



# Roles for Wildlife in the Development of Place Meanings Ascribed to a Protected Area

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## Abstract

Wildlife play prominent roles in popular images of America's outdoor landscapes, yet our understanding of their contribution to place meanings is not fully developed. Although environmental management agencies have a long history of stewarding wildlife for hunting and fishing, they have been less inclined to prioritize non-consumptive uses such as the contribution of wildlife to sense of place. Given that agencies are increasingly challenged to implement policies that align with citizen priorities, connecting wildlife to sense of place could lead to more effective decisions. Our research explored the plurality of connections that residents made with wildlife in multiple protected areas across the USA region of Interior Alaska. Residents of nine communities were engaged over a five-year period, followed by a thematic analysis of interview data, which resulted in the identification of seven place meaning themes. These themes reflected qualities of the local environment that were appreciated by residents, including: 1) desirable travel destination, 2) distinct sense of community, 3) landscape of subsistence and tradition, 4) landscape of wildlife habitat, 5) natural resources in need of harvesting, 6) rural Alaskan lifestyle, and 7) wildland areas tied to recreation. Native wildlife species—from traditionally charismatic species like moose (*Alces alces*) to less iconic species such as snowshoe hare (*Lepus americanus*)—were discussed in the context of all seven place meaning themes. Wildlife provided a basis for study participants to interpret landscapes and ascribe meanings to places, thus supporting our argument that shared influences of wildlife and place meanings should be prioritized in environmental planning and management.

**Keywords** Place meanings · Protected areas · Wildlife · Social science · Alaska

## Introduction

Investment in the conservation of nature is often catalyzed by interests in safeguarding non-human species and the places needed to sustain them. Caring for animal life, in particular, has been a perennial rallying point for environmental stewardship (Larson et al. 2016; Bennett et al. 2018), thus strengthening agencies' abilities to protect wildlands and generate calls for conviviality and co-existence

(Falcone 2004; Frank et al. 2019; Clark 2021). There are multiple reasons why people build deep-seated relationships with nature, which can motivate support for conservation initiatives (Arias-Arévalo et al. 2017; Pascual et al. 2021; Hill et al. 2021), particularly due to encounters with and feelings towards wildlife (Teel et al. 2010; Jacobs et al. 2012). However, social science research has been under-represented in decisions that inform conventional approaches to wildlife management (Manfredo et al. 2019), despite the potential for these disciplines to reflect a wider array of social psychological perspectives and unveil mechanisms that can generate broad support for environmentalism in the public domain (Díaz et al. 2015; van Riper et al. 2017; Tengö et al. 2017).

Understanding how people connect with places is a focal point for research that aims to more equitably represent community members (Stewart et al. 2013; Williams 2014; Pascual et al. 2021) and navigate complex problems associated with managing wildlife and other natural resources (Curry 2003; Rajala et al. 2020). Although previous

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research has shown that engaging multiple interest groups in decision-making can support a process that is more widely accepted by community members (Dawson et al. 2021; Saif et al. 2022), the time required to identify, understand, and accommodate different perspectives is rarely afforded by funders of scientific research, thus hindering the development of long-term strategies that foster connections between people and natural resources (Lynam et al. 2007; Sterling et al. 2017). Further complicating the process of understanding place meanings is the limited scaling of qualitative research, in that few in-depth studies having been conducted at spatial scales large enough to facilitate landscape-scale conservation (Miller et al. 2020).

Thoughtful participatory engagement with the public is urgently needed, especially within landscapes that are vulnerable to change and important for generating benefits from wildlife management through hunting and other recreational opportunities (Organ et al. 2012; Wynveen et al. 2020; Chapagain and Poudyal 2020). However, the various meanings that local communities associate with landscapes and wildlife can also lead to tension and social conflict (Devine-Wright 2009; Sponarski et al. 2014; Vasile 2018), demanding nuanced, pluralistic approaches to environmental planning and management (Law et al. 2018). Studying place meanings and roles for wildlife within these meanings shows promise to illuminate the multiple and potentially competing goals vested in landscapes, such as wildlife conservation, tourism development, and visitor experiences (Smith et al. 2011; Kil et al. 2014; Hurst and Kreuter 2021). Previous research has consequently called for deeper understanding of the multiple layers in place meanings and different forms of place contestation stemming from change (Raymond et al. 2021; Leitschuh et al. 2022). Heeding this call, we engaged groups and individuals spread across a regional scale in discussions about how wildlife motivated action and fed into the relationships formed between people and places in the Denali region of Interior Alaska. The purpose of this research, therefore, was to explore the role of wildlife in the development of place meanings expressed by residents in an environmental management context.

## Place Meaning Scholarship

Place has been defined as not just physically tangible locations in space, but as a way of understanding the world (Agnew 2014; Cresswell 2014). Accordingly, scholarship has conventionally positioned places as symbolic environments, with meaning conferred to landscapes based on experience and a culturally grounded filter of values and beliefs (Tuan 1977; Greider and Garkovich 1994). People in different times and contexts vary in how they assign

meaning to shared spaces, with dominant and subaltern claims that reflect a continual process of place-making (Altman and Low 2012; Ingalls et al. 2019). Place meanings also evolve in relation to physical or temporal changes of the environment as well as socio-political changes in society (White et al. 2008; Masterson et al. 2017; Raymond et al. 2021). Simply measuring place attachment, without considering lived experiences that engage emotions and imagination, offers limited utility for environmental managers (Barkley and Kruger 2013; Brehm et al. 2013). Interpretive methods can offer this perspective by identifying and tracing meanings and changes over time (Satterfield 2001; McIntyre et al. 2008), simultaneously providing a platform for residents to participate in natural resource planning processes (Davenport and Anderson 2005; Stewart et al. 2013; Trimbach and Biedenweg 2021).

