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# Agency, Sense of Place, and Knowledge on the Zumwalt Prairie: A Social Study of Place-Based Conservation and Resilience

Dana Elyse Hellman
*Portland State University*

# Agency, Sense of Place, and Knowledge on the Zumwalt Prairie:

## A Social Study of Place-Based Conservation and Resilience

by

Dana Elyse Hellman

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Dissertation Committee:
Vivek Shandas, Chair
Melissa Haeffner
Hunter Shobe
Ryan Haugo
Jennifer Allen

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## Abstract

Shifting and often diminishing environmental conditions, due to climate change, resource loss, and ecosystem degradation, pose a significant concern to both social and ecological systems. The field of conservation science has attempted to address environmental threats through varying approaches, transitioning from fortress conservation and complete human exclusion to community-based and co-managed models which incorporate human actors and social dimensions in the conservation process. The latest iteration of conservation scholarship, place-based conservation, is deeply rooted in interdisciplinary, social scientific thinking, and calls for significant practitioner engagement with local knowledge, practices, social constructions, and place meanings. It is an approach which emphasizes situated socio-ecological conditions and capacities. Though place-based conservation holds great promise for inclusive, socially conscious, and ecologically effective practice, the field remains largely theoretical, and its effects have not been well studied through empirical research. This dissertation makes two notable contributions to the field of place-based conservation. Firstly, a novel boundary object framework is presented which can serve to guide research, and facilitate cross-disciplinary discussions among conservation scientists, bridging the gap between place-based theory and practice. Secondly, a conservation site, the Zumwalt Prairie and Preserve, is studied from three distinct angles: agency, sense of place, and knowledge. These studies elucidate key social dynamics influencing conservation behavior around the site and add empirical evidence to the field.

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# CHAPTER 1 Introduction

Our natural environment is changing, with significant implications for both ecological and social systems. Rampant environmental degradation – from climate change, land use change, mismanagement, overconsumption, and neglect – threatens human well-being, as well as non-human species, ecosystems, and natural resources. Actors across disciplines attempt to meet this challenge in a variety of ways: strategic and adaptive planning (Dai et al., 2018), market (dis)incentives (Carter, 2009), legal interventions (Bahadur et al., 2011), and citizen science (McKinley et al., 2017), to name a few. A common prescription, particularly in response to land and resource degradation, is *nature conservation*; that is, implementation of actions meant to protect, maintain, or restore natural resources and environments, typically allowing for sustainable use (Sandbrook, 2015). The practice of nature conservation may incorporate any of the interdisciplinary interventions listed above but is positioned squarely within the field of environmental science.

As a field of inquiry and practice, nature conservation has been dominated by designated experts in the natural sciences (e.g., ecologists, biologists) (Dayton, 2003; Luke, 1999; Van Dyke, 2010). Undoubtedly, issues of environmental degradation, management, and repair are within the intellectual purview of these specialists. On the other hand, these issues cannot reasonably be severed from the social conditions which produce and are produced by them (Bennett et al., 2017). Human and environmental problems are inextricably linked, operating under dual feedbacks in socio-ecological systems (SES) (Berkes & Folke, 1998; Berkes et al., 2003; Ostrom, 2009; Walker & Salt, 2006), and this

complexity should not be ignored (Figure 1). The notion of SES appears frequently in scientific discourse, both natural and social. However, environmental degradation is most often conceptualized by natural scientists alone, without an equal degree of social investigation (see *Users* and *Governance systems* in Figure 1) to match the ecological (Fox et al., 2006; Sinclair et al., 2017).

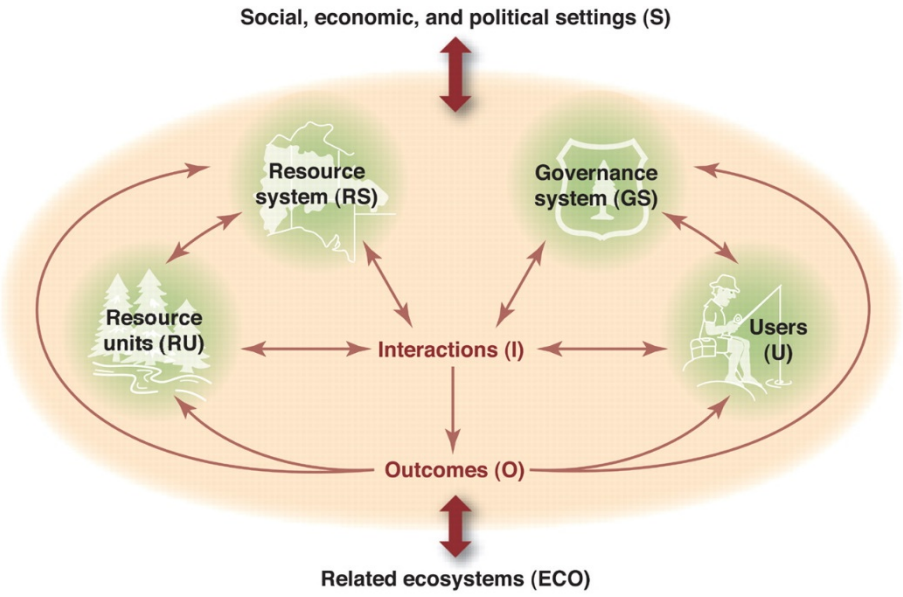


Figure 1. SES diagram from Ostrom 2009. Research in this dissertation highlights the social half of the diagram (right), with particular emphasis on Users.

**Exploring the social side of conservation: Why it matters**

Globally, the practice of nature conservation has a complicated history. While potentially doing some good in the way of landscape and species protection, conventional approaches to conservation have been blamed for egregious acts of marginalization, exclusion, physical and social violence, and colonial oppression; this has been particularly true in areas of the global South where Indigenous and subsistence land users are involved

(Adams & Hutton, 2007; Duffy, 2010; Vaccaro et al., 2013). In other cases, misguided efforts at conservation have led unexpectedly to ecosystem decline or loss of biodiversity (Finlayson & McKay, 1998; Sporrong, 1998; Walker & Salt, 2006), highlighting the inadequacy of reductive approaches which neglect social context, local knowledge, and variability.

In the United States (US), conservation action has typically manifest in a few notable ways: delineation of parks and protected areas, restoration of damaged ecosystems, and policies which limit resource extraction and allowable land uses (Adams & Hutton 2007; Luke, 1995; Vaccaro et al. 2013). It is less likely, though not unheard of (Jacoby, 2014), for such policies to stimulate violence or severe oppression in the US. Even so, there exists a pervasive mistrust of conservation organizations among many land and resource users. This is because conservation organizations have a history of utilizing top-down control, operating through opaque decision-making processes, and failing to build trust or understanding with resource users (Davies et al., 2013). Furthermore, resource users often face displacement or exclusion, loss of livelihood, and loss of or altered lifeways due to conservation trade-offs; even when such trade-offs are not imminent, they may be perceived or feared (McShane et al., 2011). This is not an insignificant problem as the presence of a popular conservation ethic is crucial to sustaining and growing positive environmental outcomes (Leopold, 1933; Pandey, 2002).

The past four decades have seen an intellectual shift within the field of conservation science, beginning in the 1980s with the advent of *community-based conservation*. This approach acknowledges humans as part of the conservation ecosystem and attempts to

promote social benefits concurrent with ecological ones (Berkes, 2004; Western et al., 1994). A newer concept, *place-based conservation*, takes this idea further by explicitly calling for collaborative decision making, situated or context-dependent thinking, polycentric governance, and inclusion of local knowledge (Stewart et al., 2013). The merging of social and natural sciences within conservation has been a theoretical ideal for years, and increasingly appears in organizational strategies and mission statements (e.g., Sierra Club, 2020; The Nature Conservancy, 2016). However, conservation organizations, staffed primarily by natural scientists, lack the necessary expertise to achieve desired integration; to collect, process, and operationalize localized social scientific data (Bennett et al., 2016; Berkes, 2004; Blaikie, 2008). As a result, place-based and community-engaged conservation projects are still not the norm in practice.

Despite the apparent challenges, I argue that the social side of conservation does matter and should be further explored for the following reasons:

*(1) "Nature" is a social construction*

Conservation science operates around a set of concepts which are presented as concrete and universally desirable, including nature, biodiversity, and restoration (Blaikie & Brookfield, 1987; Escobar, 1998; Feindt & Oels, 2005). However, these concepts are far from absolute, and cannot be defined according to consistent parameters. On the contrary, they are social constructions, imagined and given meaning by people; different social contexts elicit different meanings (Demeritt, 1994 & 2002; Egri, 1999). If the intention of conservation is to protect "nature," there must be some understanding of what exactly nature means in diverse situations. How do peoples in a specific place

define nature? What do "conservation" and "environmentalism" mean to them? These details vary culturally, geographically, and temporally, and have explicit implications for the success of conservation efforts (Feindt & Oels, 2005; Sinclair et al., 2017). Projects that go against or do not reflect socialized, place-based environmental perspectives are unlikely to resonate. At the very least, awareness of local perspectives and social constructions can inform a more sensitive approach by incoming organizations, even when their conservation goals and actions are pre-determined (Stewart et al., 2013).

(2) *Conservation decisions affect humans*

No matter how strictly ecological conservation practice may appear, it will inevitably have an impact on human communities, and therefore constitutes a social issue as well. Sometimes the effects are direct (e.g., displacement); sometimes detrimental (e.g., loss of livelihood) or beneficial (e.g., carbon capture). In any case, what happens to the natural environment means something for people. Arguably, the people affected should have some voice in the conservation planning and management process, especially those likely to bear the harmful consequences of top-down decisions (Colchester, 2004). In their decision making, conservation organizations should explore and consider the full range of human outcomes; the distribution of harms and benefits, and trade-offs inherent to their actions. This does not necessarily mean that practitioners will alter their strategies. Rather, it imparts a critical awareness which may stem the type of social damage observed in conservation projects past (Mcshane et al., 2011;

Western & Wright, 1994). Social-environmental justice in the conservation process cannot be achieved without such an awareness (Brechin et al., 2003).

*(3) Conservation success hinges on public support and behavior*

To a certain extent, well-funded non-profit and non-governmental organizations (e.g. The Nature Conservancy, Sierra Club, Audubon Society) can control conservation outcomes unilaterally. They can purchase land, set ecological goals, make management decisions, limit access and activities to their liking. However, their ability to sustain this control relies on both political will and public support in the form of donations, volunteerism, and stewardship (Andersson et al., 2015; Home et al., 2009). Even assuming these necessities are in place, conservation potential within the physical boundaries of nature reserves, preserves, and parks is limited. Often, these sites are located within larger ecosystems of interest, over which conservation organizations have no direct authority. Expanding their practical reach requires that they interface with adjacent land managers, make a case for conservation, or tap into a conservation ethic that is already present (Adams et al., 2016; Shackleton et al., 2009). The goal should be not only to protect discrete pieces of land or resources, but to foster a broad, ingrained appreciation of and care for the natural systems on which we rely. This transition, which will only emerge through social learning, not command-and-control management (Dessie et al., 2012), may conceivably lead to conservation as an innate human behavior, rather than a special interest.

**Lacunae and contributions**

Acknowledging that it is a worthwhile exercise, how should conservation organizations go about incorporating social dimensions in their work? Place-based conservation which earnestly engages with and contributes to local communities is a viable option, though its use remains limited and its practical dynamics poorly understood (Stewart et al., 2013).

Numerous case studies detail topics in the vein of community-based conservation, including resource co-management (see for example Berkes, 2007; Cinner et al., 2012; Mehta & Kellert, 1998; Pomeroy et al., 2004; Robinson & Makupa, 2015; Sommerville et al., 2010). Typically, such studies emphasize efficacy and outcomes – either social or ecological – of community-based conservation, describing what succeeded or failed. However, there is limited explanation of the socio-political dynamics underlying those outcomes beyond superficial conclusions (Oldekop et al., 2016), and minimal exploration of factors that drive individual behavior (Sinclair et al., 2017). Furthermore, case studies in this area tend toward the global South. The field of place-based, rather than community-based, conservation is more popular in the global North (Gillen, 2004), and is theoretically more likely to examine those complex, situated dynamics (Stewart et al., 2013). However, detailed examples are rare as place-based conservation has scarcely moved beyond theoretical discourse.

