why* and *how* of these responses, providing a more complex understanding of the lives of women hunters.

Some existing literature suggests that the decrease in hunting may not be curbed by recruiting more new hunters, but rather by expanding to include non-consumptive activities to involve more non-hunters (Quartuch et al., 2017). Non-consumptive activities might include wildlife photography or wildlife viewing. This draws on the idea that someone does not need to pull a trigger to be deeply connected to hunting (Mcfarlane et al., 2003; Ryan & Shaw, 2011; Larson et al., 2014). Based on this it may be necessary for wildlife agencies to consider non-hunters and non-consumptive wildlife related activities as potential groups of interest. Therefore, an additional avenue for future research on hunting participation may involve consideration around the non-consumptive engagement of people connected to wildlife and hunting culture. Investigations on this could provide alternatives for conservation funding, recreation opportunities, and could be a way in which programming expands to reach a broader audience within communities.

Concluding Remarks

The findings of this study reveal that women in Wyoming encounter constraints in their pursuit of becoming hunters. These constraints occur across all levels of the social-ecological model demonstrating the complexity of hunting as an activity. While these constraints present at specific levels within the model it is the encompassing and bidirectional relationships of the levels that makes understanding the experiences of women hunters so important. In viewing their limitations not just at one level of their lives, in context of unjust systems and deep relationships, that hunting culture can be better understood. Recognizing how historic settings and societal norms actively present in perceptions of confidence and knowledge in individual women should inform how resources can better support hunters. Expanding the nested complexity of hunting culture across cultural, communal, and familial relationships can guide future recruitment and retention efforts.

It is equally necessary to understand how hunting is uniquely interwoven into outdoor recreation, human culture, wildlife management, and conservation funding. As such hunting remains an integral part of life in Wyoming. In a state with abundant wildlife populations and ample public lands there is opportunity for hunting participation to continue and expand to reach those previously excluded. Therefore, using these findings, I call for hunter support organizations to consider the complexity and multi-level influence of hunting and the constraints experienced by women hunters when moving forward with developing resources. Finally, I call for women to continue their pursuit of becoming, so that hunting in Wyoming can continue in a more equitable and equal way.

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Appendix A: Survey Instrument

Start of Block

Q1 Informed Consent Statement:

You are invited to participate in a research study about the constraints and resources available to women interested in hunting in Wyoming. The goal of this study is to identify constraints to hunting for women who do hunt and women who are interested in beginning hunting. Additionally, this study hopes to identify what resources have been or would be useful to better support women hunters in Wyoming.

This survey should take no more than 20 minutes to complete.

Participation in this survey is completely **voluntary**. If you agree to participate in this survey you will be asked questions pertaining to constraints and resources that have impacted your experience with hunting, as well as, general non-identifying demographic questions. Any possible personally identifying information will be removed during analysis. Your information will be kept **anonymous**.

Participants must be 18 years or older at the time of survey completion.

The target audience for this survey is women and non-binary individuals.

The Wyoming Game and Fish Department or any other mentioned organizations, other than the University of Wyoming, are not the source of this research.

If you have any questions about this study, please contact Addison Perryman at aperrym1@uwyo.edu. If you have questions about your rights as a research participant, please contact the Office of Research and Economic Development at the University of Wyoming at 307-766-5353. By completing questions in this survey, you are consenting to the use of that data in this study.

I have read the above statement and consent to participate in this survey:

- Yes (1)
- No (2)

Skip To: End of Survey If Informed Consent Statement: You are invited to participate in a research study about the constraint... = No

Display This Question:

If Informed Consent Statement: You are invited to participate in a research study about the constraint... = Yes

Q2 Have you hunted before?

Yes (3)

No (4)

End of Block: Intro statement and have you hunted before?

Start of Block: No I have not hunted before-interested?

Display This Question:

If Have you hunted before? = No

Q3 Are you interested in becoming a hunter?

Yes (1)

No (2)

End of Block: No I have not hunted before-interested?

Start of Block: I have not hunted before but I am interested

Display This Question:

If Are you interested in becoming a hunter? = Yes

Q4 Are you a Wyoming resident?

Yes (1)

No (2)

Display This Question:

If Are you interested in becoming a hunter? = Yes

Q5 Why do you want to become a hunter?