Recent scholarship has called for deeper understanding of meanings in the face of dynamic change and mobility, in contrast to traditional framing of place meaning as fixed and stable (Rishbeth and Powell 2013; Raymond et al. 2021). This research has argued that mobility shifts understanding of environments and the habitual ways that people relate to them (Di Masso et al. 2019). In his discussion on relational aspects of place, Cresswell (2014) attributed spatial and temporal dynamics of place to human environments that continually evolve in relation to one another, in ways that provide symbolic cues to distinguishable characteristics. Place meanings thus emerge from, and change with, temporal dynamics that combine subjective, social, spatial, technological, and political considerations (Raymond et al. 2021). Need for dynamic conceptualizations of place meaning is further supported by evidence that even ‘pristine’ environments have long been influenced by humans (Cronon 1996). Thus, dichotomizing places as ‘disturbed’ versus ‘pristine’ downplays how intimately human history is intertwined with the landscape (Drenthen 2018; Gammon 2018; Strauser et al. 2019).

## Relationships between Wildlife and Place Meanings

The relationships that people have with wildlife have been studied across a wide range of environmental topics (Teel et al. 2010; Jacobs et al. 2014; Manfredo et al. 2021). Much of this work has emphasized the central role of emotional stimulation such as feelings of comfort, authentic experiences, and happiness from activities like birdwatching and hunting (Larson et al. 2018; Folmer et al. 2019) in building relationships with wildlife. Other researchers have emphasized the role of wildlife stewardship that nurtures bonding (Stewart et al. 2013), promotes pro-environmental attitudes (Tarrant et al. 1997), and stimulates further meaning

development (Brock et al. 2017). Additionally, previous research has posited that the values and symbolism carried by wildlife inform the meanings assigned to environments (Greider and Garkovich 1994; Stokowski 2002). In this vein, place meanings have been positioned as reflections of broader ecological and cultural contexts, where wildlife is valued not just for its own sake (Folmer et al. 2016) but as part of a multifaceted regional character (Wondrak 2002; Willox et al. 2012).

Previous research has provided insight into how residents' experiences are influenced by wildlife around protected areas. For example, choice of home location in a study in Arizona was directly influenced by proximity to protected areas due to opportunities to interact with wildlife (Harris et al. 1997; Stein 2004). Research that examined visitors' place meanings within the context of a national scenic trail also found that visitors with the strongest connection to the protected area preferred places characterized by undisturbed wildlife habitat, because they facilitated escaping to, learning about, and exploring nature and the wild animals living there (Kil et al. 2012). These findings were corroborated by other studies that suggested place meanings associated with the protection of nature and wildlife habitat functioned as persuasive visions for natural resource management (Gunderson and Watson 2007; Davenport et al. 2010; van Riper et al. 2016). Even as protected areas are expected to fulfill increasingly diverse environmental, social, and economic objectives, preserving iconic landscapes and wildlife habitat remains meaningful to a broad swath of the public (Watson et al. 2014).

Wildlife play important roles in understanding human perceptions and aspirations for change in Alaska. For many people, wildlife provide initial indicators of landscape change and are used as landmarks to understand their environments (Clergeau et al. 2001; Richardson et al. 2022). Native species have been proposed as viable contributors to a region's sense of place and overall identity when those species hold strong roles in the local environment, are endeared to residents through social and historical processes, and can be easily experienced by outsiders (Kyle and Chick 2007; Forristal et al. 2014). With local wildlife both fueling tourism in the region and being integrated into residents' daily lives, Alaska is a vibrant context for studying the relationship between wildlife and place meanings. Alaska offers opportunities to extend previous research that has predominantly focused on informing tourism and recreation management decisions (Amsden et al. 2010; Stamberger et al. 2018) by engaging residents who live around protected areas (Andrade et al. 2023). Indeed, previous research has indicated that the integrity of wildlands is interpreted in different ways by visitors and residents (Davenport et al. 2010; Bortolamiol et al. 2018).

Therefore, the interplay between wildlife that are protected across Alaska's landscapes and the meanings of those places expressed by residents would generate new insights on how best to inform environmental management decisions in ways that reflect diverse viewpoints. In response to these gaps in previous research, we were guided by two objectives to: 1) identify the meanings of places with roles for wildlife, as expressed by residents; and 2) examine how wildlife are reflected in place meanings.