In this dissertation, I explore the social dimensions of nature conservation within the context of one community-engaged initiative, focusing on potential contributions to the field of place-based conservation. Though theoretically promising, there is limited case

study research which explains how place-based conservation influences SES resilience and conservation outcomes, or which qualitatively characterizes social dynamics that inform the community-conservation organization relationship (Waylen et al., 2010). These issues will be investigated through three separate research articles, each drawing on a case study of the Zumwalt Prairie and Preserve, a working conservation landscape in northeast Oregon, the latter of which is owned by The Nature Conservancy (TNC). Furthermore, there exists no clear guidance for how conservation organizations might practically structure interdisciplinary, social scientific research and action in this area moving forward (Stewart et al., 2013). I present a novel boundary object framework, the agency-sense of place-knowledge (ASK) framework, which may be used both to steer descriptive research, as has been done in this dissertation, and as a practical planning guide ahead of conservation interventions. The major contributions of this work are that it (1) adds a detailed, three-part case study and opportunity for theory building to the field of place-based conservation, and (2) offers an accessible option for translating place-based conservation theory into practice, through use of the ASK framework.

**Overview of research**

Research for this dissertation focused on the *Users* component of Ostrom's (2009) SES framework (Figure 1). The intent was to conduct a deep inquiry of user characteristics, experiences, perceptions, and inputs within the conservation context of the Zumwalt Prairie and Preserve (more on this in Chapter 4) which arguably influence individual conservation behavior. Research was conducted with this guiding question in mind: *How can/do conservation organizations affect behavioral adaptation, engage and empower local*

*actors, or tap into lasting environmental consciousness while pursuing ecological goals and conservation priorities?*

A descriptive case study approach was employed, relying on majority qualitative methods and inductive reasoning (Creswell, 1998; Creswell & Plano Clark, 2007). Methodological choices were based in environmental social sciences (Vaccaro et al., 2012) and included all of the following: survey (mixed short answer and multiple choice), open-ended questionnaire, informal and semi-structured in-person interview, participant observation, and document analysis. Data collection occurred both online and in person, over a period of nine months from April through December 2020, and included multiple field visits to the study location in Wallowa County, OR.

I applied a three-part boundary object framework of knowledge, agency, and care adapted from Enqvist et al. (2018) as a guide for the initial research design. The framework was updated and expanded during the course of preliminary research as more information came to light, resulting in the final version: the agency-sense of place-knowledge (ASK) framework, as described in Chapter 3. This dissertation contains three individual studies, one representing each of the three main components of that framework. This multifaceted approach was meant to capture various social dynamics involved in a community-engaged conservation project, with critical, theoretical, and applied implications. Furthermore, this approach models different research protocols that conservation organizations could utilize when gathering data in accordance with the elements of the framework.

The COVID-19 pandemic was a factor in the execution of this research. In-person research activities were prohibited for the first six months of my study, and severely

restricted thereafter. As a result, some research protocols that were meant to occur face-to-face were shifted to an online platform, interview numbers were decreased, and observational activities were limited by a reduction in public activity around the study site. Adequate data were still captured, though it is worth noting the impact of the pandemic on what was meant to be an immersive, field-based exercise.

**Format of the dissertation**

Chapter 2 provides an overview of intellectual developments in the field of conservation science, as well as interdisciplinary literature influential to the design of this research. Fields include socio-ecological resilience studies, political ecology, human geography, and environmental anthropology. Chapter 3 introduces and explains the agency-sense of place-knowledge (ASK) framework used in research design and analysis. Chapter 4 explores pertinent details of the case study site, the Zumwalt Prairie, including geography, ecology, economy, user groups, governance, and conservation history, as well as justification for the case selection. Chapters 5, 6 and 7 each contain one stand-alone study on the topics of agency, sense of place, and knowledge, respectively. Each of the three studies includes its own set of research questions, methods, and participants. Chapter 8 highlights major findings, broad conclusions, and recommendations. It also provides a synthesized look at all three ASK framework components for one user group (Ranchers). Because Chapters 5-7 are formatted for publication in academic journals, each contains its own introduction, literature review, and methodological details. As a result, there will be some repetition of information between introductory (1-4) and study (5-7) chapters.

**Researcher positionality**

I approached this research as someone who has long been an advocate of environmental protection and conservation, who is sympathetic to the idea of protecting nature for nature's sake, and who has enjoyed romanticized depictions of nature. However, I am also a pragmatist and believe that it is essential to integrate diverse human interests in conservation, both for sustainable ecological protection and environmental justice. I am someone who has lived exclusively in urban areas, an outsider to rural life in general and Wallowa County life in particular. I am someone who rarely eats meat and never hunts, examining a landscape in which cattle ranching and hunting are social norms. I have done my best to keep any biases which might result from these facts in check, for example, by keeping notes of my experiences and reactions in the field, and remaining mindful of how my personal feelings might affect data analysis. I approached this work and participants with genuine open-mindedness, respect, and curiosity rather than judgement. As I spent time on the Zumwalt Prairie and interacted with various individuals, I developed my own sense of the place. This made neutrality and detachment increasingly difficult, and forced me to critically consider the reflexive relationship between myself, research participants, and the research environment throughout the process.

It is relevant to note that I am a white woman, conducting research among a population that largely looks like me. This fact arguably eased my introduction into the local community, and provided me a level of comfort as a researcher. I was fortunate to gain access to documents, resources, and personal connections through my partnership with TNC which would likely have been unavailable to me in the absence of that relationship.

Although I frequently clarified that I was not an employee or representative of TNC, I know that my affiliation with local TNC staff afforded me acceptance and credibility among some research participants. This relationship may also have influenced the extent to which respondents were willing to express criticism or praise of TNC's work, which was a central component of my research.

The research contained in this dissertation offers a snapshot of life and conservation on the Zumwalt Prairie in the year 2020. My depiction of this reality is limited by my ability to access and engage substantively with diverse individuals, my need to place their narratives in the context of my theoretical background, my interpretation of qualitative data, and my presence in that specific time and place. The Zumwalt Prairie has a history going back to time immemorial, and the site of this research comprises colonized ancestral lands of the present-day Nez Perce Tribe and Confederated Tribes of the Umatilla Indian Reservation. While acknowledging this, my work does not delve into the details of what came before: how Wallowa County came to look as it does today; how its Indigenous inhabitants were displaced and how some land has been reclaimed; the complexities of discussing "sense of place" in a place that has been colonized. I have approached this work not as an anthropologist or historian but as a conservation social scientist, with the intention of advancing conservation knowledge and practice; noting the importance of past occurrences while emphasizing conditions, dynamics, and opportunities in the narrow present.

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## CHAPTER 2 Linkages in Interdisciplinary Literature

The complexity of socio-ecological dynamics generally, and nature conservation specifically, invites an interdisciplinary approach to research design, data collection, and analysis. This includes integration of natural and social scientific perspectives, as well as a multi-subject approach within the latter. While no single scientific field can explain SES or conservation dynamics entirely, there is potential for well-rounded analysis via a linking of complementary disciplines. In the following section, I provide an overview of recent transitions in conservation thinking relevant to this study, from top-down to place-based conservation. This information sets the stage for current practical perspectives, needs, and limitations. I subsequently review key theoretical concepts in each of four disciplines – socio-ecological resilience studies, political ecology of conservation, sense of place, and environmental anthropology – which have significantly influenced the design of this research, and also appear within the nascent literature of place-based conservation.

### From top-down to place-based: Recent transitions in conservation

Prior to the 1980s, nature conservation as a field of practice and scholarship was bound up in Western scientific discourse, privileging top-down management, scientific expertise, and universal prescriptions (Berkes, 2007; Berkes & Folke, 1998; Luke, 1999). Within this paradigm, conservation was understood to be an ecological issue and human concerns only incidental, if considered at all. The shortcomings of this perspective are evident in case studies across time and space, from fishery collapse in Newfoundland (Finlayson & McCay, 1998) to violent removal of Indigenous peoples from protected areas across the globe (Stevens, 2014). Emergent scholarship on complex socio-ecological

systems served to position humans within "natural" ecosystems and began to dismantle the pervasive nature-culture dichotomy (Berkes & Folke, 1998). Furthermore, through practice, resource managers increasingly came to realize that context and social factors matter in the design, implementation, and outcomes of conservation projects (Berkes, 2007; Western & Wright, 1994). Today, it is common for conservation organizations to refer to social concerns in their mission statements and management plans, whether or not a full integration of natural and social sciences actually occurs in practice (Bennett et al., 2017; International Union for Conservation of Nature, 2020; Sierra Club, 2020; The Nature Conservancy, 2016). Figure 1 below shows a framework currently in use by The Nature Conservancy, which visualizes this newly conceptualized relationship.

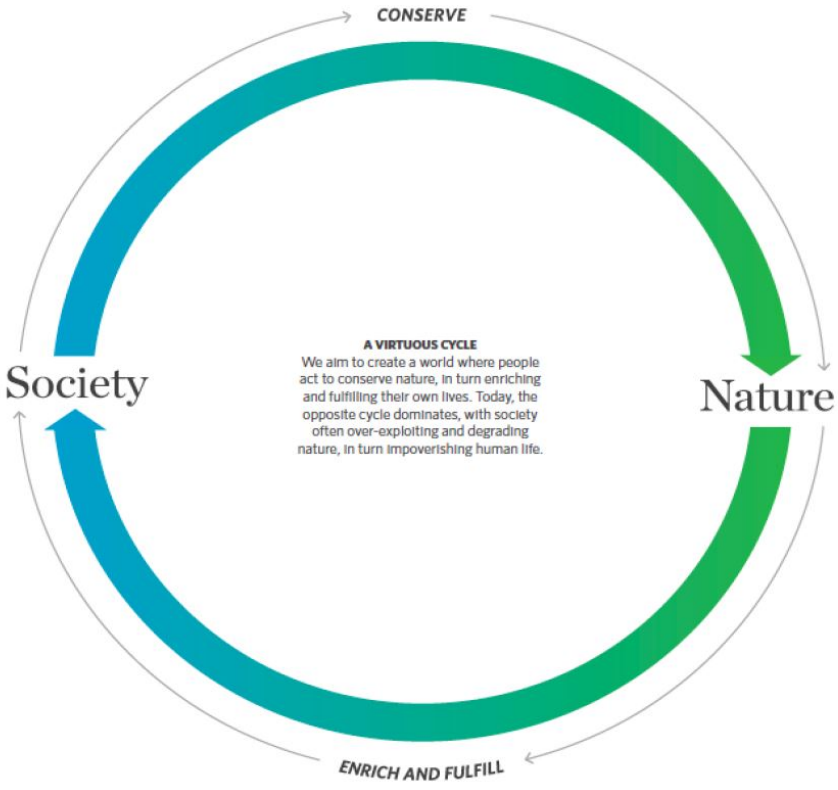


Figure 1. "Virtuous Cycle" diagram from TNC's Conservation by Design 2.0 (2016).

A shift toward community-based conservation occurred in the 1980s in response to the displacement and dispossession typical of top-down and fortress conservation interventions (Adams & Hutton, 2007). The overarching idea was that humans most affected by conservation should have some say in what choices are made. At the very least, conservation should be designed to advance community development and social benefits in addition to ecological conservation (Berkes, 2007; Western et al., 1994). According to Western & Wright (1994), community-based conservation "includes natural resources or biodiversity protection by, for, and with the local community." Importantly, this does not necessitate the involvement of local communities in conservation planning or governance. Rather, within a community-based conservation arrangement, managing organizations can maintain top-down control and expert dominance, while involving communities in the execution of plans or allegedly working for their benefit (Western & Wright, 1994). In some cases, a more collaborative approach has been attempted in the form of resource co-management, which calls for power sharing, as well as knowledge integration and co-production (Berkes, 2009). Co-management has been well-studied over the years, with results indicating a pervasive inability for actors to overcome entrenched power imbalances (Berkes, 2009; Cinner et al., 2012; Ross et al., 2011). Even so, co-management and community-based conservation are still practiced, especially in the global South, and promise a more socially just approach to conservation.