Display This Question:

If Are you interested in becoming a hunter? = Yes

Q6 What type of hunting are you interested in?

- Archery (1)
- Firearm (2)
- Both (3)

Display This Question:

If Are you interested in becoming a hunter? = Yes

Q7 What type of hunting are you interested in? (Check all that apply)

- Big Game (Deer, Elk, Pronghorn, Sheep...) (3)
- Trophy Game (Black Bear, Mountain Lion...) (4)
- Upland Bird (Pheasants, Turkey, Grouse...) (5)
- Water Fowl (Ducks, Geese...) (6)
- Small Game (Cottontail rabbits, squirrels...) (7)
- Predator/Nuisance (Coyotes, Jackrabbits, Raccoon, Red Fox...) (8)

Page Break

Display This Question:

If Are you interested in becoming a hunter? = Yes

Q8 To what degree have the following constraints limited your hunting experience?

	Strongly limited my hunting experience (1)	Moderately limited my hunting experience (2)	Neutral (5)	Minimally limited my hunting experience (3)	Did not limit my hunting experience (4)
Lack of familial mentorship (parent, sibling, etc.) (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack mentorship from spouse/life partner (13)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of mentorship from non-familial person (friend, colleague) (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of companion(s) to hunt with (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of confidence in my hunting skills (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of primary equipment (Firearm, Bow, etc.) (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of secondary equipment (clothing, boots, backpack, etc.) (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of time to go hunting (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Lack of financial capabilities to hunt (8)

Lack of access to land to hunt on (9)

Lack of knowledge on wildlife I am hunting (10)

Lack of knowledge on hunting regulations/laws (11)

Display This Question:

If are you interested in becoming a hunter? = Yes

Q9 How influential would the following be to your hunting journey?

	Strongly influential (1)	Moderately Influential (2)	Mildly Influential (3)	Not Influential (4)	I lack this (5)
Mentorship from Family member (parent, sibling, etc.) (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mentorship from Spouse/Life Partner (12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mentorship from Non-Familial person (friend, colleague etc.) (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Someone to go hunting with (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Confidence in my hunting skills (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Possession of primary equipment (rifle, bow, clothing etc.) (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Possession of secondary equipment (clothing, boots, backpack, etc.) (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Time to go hunting (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Financial capabilities to hunt (7)

Access to land to hunt on (8)

Knowledge of hunting regulations and laws (9)

Knowledge of the wildlife I am hunting (10)

Page Break

Display This Question:

If Are you interested in becoming a hunter? = Yes

Q10 How familiar are you with the following hunting programs?

	Familiar and I HAVE participated (1)	Familiar but I HAVE NOT participated (2)	Not familiar (3)
Hunter Education Programs (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Becoming an Outdoors Woman (BOW) (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Beyond BOW (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
WY Women's Antelope Hunt (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Whiskey Mountain Conservation Camps (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
First Hunt Foundation (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Display This Question:

If Are you interested in becoming a hunter? = Yes

Q11 Please select any of the resources below that would support your hunting journey:

- Programs with my family (1)
- Programs with my spouse/life partner (2)
- Programs with only women (3)
- Online classes (4)
- Firearm/Archery Safety Courses (5)
- Weekly/Bi-weekly workshops (6)
- One time, multi-day workshops (7)
- Simulation Hunts (8)
- Accompanying Others on Hunts (9)
- Mentored Hunts (10)
- Programs with hunters of my same level (11)
- Programs with multi-level hunters (12)
- Gear Rental Programs (13)
- Other (14) _____
- Other (15) _____

Display This Question:
If Are you interested in becoming a hunter? = Yes

Q12 In what ways would any of the above programs be beneficial to your hunting experiences?

Page Break

Display This Question:

If Are you interested in becoming a hunter? = Yes

Q13 To what level are you interested in any of the following wildlife-related activities?

	I do participate (1)	I am interested in participating (2)	I do not participate and am not interested (3)
Shed Antler Collecting (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wildlife viewing (ex: bird watching) (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wildlife Photography (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wildlife Themed Art (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cooking with game meat (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fishing (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Storytelling (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Habitat Restoration Efforts (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Display This Question:

If Are you interested in becoming a hunter? = Yes

Q14 What other outdoor recreation activities do you participate in?

Display This Question:
If Are you interested in becoming a hunter? = Yes

Q15 Is there anything else you would like to share about your hunting experience(s)?