## Methods

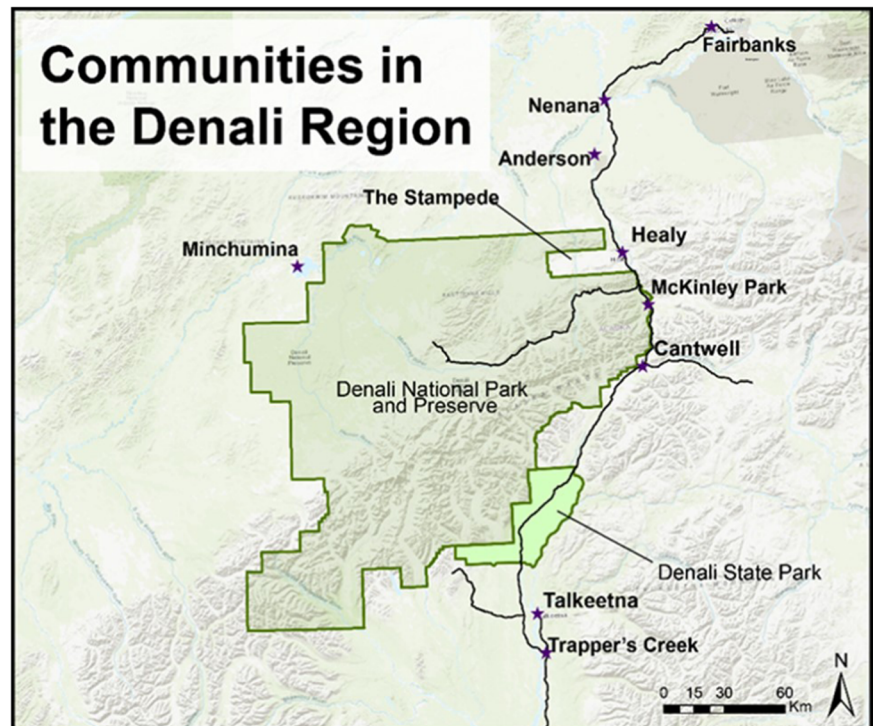
### Researcher Positionality

Our research methods and process were shaped by our respective orientations as environmental social scientists. The lead author, in particular, was trained in zoology and the human dimensions of natural resources, which motivated his research questions about how communities interfaced with their environments. More equitable policy outcomes from this research were pursued given this author's identification with a group that is historically underrepresented in protected area visitation. Focusing on human-wildlife interactions was also central, given the salience of wildlife management in the Denali region (e.g., Skibins et al. 2012) and the extent to which local residents either depend on wildlife for their livelihoods or as part of their identities as individuals or in groups (Johnson et al. 2022). The process of uncovering connections between Denali wildlife and residents' sense of place was thus led by the lead author's background, personal interests, and commitment to conducting applied environmental social science research that engages concerns for building inclusive policies. For the entirety of authors, as researchers from a university founded through the Morrill Land-Grant Act of 1862, we acknowledge that we have benefited from the theft of land and often violent removal of its Indigenous inhabitants. The focus on place-meanings aligns with indigenous peoples and their cultures that are inextricably tied to place and ancestral lands. The motivation behind this paper is connected to elevating the visibility of local and indigenous ecology knowledge. To mitigate any harm our research may cause these native communities, we follow Kirkness and Barnhardt (1991) with the intention that our research be respectful, relevant, reciprocal, and responsible to the Alaska Natives communities and cultures in our study area.

### Study Context

The Denali region is characterized by an extensive network of subarctic ecosystems that include diverse wildlife such as

**Fig. 1** Map of the Denali region including protected areas and key communities engaged in this research (published with permission from Johnson et al. (2022))



Dall sheep (*Ovis dalli*), willow ptarmigan (*Lagopus lagopus*), caribou (*Rangifer tarandus*), moose (*Alces alces*), wood frogs (*Lithobates sylvaticus*), grizzly bears (*Ursus arctos horribilis*), and wolves (*Canis lupus*), as well as the eponymous Denali (formerly Mt. McKinley). Subsistence use – defined as a set of holistic practices around use of landscape resources that serve to strengthen culture, provide livelihoods, and reinforce social structures (Nadasdy 2003) – is still practiced by numerous families and communities throughout the Denali region and Alaska at-large (Wolfe 2004; NPS 2021); these practices are purported to encourage stewardship of wild resources, respect for all living things, robust familial and communal bonds, and necessarily strong ties between people and the land on which they live (Berkes 2009). The prominence of wildlife in the Denali region made it ideally suited to understand how the multiple, layered meanings of places interfaced with different organisms spread across a regional scale (Brown et al. 2015). Prior to the global COVID-19 pandemic, the Denali region was estimated to host more than 600,000 visitors on a yearly basis. In contrast, the permanent human population of the Denali Borough is 1593 residents as of 2021 (U.S. Census Bureau 2021), most of whom (80%) are of White settler descent.

### Sampling Procedures

Our research was conducted with nine communities situated near Denali National Park and Preserve and Denali State

Park: Anderson, Cantwell, Healy, Lake Minchumina, McKinley Park, Nenana, the Stampede, Talkeetna, and Trapper Creek (see Fig. 1 and Appendix A). We engaged these communities over a five-year period from 2018–2023 wherein our research team traveled to this region of Alaska – referred to hereafter as the Denali region – and met with partners in the National Park Service (NPS) as well as key individuals from regional groups such as the local government and tourism businesses. Through these informal interactions and on-site experiences that took place during the first year of the project, as well as previous research in the region (e.g., van Riper et al., 2019), we identified communities for potential inclusion in this study due to their vested interests in the long-term management of the national and state park. Residents of these communities rely on the successful management of protected areas to attract tourists and provide opportunities for employment directly through the parks or indirectly through contracts for park services.

The initial individuals invited to participate in this study were identified in consultation with NPS partners living and working in the Denali region, as well as a local resident that was hired to help us understand the local context, represent our team in public meetings, and assist with data collection. From these discussions, we learned that residents aligned with one more of the five key interest groups that we strived to represent throughout our research process (see Table 1). We sought additional input from a local advisory board consisting of ten volunteers from the Denali region. Each volunteer held a leadership position in

**Table 1** Definitions of the Resident Interest Groups in the Denali Region

Resident Interest Group	Definition
Education (ED)	A school district or educational organization.
Environmental Management (EM)	Public natural resource management agency or private conservation organization.
Local Business (LB)	A commercial enterprise that provides goods, services, or utilities.
Regional Governance (RG)	A formal administrative body or public interest group.
Subsistence Use (SU)	Customary or traditional use of wild resources in the context of rural Alaska.

one of our five identified regional interest groups and was willing to provide feedback on our research and help us to engage a diverse group of permanent residents who were interested in protected area management in the Denali region. This study was reviewed and approved by the [name removed for blind peer-review] Institutional Review Board (approval #18679).