Concurrent with the rise of human-oriented approaches has been the proliferation of neoliberal conservation (Igoe & Brockington, 2007). This appears as the attempted manipulation of environmental behavior through market incentives (e.g., the United

Nations REDD+ program), privatization of resources, or claims of "sustainable development" which tout economic growth alongside conservation (Holmes & Cavanagh, 2016; Luke, 1995; Vaccaro et al., 2013). Proponents argue that market incentives are an effective means of supporting conservation goals, though existing research contradicts this notion (e.g., Dressler & Roth, 2011; Fletcher & Buscher, 2017; Holmes & Cavanagh, 2016). Critics note that neoliberal conservation paradoxically purports to solve environmental issues that neoliberal economics and consumption created (Buscher, 2012; Luke, 1995), while others argue that it (re)concentrates power in the hands of elites and exacerbates socio-economic inequality (Dressler & Roth, 2011; Fletcher & Buscher, 2017; Holmes & Cavanagh, 2016). Though convenient and popular, leveraging market drivers is not the only way to affect conservation decisions at the individual or community level, and may be ineffective when used in isolation (Worku & Mekonnen, 2012). Some studies suggest, for example, that land managers may also be swayed toward conservation by a positive sense of place (Cross et al., 2011; Mullendore et al., 2015), cultural connections to nature (Dorresteijn et al., 2015), or an existing conservation ethic (Blackmore & Doole, 2013), particularly when these co-occur with economic incentives.

Place-based conservation represents the most recent intellectual and practical shift in the field of conservation, emerging gradually over the past several years (Stewart et al., 2013). No concrete definition or parameters have yet been applied to this concept, which is rooted in social rather than natural sciences, though it is understood to possess some distinguishing characteristics. It marks a shift from simple resource modeling to spatial, multi-scale, complex systems thinking; from top-down to polycentric governance and

inclusivity; and toward greater focus on local knowledge, history, and sense of place (Williams et al., 2013). Compared to the community-based model, place-based conservation goes further in asserting the need for community involvement in conservation activities from planning to implementation, and is deeply and explicitly rooted in social scientific thinking. Whereas the community-based conservation movement seems to have treated community engagement as an end goal, place-based conservation utilizes community input as a means to an end; that end being an environment in which humans and nature can thrive in accordance with situated needs. Place-based conservation is not inherently divorced from the modern preference for neoliberal conservation. However, presumably, greater awareness of localized behavioral drivers and interests might lessen reliance on market incentives. The discourse of place-based approaches has been most popular in a global North context (Gillen, 2004), and what few case studies exist have also been concentrated there.

The content of this dissertation is intended to contribute primarily to place-based conservation as a nascent field of practice and case study inquiry. Scholars across the social sciences have attempted to conceptualize and synthesize critical theoretical elements of place-based conservation, asserting its potential to overcome power imbalances and oppression, empower local actors, advance social learning and grow a public conservation ethic, gain public support for and cooperation with conservation projects, and achieve shared socio-ecological goals (Stewart et al., 2013). However, only a handful of case studies currently exist which empirically evaluate place-based conservation initiatives (Brown & Weber, 2012; di Sciara et al., 2016; Edge & McAllister, 2009; Lejano & Ingram,

2007; McIntyre et al., 2008). Most of these do not attempt to characterize pertinent social dynamics which explain outcomes or could be generalized. Furthermore, scholars cite a lack of advancement in terms of translating theory into practice, and limited evidence which affirms the efficacy of a place-based approach (Stewart et al., 2013).

**Socio-ecological resilience studies**

Socio-ecological resilience has been a longstanding goal and focus of both environmental scholars and conservation practitioners (see for example Audubon Society, 2018; Benson & Garmestani, 2011; Brown & Williams, 2015; Olsson et al., 2004; Sierra Club, 2019; The Nature Conservancy, 2016). Simply understood, resilience is the ability of a system to withstand and recover from disturbance, without losing function or, in ecological terms, switching to an alternative stable state (Berkes, et al. 2003a; Holling, 1973; Walker & Salt, 2006). This concept is derived from the field of engineering (Pimm, 1984), has been adopted and retooled by natural scientists (Holling, 1973 & 1996), and is now embraced by a wide variety of social scientific disciplines, each constructing its own particular definition (Meerow et al., 2016; Quinlan et al., 2016).

Regarding environmental issues specifically, Holling's definition of ecological resilience has shown significant staying power: "a measure of the persistence of systems and of their ability to absorb change and disturbance and still maintain the same relationships between populations or state variables" (Holling, 1973:14). The spirit of this ecological definition has prevailed even as scholars in the field of SES resilience increasingly recognize the connectedness of human/social and natural/ecological systems (Berkes et al., 2003b; Berkes & Folke, 1998; Carpenter et al., 2001). Accordingly, SES

research and practice tend to emphasize the ecological side of the equation, while social components are oversimplified or explored only through theory (Fox et al., 2006). However, this disproportionate emphasis on ecology in socio-ecological systems may have been misguided. Ecological resilience alone does not necessarily confer social resilience, or resilience of a larger SES (Adger, 2000), and uneven attention to one side of the system may lead to improper management decisions (Biggs et al., 2015; Laterra et al., 2016).

In the past several years, a new conceptual approach known as *resilience thinking* has emerged among SES resilience scholars (Folke et al., 2010; Walker & Salt, 2006). This perspective builds closely upon principles of ecological resilience; for example, both eschew ideals of equilibria, stability, and status quo, and embrace the inevitability of disturbance and change (Berkes et al., 2003a; Holling, 1973 & 1996; Gunderson & Holling, 2002; Walker & Salt, 2006). However, resilience thinking diverges from ecological resilience in its pronounced emphasis on human/social factors in the SES equation, creating conceptual space for social mechanisms such as governance, knowledge sharing, and participation (Biggs et al., 2015). Furthermore, according to resilience thinking, a system state of *resilience* is not necessarily desirable; rather, resilience is just one potentially favorable option, along with *adaptation* and *transformation*, both of which require some degree of intentional change (Folke et al., 2010; Lyon, 2014). Particularly in situations where human communities are faced with intractable environmental challenges (e.g., resource loss, land degradation, climate change), adaptability - of social structures and environmental behavior - is increasingly viewed as a critically important system characteristic (Adger, 2000; Folke et al., 2010; Lyon, 2014).

Because the concept of resilience is so broad and so fluid - even within the confines of modern resilience thinking - it can be difficult to know how to identify, assess, or plan for SES resilience in a given context. Many scholars and practitioners rely on prescriptive generalizations and resilience indicators that may be easily quantified, the development of which does not necessitate contact with affected human or ecological communities (Quinlan et al., 2016). However, some argue that this sweeping approach fails to produce favorable social or ecological outcomes, and that resilience-building and assessments should take a more place-based approach (Quinlan et al., 2016; Resilience Alliance, 2010; Walker et al., 2002). It is increasingly theorized that successful environmental interventions are those that build upon place-based conceptions of resilience, not just exogenous expectations or assumptions (Liu, 2014; Sellberg et al., 2015; Sinclair et al., 2017; Walker et al., 2002). In addition to more fully reflecting the idiosyncratic needs of individual communities, localized exercises in resilience-building are more manageable in practice, and may theoretically be scaled up over time (Folke et al., 2010). Notably, because SES resilience is not an absolute or quantitatively measurable state, qualitative and/or place-based resilience assessments must focus more on perceived, rather than empirical, resilience (Walker & Salt, 2012).

**Political ecology of conservation**

Like socio-ecological resilience studies, the field of political ecology is expansive and loosely bounded (Robbins, 2012). Broadly, the field acknowledges the political quality of human-nature relationships, and includes such topics as radical environmental movements (Cockburn & Ridgeway, 1979), the socio-political outcomes of environmental

change (Hempel, 1996), access to and control over resources (Watts, 2000), degradation and development (Stott & Sullivan, 2000), and environmental justice and marginalization (Robbins, 2012). My research draws specifically from a sub-field, *political ecology of conservation*, including conservation strategy, implementation, rationale, and outcomes.

There is a tendency within the field of environmental science to treat political concepts as apolitical; to obscure the reality that many ingrained ecological touchstones are social constructions, rather than absolute certainties (Blaikie & Brookfield, 1987; Demeritt, 1994 & 2002; Escobar, 1998; Feindt & Oels, 2005). This includes variable ideas such as nature, biodiversity, and degradation, and actions like conservation and restoration. Parameters of these concepts are informed by political dynamics and normative ideals within a particular social context; there is a clear connection between how a society interprets "nature" and related constructs, and how it acts in/on nature (Demeritt, 1994 & 2002; Egri, 1999). Still, popular thinking suggests that experts pursue ubiquitous environmental goals with rational objectivity.

Expert-driven discourse determines what ecological or socio-ecological state is best, and how it should be attained (Agrawal, 2005; Escobar, 1998; Luke, 1995; Van Assche et al., 2017). This has produced decades of conservation executed through impositional, paternalistic means. From outdated models of fortress conservation to modern exercises in co-management, some groups or activities are prohibited, while others are deemed acceptable. For example, subsistence land-users have historically been displaced from conservation areas, while tourism, research, and regulated commercial resource exploitation have been permitted (Adams & Hutton, 2007; Luke, 1995). However,

it should not be assumed that goals and definitions put forth by designated experts are objective or universally applicable. On the contrary, variability in socio-political context easily renders prescriptions invalid and reveals the bias in their origins.

Expert dominance, natural scientific dominance, and apoliticization are common problems affecting conservation research and practice, any of which may lead to the issues discussed in Chapter 1 (e.g., oppression, inappropriate interventions, reductive or prescriptive thinking). These can be understood through the Foucauldian notion of power/knowledge dynamics (Hall, 2001). According to Foucault, power and knowledge co-exist and are co-constituted, reinforcing one another (Van Assche et al., 2017; Luke, 1995). Through discourse and practice, dominant power/knowledge formations are reinforced, and certain behavior becomes normative (Agrawal, 2005). This creates the figurative window through which a society views the natural environment, as those in positions of power can dictate what is considered rational and true. Power/knowledge formations occur at various scales and may be in conflict with one another, a quality which partly accounts for friction between (inter)national conservation organizations and situated user groups (Reinecke & Blum, 2018; Robbins, 2000).

Those who become environmental experts are often trained according to positivist, Western-scientific, and neoliberal capitalist principles, and environmental scientists are insulated from social scientific thinking within academia (Luke, 1999). This has real implications for the exercise of conservation, particularly the inclusion of and responsiveness to socio-cultural factors which challenge conventional wisdom (Escobar, 1998; Feindt & Oels, 2005). Theoretically, community-engaged approaches to

conservation help to correct this imbalance by introducing marginal discourse, practice, and socio-ecological interests into the dominant milieu (Berkes, 2009). However, power/knowledge structures are stubbornly rigid, and significant transformation requires a concerted effort at power-sharing and knowledge co-production, conditions which case study research shows to be largely absent. The result is ecologically- and expert-driven conservation that consults with but does not necessarily integrate complicating social information (Berkes, 2009; David-Chavez & Gavin, 2018; Raik et al., 2008).

**Sense of place**

Of the major theoretical fields addressed in this proposal, sense of place is the most novel and least developed in its application to conservation research, particularly as it pertains to conservation behavior and SES resilience. However, it is a central theme in place-based conservation literature. *Place* is a crucial component of geography, the theory of which encompasses everything from spatiality, landscape, and sensual experience, to contestation, perception, and activity (Cresswell, 2015a). Over many centuries, the concept has been adopted and elaborated upon by numerous social science disciplines (Cresswell, 2015a & 2015b). *Sense of place*, which includes elements of place dependence, identity, meaning, and attachment, is increasingly recognized as relevant to environmental planning, management, and resilience, though this field of inquiry is not yet well developed (Masterson et al., 2017).

Numerous studies document attachments that individuals or communities possess toward a particular environment (e.g., Davenport & Anderson, 2005; DeLyser, 2001; Jorgensen & Stedman, 2001), characterizing specific values or place meanings (for

example, as shown in Figure 2). Some studies have gone beyond characterization, using sense of place to explain reactions to environmental change (Kyle et al., 2004), responses to imposed resource management (Bonaiuto et al., 2002; Larson et al., 2013; Yung et al., 2003), or environmental attitudes (Bell & York, 2010; Brehm et al., 2013). Sense of place is sometimes identified as a cultural ecosystem service (Hausmann et al., 2016); it is recognized as an environmental resource from which humans passively benefit. However, scholars have begun to consider how sense of place might be engaged to actively confer socio-ecological resilience as well (Masterson et al., 2017).