End of Block: I have not hunted before but I am interested

Start of Block: I do NOT hunt and I am NOT interested

Display This Question:
If Are you interested in becoming a hunter? = No

Q16 Why are you not interested in becoming a hunter?

Display This Question:

If Are you interested in becoming a hunter? = No

Q17 To what level are you interested in any of the following wildlife related activities?

	I do participate (1)	I am interested in participating (2)	I do not participate and am not interested (3)
Shed Antler Collecting (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wildlife viewing (ex: bird watching) (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wildlife Photography (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wildlife Themed Art (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cooking with game meat (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fishing (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Storytelling (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Habitat Restoration Efforts (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Display This Question:

If Are you interested in becoming a hunter? = No

Q18 What other outdoor recreation activities do you participate in?

End of Block: I do NOT hunt and I am NOT interested

Start of Block: yes I have hunted before

Display This Question:

If Have you hunted before? = Yes

Q19 Are you a Wyoming resident?

Yes (1)

No (2)

Display This Question:

If Have you hunted before? = Yes

Q20 Please list all of the states you have hunted in:

Display This Question:

If Have you hunted before? = Yes

Q21 Why do you hunt?

Display This Question:

If Have you hunted before? = Yes

Q22 How many total years have you hunted?

Page Break

Display This Question:

If Have you hunted before? = Yes

Q23 What best describes your total hunting years?

- Consecutive, I have hunted each year since beginning (1)
 - There are occasional years I did not hunt after beginning (2)
 - There are large gaps between years I hunted after beginning (3)
 - This was my first year hunting (4)
 - I do not hunt anymore (5)
-

Display This Question:

If Have you hunted before? = Yes

Q24 How old were you when you began hunting?

Display This Question:

If Have you hunted before? = Yes

Q25 What type of hunting do you participate in?

- Archery (1)
 - Firearm (2)
 - Both (4)
-

Display This Question:

If Have you hunted before? = Yes

Q26 What type of hunting do you participate in? (Check all that apply)

- Big Game (Deer, Elk, Pronghorn, Sheep...) (3)
- Trophy Game (Bear, Mountain Lion...) (4)
- Upland Bird (Pheasants, Turkey, Grouse...) (5)
- Water Fowl (Ducks, Geese...) (6)
- Small Game (Cottontail rabbits, squirrels...) (7)
- Predator/Nuisance (Coyotes, Jackrabbits, Raccoon, Red Fox) (8)

Page Break

Display This Question:

If Have you hunted before? = Yes

Q27 To what degree have the following constraints limited your hunting experience?

	Strongly limited my hunting experience (1)	Moderately limited my hunting experience (2)	Neutral (5)	Minimally limited my hunting experience (3)	Did not limit my hunting experience (4)
Lack of familial mentorship (parent, sibling, etc.) (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of mentorship from spouse/life partner (12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of mentorship from non-familial person (friend, colleague) (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of companion(s) to hunt with (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of confidence in my hunting skills (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of primary equipment (Firearm, Bow, etc) (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of secondary equipment (clothing, boots, backpack, etc.) (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of time to go hunting (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Lack of financial capabilities to hunt (8)

Lack of access to land to hunt on (9)

Lack of knowledge on wildlife I am hunting (10)

Lack of knowledge on hunting regulations/laws (11)

Display This Question:

If Have you hunted before? = Yes

Q28 How influential were the following on your hunting journey?

	Strongly influential (1)	Moderately Influential (2)	Mildly Influential (3)	Not Influential (4)	I lacked this support (5)
Mentorship from Family member (parent, sibling, etc.) (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mentorship from Spouse/life partner (12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mentorship from Non-Familial person (friend, colleague etc.) (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Someone to go hunting with (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Confidence in my hunting skills (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Possession of primary equipment (rifle, bow, clothing etc.) (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Possession of secondary equipment (clothing, boots, backpack, etc.) (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Time to go hunting (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Financial capabilities to hunt (7)

Access to land to hunt on (8)

Knowledge of hunting regulations and laws (9)

Knowledge of the wildlife I am hunting (10)

Page Break

Display This Question:

If Have you hunted before? = Yes

Q29 How familiar are you with the following hunting programs?