We adopted a multi-phase process for engaging residents in this research from 2018–2021. All previously identified participants were initially contacted by phone, email or in person and engaged in an informal conversation about the study. If willing, semi-structured interviews (Creswell and Creswell 2017) were then scheduled. Interviews occurred at participants' homes, public locales (e.g., libraries, schools) convenient for the individual, or over the Zoom video-conferencing platform. Most data were collected during five in-person visits to the Denali region – with each visit lasting one week or longer – prior to January 2020. The onset of the COVID-19 pandemic and ensuing travel restrictions necessitated that our remaining data be collected via Zoom. Before being interviewed, participants were provided with an interview guide (Appendix B) and consent form that authorized the recording of the interview for research purposes. Interviews ranged from one to two hours, with an average duration of one hour and eight minutes. After each interview, we employed a “snowball” sampling whereby we asked participants to nominate other people who met our study's eligibility criteria (Morgan 2008) – especially people who did not think like themselves – until we reached a point of saturation (Creswell and Creswell 2017). All recorded interviews were subsequently transcribed verbatim and qualitatively coded.

## Data Analysis

We adopted grounded theory analysis techniques to analyze our interview data, given that the utility of grounded theory for synthesizing place meanings has been widely documented (e.g., Gunderson and Watson 2007; Poe et al. 2016; Trimbach and Biedenweg 2021). Consistent with the process espoused by Glaser and Strauss (1967), we synthesized qualitative data to generate place meaning themes in which identifiable roles for wildlife existed, reflecting participants'

views of the landscape alongside our experience being immersed in the study context (Anfara et al. 2002). Our analysis did not aim to create an exhaustive list of every place meaning bound within the region, but rather to direct attention to the role of wildlife in developing place meanings for the Denali region. All analysis was performed using ATLAS.ti version 8.4.23 software.

Our data were analyzed through open coding of individual interviews using short, analytic labels (Charmaz and Bryant 2008). Succinct descriptive codes were assigned to words, phrases, or portions of each interview transcript to identify discrete incidences and feelings communicated by residents. For example, individual codes could identify specific wildlife (e.g., “moose”), actions (e.g., “hunting”), contexts (e.g., “subsistence lifestyle”), and interpretations (e.g., “family tradition”). We also established interrater reliability during this process, using percentage agreement among researchers comparing assigned codes. Two researchers initially coded the same interview transcript independently, and subsequently reviewed the transcript together to share and discuss the codes they had assigned. If researchers agreed that a code was appropriate based on narrative context, it was treated as an instance of agreement. The percentage agreement for each transcript was tallied by dividing instances of agreement by the total number of codes (including instances where researchers disagreed). This process was repeated across six different transcripts, for a final percentage agreement of 92.4%.

After open coding all interview transcripts, we performed axial coding to organize and connect codes based on their context within and contribution to narratives relayed by interviewees, merging closely related codes to create more broadly-encompassing categories (Strauss and Corbin 1990). For example, multiple codes that individually captured specific physical changes to urban communities were merged to create an “urban development” category. Finally, we performed selective coding to connect categories synthesized through our axial coding process around cohesive and meaningful themes (Flick 2009) which reflected place meanings of the Denali region. For example, categories such as “local wildlife,” “natural landscapes,” “Denali aesthetics,” and “pristine wilderness” were connected by a unifying theme that Denali is characterized by a natural and

**Table 2** Place Meaning Themes and their Definitions Derived from Associated and Recurrent Codes

Place Meaning	Definitions
Desirable travel destination	Denali as a place where tourism brings major social and economic growth and development.
Distinct sense of community	Denali as a place with strong social cohesion and bonds among diverse groups of people.
Landscape of subsistence and tradition	Denali as a place where harvest and use of wildlife and native plants has been a customary part of family and ancestral community among both Native Alaskans and Alaskan settlers.
Landscape of wildlife habitat	Denali as a place characterized by a natural and wildlife-rich landscape that cannot be reproduced anywhere else.
Natural resources in need of harvesting	Denali as a place that can support the socio-economic well-being of residents through resource use and consumption.
Rural Alaskan lifestyle	Denali as a place characterized by autonomy, commitment to one's self and family, and reliance on local resources.
Wildland areas tied to recreation	Denali as a place for bringing excitement, relaxation, and meaning to life through outdoor activities in natural environments.

wildlife-rich landscape that cannot be reproduced anywhere else, reflecting the place meaning labeled *landscape of wildlife habitat*.

## Results

### Participant Characteristics

Our final sample included 42 residents (Appendix C). Protected areas in the Denali region are hotspots of state and federal environmental management activity and generate significant revenue owing to tourism and other regional business ventures. As such, our study participants were primarily affiliated with Local Business (38%) or Environmental Management (31%) interest groups. Over half of our participants were male (57%) and had formal education equivalent to a bachelor's degree (67%). Nearly all participants (93%) resided in the Denali region year-round, with most living in the region for either 10–19 years (21%) or more than 50 years (29%).