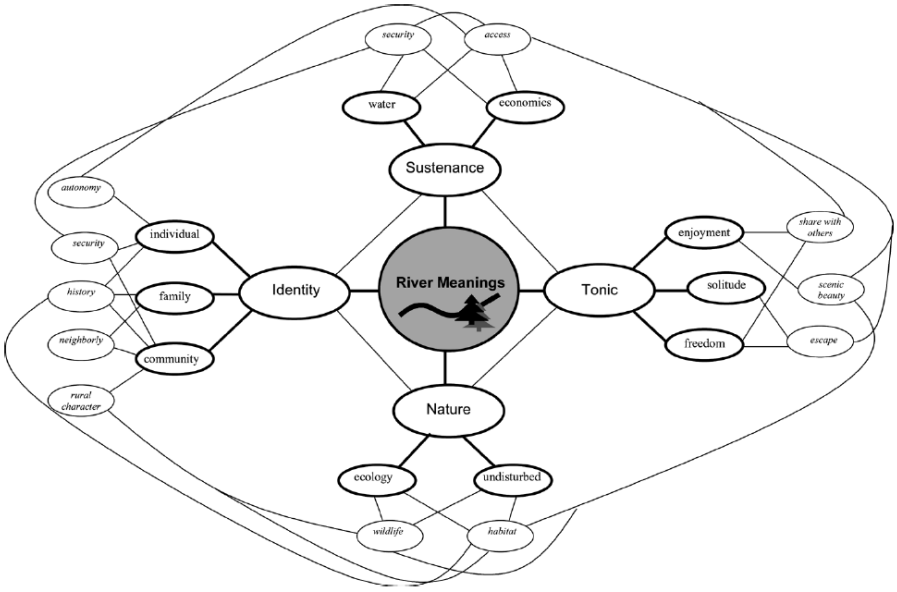


Figure 2. Diagram of place attachment and meaning: "Web of river meanings" from Davenport & Anderson (2005).

In only the past few years, research opportunities have been identified at the nexus of sense of place and socio-ecological resilience, identifying the former as a potential gateway to environmental concern, ecological understanding, stewardship, and adaptation

(Masterson et al., 2017; Andersson et al., 2015). This rests in part upon the notion that communities will be more inclined to protect and/or adapt within the natural places that they care about (Andersson et al., 2015; Kibler et al., 2018; Masterson et al., 2017 & 2019). Furthermore, it is theorized that conservation organizations may tap into sense of place, and assess place-based concerns, knowledge, and perspectives prior to implementing action as a means of easing transitions and limiting conflict (Chapin & Knapp, 2015; Kibler et al., 2018; Larson et al., 2013; Masterson et al., 2017; Yung et al., 2003). These benefits reflect those cited by advocates of place-based conservation (Stewart et al., 2013).

The relationship between sense of place and SES resilience, particularly within conservation, remains tenuous. Case studies are needed to build upon the theoretical outcomes noted in the previous paragraph. Most lacking at this point is evidence to support the notion that sense of place or place-based values can produce pro-environmental behavior. To date, research in this arena has primarily investigated pro-environmental attitudes and beliefs: the extent to which sense of place might produce environmental concern, or even a willingness to support conservation actions (Brehm et al., 2013; Raymond et al., 2011; Vorkinn & Riese, 2001; Walker & Ryan, 2008). However, environmental concern does not necessarily produce pro-environmental or conservation action (Raymond et al., 2011), and more research is needed to understand how concern translates into behavior (Halpenny, 2010). Furthermore, research on this topic pertains largely to charismatic tourist sites, such as national parks or natural landmarks. Less is known about environmental concern, action and sense of place in residential or primary production landscapes (Halpenny, 2010; Raymond et al., 2011).

**Environmental anthropology**

Environmental anthropology is concerned primarily with the "use of anthropology's methods and theories to contribute to the understanding of local or global environmental problems" (Townsend, 2018:120). As Townsend's definition implies, this is a rich and diverse field encompassing a wide range of research foci, though all involve an investigation of human-environment relationships. There are significant points of overlap between socio-ecological resilience studies, political ecology, and sense of place as I have employed them in this research, all of which explore such relationships and may be considered close associates of environmental anthropology as a broad category. Indeed, political ecology and human geography (place) are often considered direct offshoots of environmental anthropology (Townsend, 2018). To avoid repetition, I will limit discussion here to theoretical components within environmental anthropology that pertain to ecological knowledge.

Multiple sub-fields of environmental anthropology deal with alternative knowledge systems; that is, knowledge which is culturally situated, and apparently differs from a more general, Western-scientific or expert-derived knowledge (Berkes, 2018). Three ways of characterizing this knowledge are Indigenous (IK), local ecological (LEK), and traditional ecological (TEK). These terms are used interchangeably by some, and in various arrangements by others (Berkes, 2018; Wohling, 2009). I choose to employ the following definitions: IK encompasses any current or past knowledge intrinsic to Indigenous cultures; TEK is knowledge which has evolved over a long period of time but is not necessarily Indigenous in its origins; LEK is any knowledge, old or new, that is specific to the

inhabitants of a particular place. The data obtained for this dissertation can best be classified as reflecting LEK.

The anthropological sub-field most directly engaged with alternative knowledges and outcomes is ethnoecology. This includes study of how individuals perceive, interact with, manipulate, and relate to the natural environment, how those details vary across cultures, and what they mean for socio-ecological problems such as resource degradation and management (Gragson & Blount, 1999; Nazarea, 1999; Ruiz-Mallen et al., 2012). Ethnoecological inquiry has historically been applied in studies of Indigenous cultures, particularly as a means of distinguishing Indigenous from Western-scientific ecological understanding. However, its principles and methods are appropriate for use in any place-based, culturally-specific context in which actors have experiential knowledge of an ecological system, process, landscape, or species. Recent ethnoecological research has departed from a strict focus on Indigenous cultures to include non-Indigenous subsistence land users and other rural populations (Ruiz-Mallen et al., 2012). Numerous studies have also explored LEK within the context of urban or post-industrial environments, often with an emphasis on stewardship and nature valuation, though these are not typically classified as ethnoecological studies (Barthel et al., 2010; Chen et al., 2016; Yli-Pelkonen & Kohl, 2005).

The topic of LEK has been commonplace in nature conservation and resource management literatures of the past few decades. A popular theoretical notion is that integration of LEK with conventional, Western-scientific practice may enhance outcomes by supplementing knowledge and uncovering novel solutions, and by increasing

representation and environmental justice through engagement of resource users (Berkes, 2009; Bohensky & Maru, 2011). However, case study research indicates that this approach has not been successful in practice. Typically, LEK or TEK which affirms normative ecological thinking is selectively integrated, while local communities are engaged only to the extent of extraction or consultation, to the detriment of ecological function and social resilience (Berkes, 2009; Cinner et al., 2012; David-Chavez & Gavin, 2018; Ross et al., 2011).

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## CHAPTER 3 The ASK Framework: Studying Users' Conservation Behavior

The research studies presented herein (Chapters 5-7) have been structured around a conceptual boundary object framework including primary components of agency, sense of place, and knowledge as drivers of conservation behavior (Figure 1). The framework focuses specifically on the *Users* component of Ostrom's socio-ecological systems diagram (2009, see Chapter 1, Figure 1). It will be referred to from here on as the ASK framework. This name is an acronym based on the three main components, but also reflects its intended use as a tool to direct place-based inquiry: if conservation interventions or analyses are to be situated in local context, researchers and practitioners must *ask* local actors for their input. The framework may be applied, as I have done, to structure descriptive case study research on users' conservation behavior. I also propose it as a practical guide for pre-intervention data gathering, organization, and planning which might uncover site-specific details and smooth implementation of conservation interventions. More specifically, I offer this framework as a means of translating the theory of place-based conservation into accessible, practical terms.

My ASK framework has been adapted from a similar model developed by Enqvist et al. (2018) (Figure 2), which parses stewardship action into categories of care, knowledge, and agency. As there is considerable overlap between environmental stewardship and conservation behavior, this well-researched framework provided a starting point from which I conceptualized components of the latter. I then adjusted and expanded the details based on findings in conservation and related literatures, and refined them further during the course of research conducted for this dissertation.

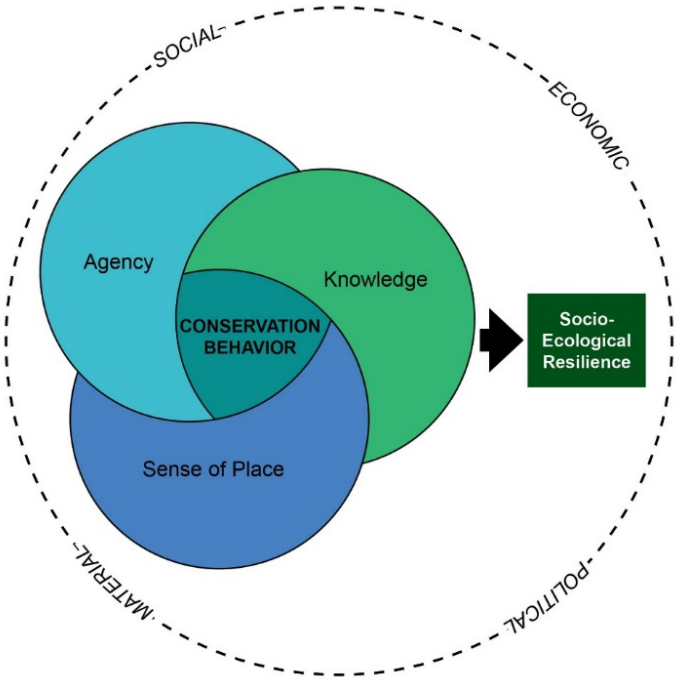


Figure 1. ASK Framework: A guide for studying user conservation behavior within an SES.

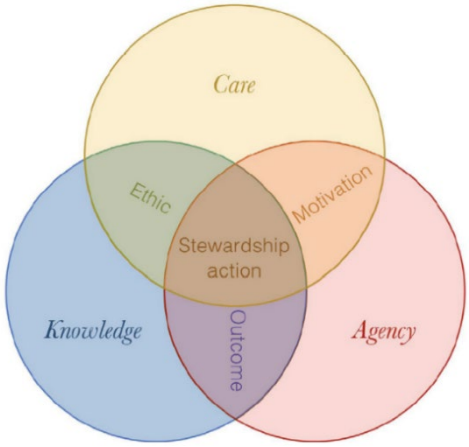


Figure 2. Original care, knowledge, agency framework developed by Enqvist et al. (2018). The ASK framework used in this work has been adapted from this model.

Beyond the literature review and synthesis provided by Enqvist et al. (2018), numerous scholars from interdisciplinary fields have theorized or observed the role of agency (Barrett et al., 2011; Deng et al., 2016; Pelletier, 2002; Sheng, 2019; Valizadeh et al., 2019), sense of place (Cross et al., 2011; Eaton et al., 2019; Mullendore et al., 2015; Ulrich-Schad et al., 2016), and knowledge (Aregay et al., 2018; Dolnicar et al., 2012; Frick et al., 2004; Lacroix & Gifford, 2018; Schultz et al., 2005) in directly influencing conservation behavior and decision making, hence the central positioning of these factors in the ASK framework. However, the cited cases typically take these relationships to be dyadic. In contrast, I posit that the interaction of knowledge, agency, and sense of place is most explicative of conservation behavior. Furthermore, these interactions include a mix of conservation-enabling and limiting conditions. In other words, these factors together inform conservation behavior, but that behavior is not necessarily positive or negative. This multi-dimensional approach is supported by recent theoretical advances in the field of place-based conservation (Knowler & Bradshaw, 2007; Stewart et al., 2013). The inclusion of other elements within the framework is based upon common themes in both community-based and place-based conservation literatures (De Young, 1993; Moswete & Thapa, 2015; Kideghesho et al., 2007; Stewart et al., 2013; Waylen et al., 2010), and in literatures of the four fields reviewed in Chapter 2. The ASK framework is based on my own interpretation and synthesis of findings in interdisciplinary literature, and is not an exhaustive account of factors potentially influencing conservation behavior. A detailed account of each component is given in the following section.