	Familiar and I HAVE participated (1)	Familiar but I HAVE NOT participated (2)	Not familiar (3)
Hunter Education Programs (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Becoming an Outdoors Woman (BOW) (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Beyond BOW (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
WY Women's Antelope Hunt (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Whiskey Mountain Conservation Camps (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
First Hunt Foundation (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Display This Question:

If Have you hunted before? = Yes

Q30 In what ways have any of the above programs been beneficial to your hunting experiences? Please specify which program(s)

Display This Question:

If Have you hunted before? = Yes

Q31 Please select any of the resources below that would further support your hunting journey:

- Programs with my family (1)
- Programs with my spouse/life partner (2)
- Programs with only women, single gender programs (3)
- Online classes (4)
- Firearm/Archery Safety Courses (5)
- Simulation Hunts (8)
- Accompanying Others on Hunts (9)
- Mentored Hunts (10)
- Programs with hunters of my same level (11)
- Programs with multi-level hunters (12)
- Gear Rental Programs (13)
- One time, multi-day workshops (7)
- Weekly/Bi-weekly workshops (6)
- Other (14) _____
- Other (15) _____

Display This Question:

If Have you hunted before? = Yes

Q32 In what ways would any of the above programs be beneficial to your hunting experiences?

Page Break

Display This Question:

If Have you hunted before? = Yes

Q33 To what level are you interested in any of the following wildlife related activities?

	I do participate (1)	I am interested in participating (2)	I do not participate and am not interested (3)
Shed Antler Collecting (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wildlife viewing (ex: bird watching) (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wildlife Photography (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wildlife Themed Art (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cooking with game meat (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fishing (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Storytelling (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Habitat Restoration Efforts (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Display This Question:

If Have you hunted before? = Yes

Q34 What other outdoor recreation activities do your participate in?

Display This Question:
If Have you hunted before? = Yes

Q35 Is there anything else you would like to share about your hunting experience(s)?

End of Block: yes I have hunted before

Start of Block: Demographics

Q36 What gender do you identify as?

- Female (2)
- Male (1)
- Non-binary / third gender (3)
- Other (5)
- Prefer not to say (4)

Q37 What ethnicity do you identify with?

- Hispanic or Latino or Spanish Origin (2)
 - Not Hispanic or Latino or Spanish Origin (1)
-

Q38 What race(s) do you identify with?

- American Indian or Alaska Native (1)
 - Asian (2)
 - Black or African American (3)
 - Native Hawaiian or Pacific Islander (5)
 - White (6)
 - Other (8)
 - Prefer not to say (9)
-

Q39 What is your age?

- 18-25 (1)
- 26-35 (2)
- 36-45 (3)
- 46-55 (4)
- 55+ (5)
- Prefer not to say (6)

Q40 What is your sexual orientation?

- Bisexual (3)
 - Gay/Lesbian/Homosexual (2)
 - Straight/Heterosexual (1)
 - Other (4)
 - Prefer not to say (5)
-

Q41 What is your relationship status?

- Married/Life Partner (2)
 - Single (1)
 - Other (3) _____
 - Prefer not to say (4)
-

Q42 What is your zip code?

Q43 How did you hear about this survey?

- It was sent to me by a friend or family member (1)
 - I scanned a QR code from a flyer (2)
 - I scanned a QR code from a hand out (5)
 - I signed up after hearing a talk by the researcher (6)
 - I reached out to the researcher (3)
 - Other (4) _____
 - Prefer not to say (7)
-

Q60 Want to share this survey? Please copy the link below to send this survey to someone else!

https://uwyo.sjc1.qualtrics.com/jfe/form/SV_a8GdjZ30aYgFY6q

End of Block: Demographics

Author's Biography



Addison grew up in Cheyenne, WY where she developed a passion for wildlife and the outdoors from an early age. She attended the University of Wyoming in Laramie, WY and received a Bachelor's degree in Wildlife and Fisheries Biology and Management in 2020. After graduating

Addison worked with students in public schools and decided to combine her love for the outdoors with education. Addison completed the Teton Science Schools graduate program in 2022. She is now pursuing a career in conservation education with the goal of providing others opportunities to learn about wildlife and engage with nature. In her spare time, Addison enjoys fly fishing, hunting, traveling, reading, and general outdoor adventures with her friends and family. She is now living in Ennis, MT.