### Place Meanings

Seven broadly recurring and interconnected place meaning themes of the Denali landscape were developed. These place meaning themes were labeled as *desirable travel destination*; *distinct sense of community*; *landscape of subsistence and tradition*; *landscape of wildlife habitat*; *natural resources in need of harvesting*; *rural Alaskan lifestyle*; and *wildland areas tied to recreation* (see Table 2). Native wildlife species of the Denali region were discussed in the context of all seven themes that emerged from our analysis. The species most frequently discussed by residents was moose (*Alces alces*), and the other predominant species highlighted were grizzly bears (*Ursus arctos horribilis*), beavers (*Castor canadensis*), caribou (*Rangifer tarandus*),

ptarmigan (*Lagopus lagopus*), snowshoe hares (*Lepus americanus*), spruce grouse (*Canachites canadensis*), sockeye salmon (*Oncorhynchus nerka*), Dall sheep (*Ovis dalli*), and grey wolves (*Canis lupus*).

### Landscape of Wildlife Habitat

The place meaning *landscape of wildlife habitat* was formed in response to the convictions of participants that Denali was special due to its vastness of undeveloped natural landscape that functioned as habitat for a diversity of wildlife. Many participants felt obligated to preserve the setting for reasons related to its intrinsic worth, with narratives commonly touching on appreciation of Denali's unique aesthetics – such as the northern lights or midnight sun – preservation of special places like Polychrome Pass or Wonder Lake, and the abundance of charismatic wildlife. According to one environmental manager, “*folks in Alaska all share the same goals, even if they don't think that they do...we want healthy wildlife populations for tourism and subsistence and even for non-subsistence hunting purposes*” [Participant 6, EM]. For several participants, witnessing so many different types of wildlife was a sign of a healthy landscape, yet concerns were raised about these organisms being threatened from expansion of human communities. According to one such participant, “*I'd point out to people coming here all the time, when they say, 'It's too bad I can't drive my car out there', I always point out that the fact that you can't drive your car out there means you will more than likely see wildlife*” [Participant 13, EM]. This quote illustrated a regional willingness to forgo some developments and conveniences for the sake of retaining wildlife habitat and species abundance.

*Landscape of wildlife habitat* emerged from accounts shared by participants across all regional interest groups, not just environmental managers. For example, an education-affiliated participant indicated that they liked to

take visitors somewhere special, “*I wouldn’t take ‘em downtown...you can’t know what Alaska is unless you get out...[where] there’s animals like moose, occasional bear...little critters like ermine, weasel, lots of birds*” [Participant 3, ED]. Likewise, local business owners expressed that, “*inside that park there’s just special things that you can’t see anyplace [sic] outside of it*” [Participant 22, LB], as well as hoped that the actions of current residents would help keep the Denali region’s wildlife intact: “*setting up the next generation of people...to have access to all those same things that drove me here which is healthy wilderness areas and wild places...Not just kind of a Disneyland fake wild place, but a real wild place that has all that intrinsic value*” [Participant 19, LB]. Altogether, such quotes demonstrated Denali’s position as a landscape of wildlife habitat in the eyes of many of the region’s residents.

### Desirable Travel Destination

The place meaning of a *desirable travel destination* reflected participants’ perception of the Denali region as a high profile and desirable travel destination, and concerns about impacts of tourism on local Alaskan identity and lifestyles. Within the context of this theme, participants discussed tourism-driven urban development, impacts of tourism on the local environment, and preserving place character in the face of tourism. The portrayal of Alaska as a desirable and romantic destination for tourism brought benefits to the region but also disrupted the ideals of Alaska as a home place. The sheer number of people who visit impacted local lifestyles: “*This little town, we’re overrun now...unfortunately, as you get more people, then more businesses want to come in and it just perpetuates itself. So, you’re never really caught up*” [Participant 7, EM]. This quote reflected residents’ concerns over how growth in tourism negatively impacted the region. The few optimistic participants highlighted the benefits that communities reaped from tourism dollars: “*Tourism itself, when applied properly...really helps with preservation and conservation as well. Because everyone is dependent on the environment*” [Participant 18, LB]. Other participants were more cautious and emphasized the need for moderation in bringing in more tourists: “*Trying to get that thought of ‘the theater is full’ across to people that are trying to go out on the park road is more challenging... you could physically fit more buses on the road, but at some point...when the wildlife is present the buses are going to be blocking each other’s view*” [Participant 6, EM].

Although anxiety from increases in tourism were shared by some participants, there were also concerns specifically focused on wildlife as the basis of place meanings that drew interest among tourists. Indeed, the abundance of wildlife in

the Denali region was a sizeable tourism draw that fueled many local livelihoods: “*Tourists come here to see wildlife, to see the mountain. And so it’s incredibly important to offer them...untouched land...promoting those experiences we can offer the visitors to be able to get out in the wild*” [Participant 26, LB]. Beyond the allure of Denali’s wildlife, participants also noted how the natural landscapes offered first-hand opportunities to encounter and better understand wildlife. For example, “*[Wolves] are a cool animal, but they don’t deserve to be worshiped...most of the people that love wolves...have no concept what a wolf is*” [Participant 21, LB]. Another participant explained, “*The people on the tour buses able to see wolves, something they also see is wolves killing moose...the value I see in this is people really get a chance to see what nature is about, from the comfort of a bus. And how many people are gonna walk out there and see that?*” [Participant 41, SU]. These quotes underscored the desirable qualities associated with the Denali region through the presence of wildlife.