Like the framework provided by Enqvist et al. (2018), the ASK framework introduces a central boundary object: conservation behavior, in this case. A boundary object is a bridging concept shared between disciplines. It may serve as a focal point around which to structure interdisciplinary discussion, facilitate localized application of concepts, and contribute to a general understanding of a complex, fluid topic (Brand & Jax, 2007; Enqvist et al. 2018). The ASK framework highlights context factors and dynamics which inform the boundary object of conservation behavior, and bridges multiple scientific disciplines including ecology, political ecology, anthropology, geography, and resilience studies; it may similarly be used to bridge discussions between conservation practitioners and researchers or theorists.

**Components of the framework**

*Conservation behavior* is at the center of this framework and is the component of greatest interest. The phrase "conservation behavior" is intentionally vague, and does not distinguish behavior which is sanctioned or preferred by conservation professionals; it may also include conservation behavior selected by local land managers or other actors. The precise parameters of "conservation" and other socially constructed environmental terms *in situ* may best be deciphered through localized research, given that various settings yield contested meanings (Guha & Martines Alier, 1997; Selfa & Endter-Wada, 2008). The use of the word "behavior" specifically evokes action, as opposed to the mere presence of a conservation ethic or general inclination toward environmental protection. Conservation behavior may refer to direct actions, such as altering land management or resource extraction activities, or indirect stewardship behaviors such as canvassing or donating

funds to advance conservation initiatives. It may also imply the absence of any such actions (i.e., one's conservation behavior is inaction). The structure of the framework implies that an emphasis on the coalescence of agency, sense of place, and knowledge provides the deepest explanation for conservation behavior (or lack thereof), though any single component may be informative.

There is growing interest within the conservation community regarding behavioral change (Cowling, 2014); that is, how exactly conservation organizations can affect environmental behavior through "awareness, incentives [or] nudges" (Reddy et al., 2017). While effective behavior-change mechanisms are certainly worth exploring, there is still a need to understand what underlying factors shape conservation behavior to begin with. For example, Reddy et al. (2017) suggest a formulaic examination of human behavior in context, asking what behaviors exist, among whom, and why. It is the question of *why* that may most effectively be addressed through application of the ASK framework. The components surrounding conservation behavior in the framework encompass a variety of previously identified behavioral indicators (e.g., beliefs, policies, and social norms as suggested by Reddy et al.), and may help ensure that any resulting interventions are appropriately complex and suitable for the population at hand.

A*gency* is rooted in the field of political ecology, and emphasizes various degrees of power held among actor groups (Emirbayer & Mische, 1998; Svarstad et al., 2018). Within this framework, agency includes the capacity for local actors to resist or enact conservation behavior in accordance with their interests (Agrawal, 2005); to meet environmental challenges and attain resilience (Brown & Westaway, 2011); to contribute

knowledge and disrupt normative power/knowledge dynamics (Escobar, 1998); and to organize or generate political clout (Bhattarai & Jana, 2007). Agency implies the presence of choice, influence, action potential, and self-determination. The effect of heterogeneity in human agency has been noted as lacking in SES and resilience studies to date (Sinclair et al., 2017). Considerations of agency apply to powerful conservation organizations as well. Though they are to some extent controlling the trajectory of activities, agency concerns their power to influence pro-environmental behavior (namely, nature stewardship and/or conservation) both on and off of conservation sites; to cultivate a conservation ethic among resource users; and to make localized decisions within a larger structure of State, Tribal, Federal, and institutional governance. Both local land users and conservationists must have the ability to implement their unique agendas; useful knowledge and a desire to act cannot in themselves achieve conservation outcomes.

*Sense of place* is derived from the field of the same name. Enqvist et al. (2018) identify factors related to sense of place under the heading of "care," which includes sense of place as well as morality and social norms. For purposes of this work, I consider the latter two dimensions as elements of *knowledge*, and have decided to hone in on *sense of place* specifically. In accordance with theory, sense of place includes both place attachment (contains dependence and identity) and place meaning (Masterson et al. 2017). Dependence is directly related to SES resilience and implies a need to practice conservation for one's own survival (Cross et al., 2011; Guo et al., 2018; Smith et al., 2012); identity captures personal socio-cultural connections that may incentivize protective action or feelings of responsibility (Halpenny, 2010; Reid et al., 2020; Vaske & Kobrin, 2001); meaning is a

descriptive interpretation of what is a place is like, and is also potentially informative of behavior to preserve the image of that description (Campbell & Smith, 2006; Davenport & Anderson, 2005; Masterson et al. 2017). All three elements of sense of place are theorized to influence environmental concern and values, with potential to produce action. Furthermore, assessing localized sense of place is of explicit relevance to the practice of place-based conservation as it may explain community interests, and elucidate strategic approaches to intervention (Masterson et al., 2017).

*Knowledge* is intended to capture the nuances of local ecological knowledge as described in anthropological literature. Specifically, I use the word "knowledge" to encompass knowledge, practice, and belief, in accordance with the ethnoecological definition provided by Berkes (2018:7-8). It may be gained through formal education, social learning, or personal experience (Berkes, 2018; Berkes & Turner, 2006). This component of the framework includes explicit knowledge of ecological phenomena, conditions, and changes (Berkes, 2018); personal/community indicators of resilience, articulated in terms of threats and concerns (Bernatchez et al., 2011; Tyler et al., 2016); activities on land or within a natural-environmental setting (Lebel, 2013); beliefs regarding socio-ecological relationships and nature conservation (Berkes, 2018); and perceptions of ongoing conservation interventions (Sattler & Nagel, 2010). Arguably, user groups must first have an awareness (knowledge) of socio-ecological issues before considering conservation, and managed conservation strategies should reflect local knowledge as a way to attain support (Schenk et al., 2007). This component also incorporates complementary considerations from political ecology, such as knowledge in normative power/knowledge

formations (Hall, 2001), and knowledge representation as a mechanism of social resilience and justice (Mels, 2016; Walker, 2010).

*Socio-ecological resilience* is positioned within the same social field as conservation behavior, but stands apart from it. The ASK framework assumes that conservation behavior (action or inaction) effects socio-ecological resilience, as indicated by literature in environmental sciences (Fremier et al., 2015; Gu et al., 2012; Ruiz-Mallen & Corbera, 2013; Westerman et al., 2013), though this effect is not inherently negative or positive. Furthermore, we cannot assume that conservation action alone fully determines a community's or individual's resilience, which is why resilience is placed beside, rather than within, the ASK arrangement. For example, successes in conservation could either directly produce (Barrett et al., 2011) or fail to address (Berkes & Seixas, 2004) other areas of social-environmental vulnerability, such as displacement or economic disturbance. Literature tells us that socio-ecological resilience is not often an empirically measurable state, but is rather a matter of perception (Walker & Salt, 2012). Therefore, the *context* within which resilience is invoked will determine how precisely it is constructed and interpreted in response to conservation. In accordance with the contemporary concept of resilience thinking discussed in Chapter 2, the term "resilience" in this framework encapsulates status quo resilience, as well as adaptation and transformation where necessary (Folke et al., 2010; Walker & Salt, 2006).

I have indicated four *context* factors – social, economic, political, and material – which should be considered in place-based conservation research and practice. These align closely with the contextual components presented in Ostrom's (2009) SES diagram, but in

this instance are applied specifically in reference to *Users* within that model. The four factors represent the grounded, multi-scale realities operating around any conservation project. They include community-level actors, stakeholder groups, rightsholders, institutions, and cultures (social), market forces and major sectors (economic), governance systems, policies, and discourse (political), and the natural or built environment (material). While not directly impacting the individual conservation behavior of users, these systems provide the context within which agency, sense of place, and knowledge data can be organized and assessed. Within the framework diagram, context is represented by a dashed line to indicate that it is not fixed. It may expand or contract based on the scale of inquiry and cross-scale linkages, and is subject to change over time (Flint, 2013). Explanations of agency, knowledge, sense of place, conservation behavior, and SES resilience only hold meaning when they are evaluated in the appropriate context (Williams, 2013; Williams et al., 2013).

**Using the framework**

Taken as a whole, the ASK framework directs researchers and practitioners to establish social, economic, political, and material context, then points to pertinent factors (ASK) influencing conservation behavior within that arrangement. These interacting components can produce a range of questions regarding both conservation behavior and perceived or measured socio-ecological resilience in a place-based context, to be set at the discretion of the researcher. Regardless of specific questions or research angles, this framework serves as a guide to collecting information that is germane to successful place-based and community-engaged conservation; a guide with which to translate theoretical

ideas into practicable data categories. As it highlights key topics for consideration, the framework may inform data collection and contextualization either during or in advance of a conservation intervention, to identify areas for improvement in the former case, or opportunities to smooth interventions in the latter. It may be particularly useful in alleviating a "tragedy of the commons" scenario (Hardin, 1968; Ostrom, 1990), in which user groups with divergent interests share in publicly owned resources. By examining the social dimensions included in the ASK framework, conservation practitioners could find novel entry points into community engagement, messaging, conflict-mediation and intervention; particularly by understanding how different users perceive and treat common pool resources, and what motivates them to do so.

A boundary object framework is not intended for strict or prescriptive use. Rather, it is a flexible tool meant to enable cross-disciplinary research and discussion, and to explore numerous research channels (Brand & Jax, 2007; Enqvist et al., 2018). This means that the ASK framework need not be used in its entirety, or limited in its application to specific types of questions. For example, although the interaction of agency, sense of place, and knowledge is thought to provide the strongest explanation of action, any individual factor can be studied for its specific relationship to the central object, conservation behavior. Furthermore, within each component, the user may ask a range of questions. For example, within the knowledge component, one may ask *Whose knowledge is represented in site management plans?* or *What environmental practices and beliefs are common among residents of this community?* Differing scholarly and practical agendas will yield differing uses of the framework and its components.

Within this dissertation, I have chosen to apply the three primary components of agency, sense of place, and knowledge individually to three separate research studies, including a different arrangement of user groups in each case. All studies are couched within the same social, economic, political, and material context established in Chapter 4. I will also discuss the confluence of these three components for the user group Ranchers, and implications for that group's conservation behavior and perceived socio-ecological resilience (Chapter 8). Importantly, my process is only one of many options for applying this framework in research, rather than a comprehensive example of its utility. Different contexts (e.g., recreational rather than working lands) and user groups (e.g., rural land managers, urban community stewards) necessitate tailored research directions.

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## Chapter 4 Case Study Overview: the Zumwalt Prairie and Preserve

All individual studies presented within this dissertation (Chapters 5-7) have been drawn from a single case study site, the Zumwalt Prairie and Zumwalt Prairie Preserve (ZPP) in Wallowa County, Oregon. In this chapter, I review the relevant social, economic, material, and political context within which social dynamics under consideration (agency, sense of place, knowledge, and conservation behavior) are operating. Because individual town populations are small and relatively homogeneous, and local governance tends to address the county level, the contextual information presented here will take the same approach. Subsequent sections refer to demographic and economic factors within Wallowa County as a whole, rather than for individual localities. The information presented in this chapter is based on conversations with staff from The Nature Conservancy (TNC), background research, and fieldwork.

The Zumwalt Prairie is a large working landscape in rural eastern Oregon, a portion of which is owned and managed as a nature preserve (the ZPP) by TNC. This site is notable as TNC leases preserve land to local ranchers and maintains a limited grazing presence, which is considered a key component both of conservation management and social resilience. Additionally, I have identified this case a suitable study location for the following reasons:

(1) The prairie is a unique grassland ecosystem which faces explicit ecological threats.

(2) Local actors possess strong social ties to and culturally ingrained behavior within the prairie area, relating to, for example, ranching, hunting, and recreation.

(3) A significant portion of the prairie is under control of a powerful conservation organization (TNC) and the entire area has been the recipient of conservation attention over the past two decades.

(4) Conservation at the site has been undertaken with community engagement, social variability, and local priorities in mind, diverging somewhat from the usual top-down approach and tending toward place-based conservation. Therefore, this is a suitable location to explore the outcomes, dynamics, and barriers associated with a place-based approach[1].

I have determined that a focused, descriptive case study is the most effective means of studying phenomena associated with place-based (or something approaching place-based) conservation at this time. Firstly, this scale corresponds with the very localized intentions of place-based conservation practice. Secondly, due to the relative lack of empirical evidence regarding place-based conservation, a single and conceptually manageable case seems a safe starting point for inductive research. Finally, by focusing solely on this isolated case, I believe I can more successfully investigate outcomes using qualitative methods and provide useful recommendations for local TNC staff. This is in

[1] The Nature Conservancy has not explicitly referred to its work at the ZPP as "place-based conservation," and no clear definition of that concept yet exists in the literature (Stewart et al., 2013). Therefore, characterizing this endeavor as such is somewhat open to interpretation. Given that TNC's work aligns with some facets of a place-based approach, as identified in Chapter 2, and has been more community- and place-oriented than the norm, I consider it a nascent practical example of place-based conservation. I further assert that this community-engaged project can be reasonably studied within the intellectual parameters of that field. The intent of this research is not to evaluate TNC's past work at the ZPP against a modern ideal or standard of place-based conservation, as no such standard currently exists. Rather, the goal is to inductively explore social dynamics within this arguably place-based arrangement.

keeping with my intention to conduct research with applied utility and qualitative, social-scientific focus.

Research pertaining to resource management and socio-ecological resilience tends to take a systems level view, often operating from a fairly zoomed out analytical position. Small-scale case studies and low-level inquiry are not typically applied, perhaps since resilience is not limited by discrete geographical or cultural boundaries (Sinclair et al., 2017). However, I suggest that scholars and practitioners can more fully understand socio-ecological dynamics and more effectively promote conservation behavior at a local level first. Resulting knowledge or social consciousness can then conceivably be scaled up and out in the future; for example, from individual ranch, to county, to ecological region. Indeed, adaptation and transformation beginning at a local scale are theorized to increase resilience more broadly, and dynamics at the individual or social network level have direct implications for human agency and environmental discourse (Folke et al. 2010; Sinclair et al., 2017).

**Material context: Geography and ecology**

This research occurred within two spatial scales which are interactive and highly interrelated (Figure 1). The larger of the two is the Zumwalt Prairie, a grassland covering nearly 330,000 acres in rural Wallowa County, northeastern Oregon, United States. The prairie stretches from Minam in the west to Imnaha in the east and occupies the entire Wallowa Valley. It is managed by a patchwork of private landowners, including many ranchers, with neighboring lands owned by the US Forest Service. Within the larger prairie is the Zumwalt Prairie Preserve (ZPP), a 33,000-acre area owned by TNC Oregon. The

ZPP is significantly larger than other TNC properties (average 479 acres) and farm or ranch properties (average 425 acres) in Oregon (Oregon Department of Agriculture, 2020; TNC 2021). However, it is smaller than neighboring public lands; notably, the Wallowa Whitman National Forest (2.3 million acres) which surrounds the Zumwalt Prairie and covers portions of Oregon, Washington, and Idaho (National Forest Foundation, 2021). TNC staff have determined that collaboration with ZPP-adjacent landowners is appropriate to expand and elevate their conservation impact. Accordingly, they have pursued community engagement across the landscape as a whole, and local impressions of the two scales (Prairie and Preserve) are intertwined. Because this research is intended to capture social dynamics of an engaged conservation initiative, it is appropriate to include both scales over which TNC's influence has been exerted.

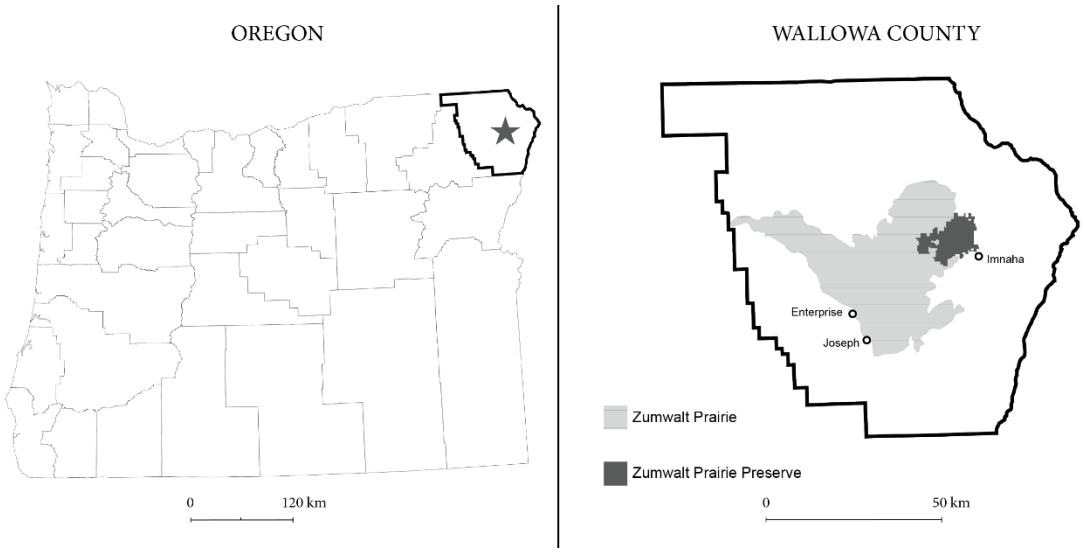


Figure 1. Map of Wallowa County, Oregon and detail view of the Zumwalt Prairie and Preserve.

The Zumwalt Prairie is among the largest intact grasslands of its kind worldwide, comprised largely of native bunchgrasses. It supports a diversity of wildlife, including "over 200 native species of wildflowers, 250 species of birds, 20 of which are raptors; and many large mammals such as Rocky Mountain elk, mule deer, cougar, black bear, bighorn sheep, and gray wolves," as well as pollinators (TNC, 2016a:2). Within and around the ZPP are riparian environments of the Wallowa, Snake, and Imnaha Rivers, Big Sheep Creek, and Camp Creek, among others.

The Zumwalt Prairie has historically been and remains a working landscape, formerly hosting farms and homesteads, and now used primarily for cattle ranching (TNC, 2010). The ZPP is also maintained as a working landscape, with limited grazing allowed by TNC (Figure 2). The material environment – including open grasslands, equipment, and structures – is particularly conducive to ranching activity (Sorte, 2009). The prairie itself may be viewed as an ecological hub, connecting vast lands of conservation interest in Oregon, Washington and Idaho (TNC, 2016a) such as Wallowa Whitman National Forest and Hells Canyon National Recreation Area; though notably, the ZPP and other parcels on the Zumwalt Prairie are privately owned, while surroundings are largely public land.

From a conservation standpoint, the Zumwalt Prairie is considered ecologically stressed and in need of intervention. TNC has identified the following as primary threats to the grassland: "incompatible grazing; land conversion resulting from housing development, potential commercial wind development, and/or conversion to cultivated crops; invasive noxious weeds; excessive herbivory by elk; and an altered fire regime" (TNC, 2016a:3). These concerns do not necessarily encompass or align with those held by

all other local land users (more on this in Chapter 7), however, these have been the focus of TNC's conservation efforts.

Figure 2. Cattle on the Zumwalt Prairie Preserve, summer and fall 2020.

Wallowa County covers over 2 million acres, but population and development are concentrated in around the Zumwalt Prairie, particularly in the Wallowa Valley region including Joseph and Enterprise, OR. Several small towns surround the ZPP and support agricultural operations elsewhere on the Zumwalt Prairie. These include Minam, Wallowa, Lostine, and Imnaha. The largest municipalities in the area are Joseph and Enterprise, the county seat. There has been some concern among local conservationists and others about development encroaching onto the prairie, parcel subdivision, and growth of population centers. Still, the combined area of Joseph and Enterprise accounts for only about 0.5% of the total Zumwalt Prairie, at 1,536 acres (US Census Bureau, 2019). Recent trends in land use change and property ownership indicate a shift away from working landscapes toward property managed for aesthetic and recreational purposes (Abrams, 2010).

**Economic context: Major sectors**

Livestock and beef production are critical industries in Wallowa County, yielding millions of dollars annually (TNC, 2016a). Given the combined economic value of cattle ranching and its potential impacts on the natural environment, ranchers and ranching practice have received particularly focused attention from TNC staff in their conservation efforts around the ZPP. An economic report produced by Community Economist Bruce Sorte (2009) found that Wallowa County's is "fundamentally a natural resource based economy" (2009:1). After agricultural production and processing, the largest industries in the county are, in order of jobs provided, government, tourism, manufacturing, timber production and processing, and residential and commercial development and real estate (Sorte, 2009). A significant portion of the local economy is dependent on household

income from outside Wallowa County, including rents and dividends (Sorte, 2009). The county also benefits from seasonal tourism which increases recreational, lodging, food, and other service sector employment opportunities (Byers & Luna, 2011).

The natural resource economy took a hit in the late 1990s, when multiple local sawmills were closed and timber production restricted (Wallowa Resources, 2020). Barring significant changes in the availability of natural resources, agriculture is expected to remain a stable and lucrative local industry with high potential for growth and diversification (Sorte, 2009). However, Wallowa County is facing the combined effects of an aging workforce, relatively low wages (compared to Oregon and US figures), and physical distance from major market centers or transportation hubs, limiting potential to attract or retain younger workers (Sorte, 2009).

**Social context: Demographics and user groups**

Wallowa County, Oregon had a total population of 7,004 in 2019, 45% of which resided in either Enterprise or Joseph, at the southern edge of the Zumwalt Prairie and nearby the ZPP (US Census Bureau, 2019). In the same year, the county population had a median age of 52.6 years, median household income of $51,224, and was 94.9% white; that is older, whiter, but less affluent than the populations of Oregon and the United States (US Census Bureau, 2019). Educational attainment and homeownership were higher than the national average: 93.1% with at least a high school diploma and 69.7% homeownership in 2019; 26.5% of the adult population also held a bachelor's or graduate degree in that year (US Census Bureau, 2019).

Today, ranchers are perhaps the most visible presence in the region. As one interviewee put it, "when people think of this place they think cattle country." However, the Wallowa Valley and Zumwalt Prairie are also ancestral homelands of present-day members of the Nez Perce Tribe and Confederated Tribes of the Umatilla Indian Reservation (CTUIR). The Nez Perce reservation is located just over the Oregon-Idaho border in Lapwai, ID, and the CTUIR reservation is in Pendleton, Umatilla County, OR; few tribal members currently reside in Wallowa County. Still, the area remains of cultural significance and use, and Nez Perce and CTUIR are considered rightsholders[2] there. The Nez Perce Wallowa Homeland, a physical landholding and organization dedicated to celebrating and sharing Indigenous culture and knowledge, is located in nearby Wallowa, OR (Nez Perce Wallowa Homeland, 2020). The Tribe's resource managers operate in ancestral territory across three states, ensuring tribal access to hunting and fishing rights, and enforcing conservation (Nez Perce Tribe, 2020).

Based on my own background research, as well as consultation with TNC Oregon, whose staff have been working in Wallowa County for nearly two decades, I offer the following typology of stakeholders and rightsholders in the region, referred to collectively as "user groups" (Table 1). This includes groups with both direct and indirect relationships to the ZPP and larger Zumwalt Prairie. Stakeholders and rightsholders may also be classified according to their particular use(s) of or relationship to the Zumwalt Prairie (Table 2). These groups are neither homogeneous nor mutually exclusive; they are likely

[2] The term rightsholder, rather than stakeholder, is used to refer to Indigenous groups with a connection to Wallowa County and the Zumwalt Prairie. This is in alignment with recent conventions in scholarship, which recognize the rights of dispossessed Indigenous peoples as unique from those of other interest groups, and with the most current internal language used by TNC.

also not exhaustive. However, these include categories which TNC has utilized in the past to discuss, conceptualize, and operationalize their work in the region, and I have also found them a useful starting point for collecting and organizing data.