### Distinct Sense of Community

The place meaning of a *distinct sense of community* arose from participants’ expressions of everyday life as part of a unique and vibrant communal setting. Participants expressed deep-seated appreciation for their local places and shared interests in the future of these environments that were rooted in daily interactions with neighbors and organizations; maintaining the integrity of local character and traditions, as well as ensuring a bright future for their community were top priorities. This place meaning was tied to the temporal dynamics of the region, particularly urban development and technological advancements that diminished or recontextualized the need for neighbors to rely on one another. Some such developments were welcomed, such as the community of Healy opening its first large grocery store, whereupon “*We didn’t have to drive to Fairbanks anymore to go shopping...just so awesome, total game changer*” [Participant 17, LB]. Although participants expressed trepidation and anxiety for the future in the face of change, they simultaneously expressed conviction that the communities were exceptional places to live: “*The friends that I made [when I came here] are still my friends now... we still rely upon each other...whether it’s impending wildfires or...people’s house burned down... people will pull together,*” and despite ongoing changes, “*The reason I moved up here, for the strong sense of community, that is still here. And therefore, I am still here. I would say that, around us, is visually less appealing, and harder to get down main street on a busy day. But the reason I moved here is still here*” [Participant 12, EM].

*Distinct sense of community* was heavily influenced by the presence of wildlife in and around Denali’s human

settlements. Recreational activities that interfaced with local wildlife – from actively hunting to passively watching – were universally pursued by people living in the region, gratifying due to their uniqueness, and commonly shared among residents. These experiences forged widespread consideration for the wellbeing of wildlife: One such resident described how they “*don’t like bothering animals. I don’t even like when I’m out on my walk making the hares run away. I just want to move on by and not stress them*” [Participant 10, EM]. Several participants indicated that personal experiences seeing wildlife in and around their homesteads solidified their sense of the Denali region as a special place, such as an introductory experience with migrating caribou herds:

*“We were at the cabin on Butte Creek...The caribou migrated through the yard right next door to the cabin...from the time the lead animal started through until the stragglers came through, was three days and three nights of animals...I stood outside for three days. I could’ve done this and literally touched thousands of animals. And I still get goose bumps when I think about that today. Three days and three nights...it was awesome...Their knees click when they walk...you go to sleep to the clicking of caribou knees (laugh)”* [Participant 20, LB].

For this participant, their experience with caribou was something that they came to rely on to distinguish their community from others.

### Landscape of Subsistence and Tradition

*Landscape of subsistence and tradition* was focused on the lifestyle and socio-cultural context surrounding the acts of hunting, fishing, and gathering in Alaska. Wildlife and fishery resources were at the heart of this place meaning theme. Native Alaskans’ and Alaskan settlers’ discussions of engaging connections to the past and responsibilities to maintain generational customs were also central to characterizing this theme.

The role of subsistence use – and the species fueling it – in both livelihood and identity was an intense talking point for Native Alaskan residents of the Denali region. When asked how they might show visitors what Denali means to them, one participant simply stated, “*Take them moose hunting*” [Participant 40, SU]. Subsistence hunting and fishing were a vital means for Native Alaskans – for whom the Denali region is also an ancestral homeland – to preserve family pastimes and traditions: “*[My father]’s got more intimate knowledge...He spent an incredible amount of time with his grandmother...and she imparted a lot of knowledge into him through stories. I think they’re still*

*phenomenal*” [Participant 40, SU]. The deep respect and loyalty that Native Alaskans held for their forebearers was made apparent when one participant explained how, “*[My dad’s] stories, of like hunting up Windy Creek... I’ve always loved going up there in the winter...his stories are amazing...I want to just experience everything that he’s experienced*” [Participant 5, EM], and how, “*Doing what my grandmas or even what my dad did as a kid, but what my grandmas grew up doing, and then teaching me...my first loyalty is always to my tribe...because that is my culture. That is my tradition*” [Participant 39, SU]. For Native Alaskans, subsistence use was a tradition tied to ancestral customs and spiritual connections, and although hunting and gathering characterize their process, the experience was one of a sacred journey of generations in place.

While subsistence use was pervasive throughout narratives shared by our participants of Native Alaskan heritage, Alaskan settlers also discussed subsistence as an important aspect of their personal identities and histories. One participant commented that gathering from the landscape and passing their skills and lessons down to the next generation was an experience shared by people of all cultures that had chosen to call Alaska home: “*Every Alaskan at one time or another was a moose hunter. Any real Alaskan was a moose hunter*” [Participant 10, EM]. Another settler described how salmon fishing was both a practical source of sustenance and a way by which his family defined themselves as Alaskans: “*A big part of [my family’s] life is to eat salmon. It’s one of the largest forms of protein our family intakes.*” [Participant 19, LB]. Altogether, these quotes illustrated concern from both Native Alaskans and Alaskan settlers with maintaining the integrity of traditions that have defined the Denali region for generations, particularly when considering wildlife in the landscape.

### Natural Resources in Need of Harvesting

The place meaning *natural resources in need of harvesting* reflected the Denali region as a place to earn a living wage or sustain a livelihood by profiting from the region’s natural resources. Participants highlighted the importance of the region for accruing monetary capital, having jobs and work opportunities, and being able to put food on the table. According to one participant, the practical function of the landscape was an inescapable caveat to their personal appreciation for pristine wildlands and cultural heritage: “*That’s the trouble with life...money...you can’t get by on subsistence anymore. So, you got to have money. To have something to trade...You can’t be doing it for free*” [Participant 38, SU]. Another participant expressed appreciation for Alaska’s resource-rich environment: “*The resources that are available in this state...can keep us going for a long, long time...There’s lots of good resources up here we*



haven't even begun to touch" [Participant 21, LB]. Even as participants discussed the state's wealth of resources, they were conscious of their dependence on the perception of Denali as a pristine wild space. Harvesting the region's resources to their fullest extent had to be weighed carefully against maintaining the extant reputation for harboring wildlife. One participant pointed to Denali's desirability for travel (and incoming tourism dollars) as a practical reason to harvest the region's resources with care: "[Visitors] are not coming to eat at my restaurant or stay in my hotel... they're coming to see animals and Mt McKinley and experience the vast wilderness of the Park" [Participant 17, LB].