Table 1. Stakeholder and rightsholder user groups with an interest in the Zumwalt Prairie.

| **User Group** | **Details** |
|---|---|
| Ranchers/Farmers | Landowners and land managers involved in livestock or crop production and exports |
| Environmental professionals | Employees of local conservation and/or environmental organizations; Employees of state and federal agencies with influence over land and resource management in the area (e.g., USFS, ODFW) |
| Homeowners or Landowners | Those who own property in Wallowa County, not necessarily ranchers or farmers; not necessarily residents in the county |
| Business owners | Those who own businesses in Wallowa County (e.g., service, production, financial) |
| Hunters | County residents or visitors who hunt on the Zumwalt Prairie |
| Recreationists (non-hunting) | County residents or visitors who participate in outdoor recreational activities on the Zumwalt Prairie (e.g., hiking, birdwatching) |
| Indigenous peoples | Rightsholders whose ancestral lands include the Zumwalt Prairie, whether or not they now live in the area; Specifically the Nez Perce and Confederated Tribes of the Umatilla Indian Reservation |
| Other residents | Any residents in Wallowa County who do not fit the categories above |

Table 2. Activities or relationships that may characterize individual connections to the Zumwalt Prairie.

| **Activity Type or Relationship** | **Details** |
|---|---|
| Economic/Practical | Paid work pertains to or occurs on the prairie; Natural resource based work; Business generates funding from the prairie (e.g., from tourism) |
| Recreational | Participation in any outdoor activities on the prairie (e.g., hunting, hiking, birdwatching) |
| Cultural | Ancestral lands; Participation in community events, or artist or writers retreats on the prairie |
| Geographic | Live or work in physical proximity to the prairie |
| Spiritual/Emotional | Personal attachment to and experiences with the prairie that evoke emotion or spiritual significance |
| Subsistence | Food or wood gathering; subsistence hunting or fishing |
| Stewardship | TNC volunteer or other individual practicing nature stewardship, restoration or other conservation |

Among stakeholders, rightsholders, and residents in Wallowa County, the question of values has received significant attention from TNC and partners in the past. An extensive report by Nielsen-Pincus and Force (2005) found that both absentee and local property owners value attributes such as landscape aesthetics, local character, presence of wildlife, opportunities for recreation, and social and community ties. Increased attachment to Wallowa County is associated with increased duration of one's residence there, whether or not that residence is full-time (Nielsen-Pincus & Force, 2005). During a values mapping exercise, aesthetic and recreational values were identified most often, cultural values least often, and others (biodiversity, development, economic, future, intrinsic, historic, learning, life sustaining, spiritual, subsistence, and therapeutic values) identified intermediately (Nielson-Pincus & Force, 2005). Although this study closely examined values of property owners across Wallowa County, it was not specifically focused on values pertaining to the Zumwalt Prairie, and may have limited applicability in terms of predicting or explaining conservation behavior. For example, the report shows mapped values concentrated around Joseph and Enterprise, with very few in the prairie itself (Figure 3). However, this information does set the wider social context within which conservation occurs.

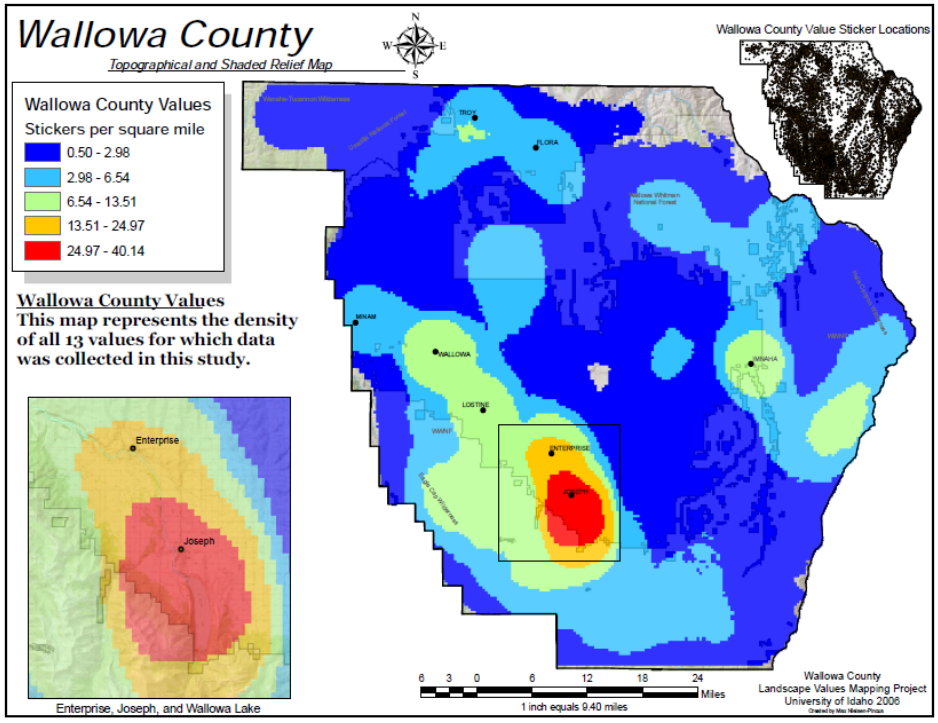


Figure 3. Composite Wallowa County values map from Nielsen-Pincus & Force (2005). This map comes from a community exercise in which participants were asked to place stickers on a map of Wallowa County in areas that held value to them. Dark blue areas received the fewest stickers and red areas the most, indicating highest perceived value in the red areas.

## Political context: Governance and discourse

TNC's community-engaged approach in Wallowa County has meant that local landowners (mainly ranchers) and other environmental organizations have been invited to share ideas, concerns, and suggestions through both formal and informal processes. Apparently, conservation decisions have been made with some degree of localized social consciousness on the part of TNC. However, there has been no transfer of power in terms of actual decision making. Management decisions for the ZPP remain fully in the hands of TNC staff, not local actors, and engagement is more at the level of consultation than collegiality (David-Chavez & Gavin, 2018). In addition to various user groups, TNC's

donors (i.e., public opinion) also wield some influence over conservation goalsetting, though they also do not possess decision making authority.

Though local TNC staff may translate some stakeholder or rightsholder ideas into action, they have reported that their options are ultimately constrained by the overarching mission of TNC North America. In other words, conservation activities cannot veer too far from organizational goals of nature/land conservation, though local managers have some space for experimentation and flexibility. Furthermore, TNC's local-level decisions must receive approval from the state office in Portland, OR, though only local managers are truly engaged with place-based circumstances. TNC is not at liberty to permit activities on its property which would be in violation of State, Federal or Tribal laws. For example, TNC has denied tribal hunting rights on the ZPP, allegedly because that activity would violate Oregon's rules regarding "open and unclaimed land" (key informant interview, September 2020) (Figure 4).

A patchwork of ownership in Wallowa County complicates decision making for the ZPP, and in many ways limits the potential for TNC to extend its influence beyond that physical boundary. Individual private landowners present a significant obstacle, as they are free to manage their land as they wish within the bounds of State, Tribal, and Federal regulations. Most ranchers who lease grazing land from TNC at the ZPP also lease from other private and public landowners, each of whom has unique conservation and practical requirements not necessarily in alignment with TNC's. Ranchers' grazing decisions for each lease vary according to those specifics (key informant interviews, October 2020). Furthermore, ranchers' home-ranch conservation behavior may be dependent on the

availability of funding for specific types of conservation projects; for example, United States Department of Agriculture (USDA) grants. At the same time, TNC's decisions and action potential are enhanced by synergistic collaborations with State, Federal, and Tribal agencies which own adjacent land, manage natural resources, and can obtain funding for joint conservation projects; for example, the Oregon Department of Fish and Wildlife (ODFW), the US Forest Service (USFS), USDA's Natural Resources Conservation Service (NRCS) (TNC 2010, 2012 & 2016a).

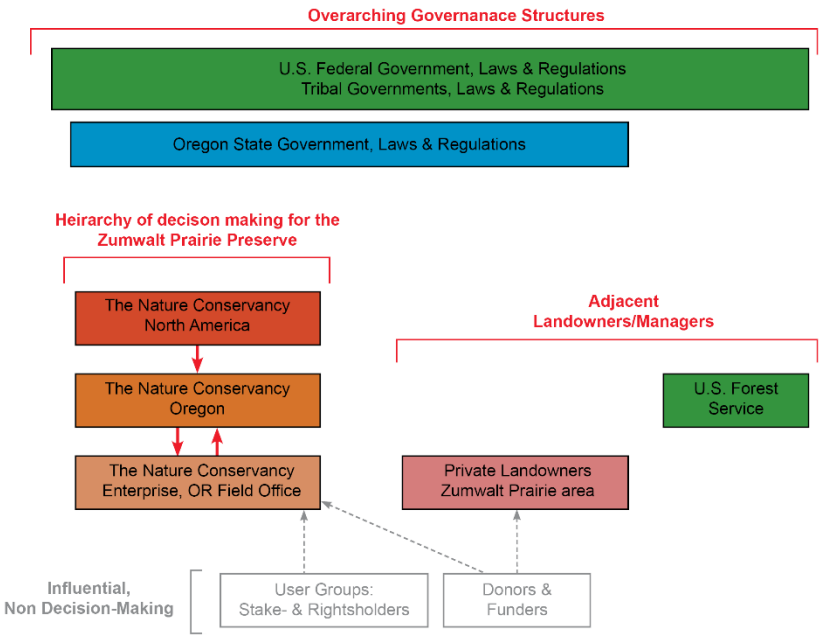


Figure 4. Governance structure around the Zumwalt Prairie Preserve and adjacent lands. Direction of arrows indicates the direction of influence on decision making.

Discourse and environmental attitudes in Wallowa County have been known to favor wise or sustainable use of working landscapes, rather than preservation or human exclusion. This mentality is apparent both among landowners and local environmental

organizations (Bishop, 2020; Ellyn, 2018; Wallowa Land Trust, 2015; Wallowa Resources, 2020). TNC staff and research participants have pointed to a general, localized dislike of the term "environmentalism" and the extreme restrictions that it suggests. However, there appears to be a strong conservation ethic and appreciation of natural resources present throughout the county, as well as a strong interest in stewardship (Nielsen-Pincus & Force, 2005; Wallowa Resources, 2020).

**TNC at Zumwalt: Conservation and engagement history**

TNC Oregon has been involved with the Zumwalt Prairie for two decades, expanding its landholdings, community engagement, and conservation activities over time. Early on it was determined that the area within the ZPP had always been and should remain a working landscape. As one TNC release put it, "This is a working landscape. It has been for generations. It's not as simple as saying, 'Just kick the cows off.' We don't have that option" (Smith, 2017:32). Rather than restricting grazing and human use completely, TNC's approach at the ZPP has been to allow limited and strategically managed grazing, integrating it as a tool toward conservation goals such as weed and fire management. This has been supported by an experimental and adaptive approach to conservation there. For example, TNC and partners such as Oregon State University have conducted experiments with cattle to better understand ecological outcomes of grazing-based management. The preserve has also remained open to the public for recreational purposes, and regulated hunting is allowed, also with conservation goals in mind.

Initial management plans for the ZPP were strictly ecological in their focus. Conservation goals were species-specific and included targets such as Spalding's catchfly,

grassland songbirds, Idaho fescue grasses, and sharp-tailed grouse (Shephard & Taylor, 2008 & TNC, 2010). Plans developed in the last few years reveal a shift from species-specific to landscape or systems-level conservation, indicating broad goals such as "define sustainable grazing and create market-based incentives…to influence sustainable use of grasslands across North America" (TNC, 2016a). TNC, both locally and nationally, is now operating under new Conservation by Design principles (TNC, 2016b), which explicitly position humans as part of the conservation equation and seek to engage human actors in the protection of natural resources. The current approach also reflects a more explicit emphasis on neoliberal conservation and market-based incentives than previous plans.

In the early days of TNC's ownership of the ZPP, local staff established the Preserve Advisory Board, a group of local actors (primarily land managers and environmental professionals) who met on a recurring basis to discuss management and conservation strategy. While the board no longer exists, TNC maintains a close working relationship with ranchers who lease grazing land on the ZPP, often involving them and their cattle in grazing experiments. The Enterprise field office employs a Rangeland Specialist, a local rancher with strong social ties, to bridge the gap between the TNC organization and the community. Community involvement in stewardship (restoration, "Adopt an Aspen" program, scientific research, seasonal caretaking) has varied over the years with the availability of funding and resources within TNC. Beyond engagement efforts directly targeting conservation of the ZPP, TNC has become embedded in the local community by voluntarily paying taxes, donating hunting tags to raise money for local businesses, hosting field trips and tours on the preserve, and sponsoring community events.