Relationships with wildlife influenced this place meaning insofar as nearly all participants either actively harvested wildlife (through activities such as hunting or fishing) or passively supported these practices. Simultaneously, our participants were quick to clarify respect for the animals they harvested: "[I] love the hunt, love the chase...[I] hate the kill. Absolutely hate the kill" [Participant 33, RG]. One participant relayed a personal story that illustrated their deep-seated respect and emotional connection with wildlife. After hunting a moose for the first time, they recounted "I came up on him, and we did the whole eye contact thing, and of course I started bawling, because...I still had this respect for this animal" [Participant 34, RG]. Few participants expressed conflict between respecting animals and harvesting them, and most posed such attitudes as urbanite ignorance: "Concrete jungle people don't understand why we do hunting. And why we trap and things like that" [Participant 35, RG]. This participant further clarified that "I don't believe in going out there and 'getting all the buffalo'... because then you lose majestic creatures... when the season is right, that's when it's time to hunt, that's when it's time to trap. [Otherwise], you leave them alone, they leave you alone. That's a beautiful thing to see how nature works and if you work with it, it all works out." [Participant 35, RG]. For Denali residents, harvesting resources – like wildlife – was something done in cooperation with state and federal policies, and with one's own conscious of what was ethical. Both one's own integrity as well as responsibilities to the laws of the land came to the surface and were embedded in the meaning of the harvest.

### Rural Alaskan Lifestyle

The place meaning *rural Alaskan lifestyle* arose from the emphasis placed on engagement with a remote landscape and harsh conditions. Participants learned valuable skills from one another to thrive in this context and appreciated the absence of outside authorities. Life in the Denali region was frequently lauded for the freedom of a lifestyle that was so far removed from centers of government: "[Denali] is a

very much just kind of like, down home, good, kinda wholesome place...free from a lot of the unnecessary burdens of large government, taxation, regulation, all those kinds of things where you can pretty much be who you want to be. Raise your family the way you want. And just kind of, basically live free." [Participant 18, LB]. In several cases, rural Alaska's remoteness was viewed as a charming characteristic and opportunity: "I certainly understand why people would say it's a tough place to live, [but] I think those same things that would lead people to think that it's a difficult place to live are the things that I enjoy...I embrace that challenge...that's part of why I came here." [Participant 19, LB]. Another participant espoused that, "If you truly live here and love this state, you gotta love the hardships that come with it. The hard stuff's as good as the good stuff...embrace the struggle." [Participant 22, LB].

Navigating frequent wildlife interactions contributed to the sometimes-harsh nature of the Alaskan landscape, according to multiple participants. One of our participants described how "I've had a few bear encounters that have given me pause...I never actually had physical contact with bears, but...it's been close enough where I think I don't really want to be out [in the backcountry] alone." [Participant 11, EM]. However, most participants – especially those who spent time in the Alaskan bush for their livelihood – took these challenges in stride, viewing them as avenues for personal development and growth: "Part of being somewhat successful in this area, and just having that sort of learning skill... [has more to do with] dealing and spending more time with animals, um, than it does with people." [Participant 23, LB]. For example, several participants had gone through the experience of building their own homestead in the Denali region. This experience was described with great pride and as a feeling that gave satisfaction: "[It's] definitely an experience I don't think I could've ever got living in the lower 48...just because I had to learn so much of it on my own." [Participant 13, EM]. This place meaning theme showcased how wildlife contributed to developing residents' conceptions of a rural Alaskan lifestyle.

### Wildland Areas Tied to Recreation

The *wildland areas tied to recreation* place meaning was borne from participants' perceptions of Denali as a place that afforded leisure pursuits. Narrative contributions to *wildland areas tied to recreation* highlighted the accessibility of land and wilderness, being outdoors, and staying active. In many cases, the innate qualities of the region – such as miles of undeveloped land, or ideal weather patterns – meshed with participants' ideas of enjoyable downtime. One participant explained that they liked living around Denali because "I'm a winter person...longer winters are

*better for me... it means that there's snow but it stays longer, its drier, so it's better for recreation conditions that I like to participate in, and...some of the conditions I need to be outside.*" [Participant 4, EM]. Easy access to natural areas for recreation – and the wildlife hosted within and around it – was also a chief reason why participants believed that Denali was a place where they might entertain themselves. One participant extolled how, due to the proximity of the park's trail system, *"we can go out...and be out there for as long as we want...there's not a lot of people [in the lower 48] who have access to wilderness like that. Like, it's primo access to wilderness."* [Participant 1, ED]. Another participant who hunted in their spare time pointed out the vested interest of hunters in the region's wildlands and wildlife: *"That park was brought to you by sheep hunters, and hunters are the original conservationists...if we're not conservationists, we don't have a sport!"* [Participant 22, LB]. Therefore Denali was a place where wilderness was closely intertwined with recreational opportunities.

## Discussion

This article highlighted seven interrelated place meanings that were derived from interactions between local communities and a protected area landscape undergoing significant environmental changes, as well as the instrumental role of wildlife in the development of those meanings. We inductively identified a range of place meanings and learned about perceptions of wildlife at a regional scale in the U.S. state of Alaska. This process responded to calls for landscape-scale qualitative research in environmental management, and directly connected the study of place with wildlife management literatures (Rust et al. 2017; Miller et al. 2020). By highlighting a wide range of resident perspectives on wildlife management, our research process generated findings that unveiled why connections were formed with places, and laid groundwork for achieving more equitable community representation in decision-making (Pascual et al. 2021; Hill et al. 2021; Raymond et al. 2022).

Wildlife in Alaska symbolized a lifestyle for residents that relied on vast expanses of public lands and wildlife-related recreational activities (e.g., hunting, wildlife watch, dog mushing) to experience these resources. As such, wildlife were inextricably tied to all seven interconnected place meanings. Although the themes identified in this study were not exhaustive of all meanings bound to the region – being directed at those place meanings with roles for wildlife – the multiple layers of meanings and their overlap extended previous research that has called for a greater focus on place scholarship to understand how

decision-makers can navigate the forces of stability and change (Di Masso et al. 2019; Raymond et al. 2021). This dynamic understanding of place meaning will be especially crucial for management of wildlands in Alaska where rapidly changing climates beget impacts such as permafrost reduction, biological invasions, and increasing incidence in forest fires (Jorgenson et al. 2001; Johnstone et al. 2010; Johnson et al. 2022). In other words, wildlife emerged as a salient and embedded issue that was woven into residents' place meanings and their visions for change in the region. Thus, future alterations to wildlife habitat will likely disrupt residents' existing connections with the land, something which has considerable implications for environmental management. Investing in community communication strategies – both to share research progress, and to receive communities' feedback on changes felt – will enable managers to stay abreast of evolving expectations around subsistence use, community identity, and the Alaskan lifestyle, which depend on local wildlife (Morehouse et al. 2020; Hughes et al. 2022).

Multiple species were highlighted by participants in discussing reasons why the Denali region was important. Iconic regional megafauna – moose, caribou, wolves, Dall sheep, and grizzly bears (Skibins et al. 2012) – retained prominent roles within residential narratives, possibly due to the influence of tourism branding in the region. The utility of some organisms was also a driving force in shaping participants' interpretations of the reasons why they were connected to landscapes. The prominence of moose, caribou, and salmon within residents' place meanings, for example, may have been influenced by these species' status as a staple meat procured from subsistence hunting and fishing (Wolfe 2004; Ballew et al. 2006). However, numerous species beyond those that were iconic or immediately useful – such as beavers, ptarmigan, snowshoe hares, and spruce grouse – were also highlighted, serving as key aspects or symbols of places and experiences in the minds of residents (Greider and Garkovich 1994; Jacobs et al. 2012). Connections to these less widely known species may be attributable to residents' active involvement with the environment (Brock et al. 2017) in addition to intrinsic values that they may associate with a range of wildlife species (Fulton et al. 1996). These results highlight the multiple ways and contexts through which people form relationships with nature: The resulting layers of place meanings merit consideration in environmental management. We suggest that tools such as discussion forums and interdisciplinary workshops (e.g., Rutherford et al. 2009; Andrade et al. 2023) can assist managerial understanding of local contexts, and perpetuate strategies which will resonate with community concerns.

Place contestation was observed in this study in the form of widespread ambivalence towards increasing tourism and

resulting community concerns. Although participants acknowledged and appreciated how tourism dollars contributed to their local quality of life, they were nevertheless troubled by changes in their communities that some interpreted as pandering to non-locals and threatening the special qualities of the Denali region. Fixation on changes thought to be spurred by external interests – such as infrastructure primarily put in place for visitor use, or increased visitor access to the park at locals' expense – showcased concern for residents' place meanings being neglected or deprioritized (Altman and Low 2012; Ingalls et al. 2019). These findings further underscore the importance of considering the disconnect between meanings expressed by managers versus residents (Smith et al. 2011; van Riper et al. 2016) and which voices hold prominent roles in negotiating future wildlife management and development priorities (Manfredo et al. 2017). Furthermore, renegotiation of place meanings through discourse and practice, and place-protective actions rooted in disruption of existing connections to places (Devine-Wright 2009; Masterson et al. 2017; Raymond et al. 2021) merit attention by environmental managers. While desirability of protected areas can be leveraged to attract interest and outside wealth to communities, we recommend that environmental managers simultaneously engage current residents as part of these strategies, and position themselves as sounding boards to identify and respond to concerns about changes to qualities on which communities are built (Davenport and Anderson 2005; Patriquin and Halpenny 2017; Hurst and Kreuter 2021).

Our results demonstrated a clear and conspicuous place for subsistence practices in the identities and livelihoods of both Native Alaskans and Alaskan settlers throughout the Denali region, even as reactions to issues of subsistence culture versus usage varied across individuals, groups of people, and government agencies. The exploratory process for conducting this research unveiled a common experience and interest among Native Alaskans and Alaskan settlers concerning the role of wildlife and familial traditions in place-making. However, this observation did not diminish the need for sensitivity toward nuanced but critical distinctions between Native Alaskans and Alaskan settlers concerning the nature of their tradition, the longevity of generations in-place, and social power across their distinct histories (Haycox 2002). Results from this paper therefore aim to underscore the importance of considering consumption and use of wildlife in place meanings research, especially in contexts such as Alaska where subsistence remains part of everyday life (Wolfe 2004; NPS 2021).

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## Compliance with Ethical Standards

**Conflict of Interest** The authors declare no competing interests.

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