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## Chapter 5 Agency, Adaptive Capacity, and Environmentality in Place-Based Conservation: Rancher Perspectives from the Zumwalt Prairie

**Abstract:** Conservation practice has shifted toward a more human-centric and place-based approach in recent years. However, interactions with human agency have not been well studied, particularly with regard to a place-based conservation model. Agency determines the extent to which conservation organizations can advance normative environmental behavior; the ability and willingness of local resource users and managers to enact conservation; and the capacity for conservation work to improve socio-ecological resilience beyond isolated protected areas. This study examines three dimensions of agency relevant to conservation outcomes - personal agency, adaptive capacity, and behavioral change – from the perspective of ranchers on the Zumwalt Prairie Preserve. These individuals, who have been engaged in a place-based conservation approach by The Nature Conservancy Oregon, reflect on their experiences with the process, and effects on their environmental behavior, beliefs, and stability. Findings provide empirical insights for the emerging field of place-based conservation, with particular relevance for working lands conservation.

### 1. Introduction

Generations of ecologists and resource managers have struggled with the practice of conservation. Critical disagreements have persisted for decades, limiting ecologically effective and socially equitable solutions to pressing issues of resource and land degradation. These include debates on the meaning of nature and the role of humans in it

(Escobar, 1998); preservation versus wise use (Minteer & Miller, 2011); the value of local or traditional versus Western scientific knowledge (Ross, 2011); which people and activities are deemed admissible and who gets to decide (Adams & Hutton, 2007). Historically, the will of powerful conservation organizations wins out, as these groups possess the resources and capacity to dictate behavior within large landholdings including national parks, nature preserves, and protected areas (Theodori & Kyle, 2013). Over the years, tactics have shifted from fortress conservation to community-based models, vacillating between pure exclusion, sustainable use, and selective inclusivity (Vaccaro et al., 2013). Meanwhile, conservation practitioners have transitioned from strictly ecological to coupled social-ecological systems thinking, acknowledging the place of humans in ecological processes (Bennett et al., 2017). Today, there is broad consensus in the field that humans matter in conservation, both because they are directly affected by it, and because they can inhibit or meaningfully contribute to it (Bennett et al., 2017; TNC, 2016a).

The latest developments in conservation theory and practice are encapsulated by the burgeoning field of place-based conservation. Scholars in this area posit that conservation practice can be improved when organizations engage with situated actors, knowledge, interests, and social constructions (Stewart et al., 2013). This presents an opportunity for managing organizations to include local actors in conservation practice, possibly expanding conservation behavior beyond the boundaries of protected areas (Stewart et al., 2013). This is an important consideration, as conservation organizations alone cannot conceivably stem the tide of environmental degradation. Rather, they must seek to involve local actors, especially resource managers, in stewardship and

operationalize a conservation ethic more broadly (Pandey, 2002). Though place-based conservation is a theoretically feasible avenue toward this goal, its impacts have not yet been well studied in practice (Williams et al., 2013). Particularly, place-based resource managers possess agency which influences their conservation behavior and choices; yet, it is not clear how a place-based approach to conservation interacts with human agency, and to what effect.

This article offers a case study exploration of place-based conservation around the Zumwalt Prairie Preserve (ZPP) in eastern Oregon, United States (US). In this case, five local ranching operations have been extensively engaged by The Nature Conservancy (TNC), owners of the ZPP. Managers of the five operations are permitted to graze cattle on the preserve, and have been involved in management strategy development, knowledge sharing, and grazing experiments. By working with ranchers in this way, TNC hopes to expand conservation behavior beyond the ZPP, to ranchers' home properties and elsewhere in the larger Zumwalt Prairie landscape.

A qualitative study of rancher perceptions and reported behavior is discussed here, emphasizing outcomes of a place-based approach with a focus on actor agency. The following research questions will be addressed: (1) *What socio-ecological challenges do ranchers identify within the Zumwalt Prairie and ZPP?* (2) *How does engagement with/by TNC impact ranchers' personal agency, adaptive capacity, and conservation behavior?* Findings will help to fill an existing lacuna in place-based conservation scholarship by exploring practical dynamics within the framework of established theory. Though highly context-dependent, findings in this case reflect broader themes in place-based conservation

and human agency relationships that could emerge in other conservation contexts, particularly where working lands are concerned.

## 2. Conceptual Grounding

### 2.1 Place-based conservation

Conservation thinking and practice have undergone significant changes in the past four decades. Prior to the 1980s, the field was rooted in Western, natural scientific discourse, and relied upon positivist prescriptions and top-down management (Berkes, 2007; Berkes & Folke, 1998; Luke, 1999). Within this paradigm, conservation was considered an ecological issue disengaged from human factors. The shortcomings of this perspective are evident in case studies through history, whether that be ecosystem collapse (e.g., Finlayson & McCay, 1998), or egregious violations of human rights (e.g., Stevens, 2014). A corrective model, community-based conservation, was introduced in the 1980s and more explicitly accounted for the role of humans in ecological systems (Berkes, 2007). This has been particularly popular and well-studied in the Global South context. Adherents to the community-based paradigm argue that those likely to be impacted by conservation actions (i.e., local communities) should be considered in decision making. At least, conservation should advance community development in addition to ecological goals (Berkes, 2007; Western et al., 1994). Notably, this does not necessitate the involvement of local actors in conservation planning or decision making, but only that human outcomes be considered as part of the equation, thus allowing top-down control and expert dominance to persist (Western & Wright, 1994). Resource co-management has been offered as a more collaborative, co-productive, and empowering approach (Berkes, 2009).

Place-based conservation reflects the most recent transitions in conservation thinking. As a clearly articulated field, it has emerged over just the past several years (Stewart et al., 2013). While the concept is yet to be concretely defined, it has some distinguishing characteristics: application of spatial, multi-scale, complex systems thinking rather than simple resource modeling; preference for inclusivity and polycentric governance; and explicit emphasis on local knowledge, history, and sense of place (Williams et al., 2013). In some ways, place-based conservation appears as a continuation of community-based conservation, though a place-based approach directly asserts the need for community involvement in conservation activities from planning to implementation, focuses more directly on situated social factors, is more deeply rooted in social scientific thinking, and is better suited to a Global North context (Gillen, 2004; Williams et al., 2013). Only a handful of case studies currently exist which assess explicitly place-based initiatives (Brown & Weber, 2012; di Sciara et al., 2016; Edge & McAllister, 2009; Lejano & Ingram, 2007; McIntyre et al., 2008). None of these studies attempts to characterize underlying social dynamics relating to actor agency or behavioral change, which remain unknown.

## 2.2 Agency as a factor in conservation

Agency has been variably characterized by scholars across fields, most notably political ecology (Emirbayer & Mische, 1998). For purposes of this article, agency concerns aspects of power held by actor groups (Emirbayer & Mische, 1998; Svarstad et al., 2018). This includes power or capacity to act or not according to one's interests (Agrawal, 2005; Sinclair et al., 2017); to mitigate, adapt to, or recover from disturbances (Brown & Westaway, 2011); to make decisions for oneself about the future or to participate

in decision making processes (Emirbayer & Mische, 1998; Svarstad et al., 2018). Across interdisciplinary fields of environmental study, human agency has been linked to environmental behavior, self-determination, and vulnerability (Barrett et al., 2011; Deng et al., 2016; Enqvist et al., 2018; Pelletier, 2002; Sheng, 2019; Valizadeh et al., 2019). Human agency further concerns socio-ecological resilience, an ideal that is often the impetus for and desired outcome of conservation practice (Davidson, 2010; Sinclair et al., 2017).

Humans are expected to engage in sustainable or adaptive behavior to build resilience of themselves and of ecosystems on which they depend. However, all individuals possess agency which allows them to choose their actions (Davoudi et al., 2012); this may diverge from normative expectations of conservation best practices (Escobar, 1998; Svarstad et al., 2018). Furthermore, regardless of their interests, some individuals possess greater power and capacity to pursue their choices. The ability of conservation organizations to influence environmental behavior or instill a normative conservation ethic is directly tied to dynamics of human agency at an individual level, though its effects have been understudied in conservation and resilience literature to date (Sinclair et al., 2017). The following three facets of agency are particularly relevant to conservation outcomes.

### *2.2.1 Personal agency*

A most basic perspective on agency is its reflection of an individual's power to influence outcomes, either for oneself, or by participating meaningfully in decision making processes more broadly (Bifulco, 2013; Svarstad et al., 2018; Wehmeyer & Little, 2013). In terms of conservation, personal agency can first be understood as the availability of

choice regarding one's own behavior or property (Flint, 2013). Conservation organizations can regulate activities within protected areas but cannot force individual behavior beyond that; each adjacent property owner or land manager has some personal choice about what he/she will or will not do. This presents an obstacle for conservation organizations seeking to expand normative behavior beyond their own landholdings.

A second consideration is the extent to which individuals are empowered to make or influence decisions, in this case regarding conservation goals and strategies. In a place-based conservation model, local actors are meant to be included in decision making processes, invited to assist in the development and execution of conservation strategy, similar to an ideal resource co-management arrangement (Berkes, 2009; Flint, 2013). This approach theoretically increases individual agency by putting power in the hands of local actors, rather than leaving everything to conservation organizations.

*2.2.2 Adaptive capacity and stability*

This facet of agency is directly related to the concepts of socio-ecological resilience and vulnerability, and represents an individual's capacity to realize the actions and outcomes he/she desires (Brown & Westaway, 2011; Adger et al., 2004). It refers to the presence of financial, social, intellectual, or political capital needed to adapt to social, economic, or environmental disturbances and to survive or thrive in the long term (Adger, 2003; Walker & Salt, 2012). Regardless of an individual's intentions and personal agency, the absence of adaptive capacity limits the extent to which changes can be made. This means that even if conservation organizations are successful in promoting a normative conservation ethic, not all individuals will possess the capacity to act accordingly. Ideally,

a place-based conservation arrangement should build adaptive capacity among local communities as a means of furthering socio-ecological resilience (Stokowski, 2013). This may occur through financial or technical support, educational opportunities, or other mechanisms of resource sharing which help local actors to confront environmental challenges (Adger et al., 2004; Stokowski, 2013).

### *2.2.3 Environmentality and behavioral change*

Conventional wisdom tells us that humans act in accordance with their beliefs; beliefs which are formed through discourse, power/knowledge exchanges, and social norms (Agrawal, 2005; Hall, 2001). In his 2005 work titled *Environmentality,* Arun Agrawal presents a specifically environmental take on the Foucauldian concept of governmentality (Luke, 1995; Svarstad et al., 2018), the mechanism through which actors come to internalize "good" and "bad" behavior. In a case study of rural India, Agrawal found that action need not always follow belief. Rather, by engaging in normative environmental behavior and governance at the behest of powerful institutions, local actors came to internalize institutional discourse and adopt institutional perspectives to some extent (Agrawal, 2005). One caveat, however, is that actors adopted only the new beliefs and behaviors which aligned with their own interests. Through expression of their agency, actors may resist ideas and actions which do not serve them, regardless of their level of involvement in organized environmental management (Agrawal, 2005; Raik et al., 2008).

A challenge for conservation organizations wishing to expand their influence is to achieve broad internalization of a conservation ethic; to relate conservation goals to human interests such that local actors feel inclined to take up the cause. In place-based

conservation, organizations are meant to tailor approaches to situated contexts, interests, and social constructions, conceivably facilitating this process (Hall et al., 2013). Once again, this relationship has not been well studied in a practical context. It is not clear if, or to what extent, a place-based approach to conservation influences belief or behavior among land managers.

## 3. Case Study, Methods and Data

The Zumwalt Prairie is located in Wallowa County, a rural county in northeastern Oregon, population 7,004 in 2019 (US Census Bureau, 2019). At over a quarter million acres in size, it is among the largest intact grasslands of its kind worldwide. The prairie comprises a patchwork of private landholdings, including many working ranches. Within this larger landscape is the 33,000-acre Zumwalt Prairie Preserve, owned and managed by The Nature Conservancy Oregon for nearly two decades (Figure 1). Surrounding the prairie and preserve is the Wallowa-Whitman National Forest, managed by the US Forest Service. The prairie comprises several riparian environments on the Wallowa, Imnaha, and Snake Rivers, as well as smaller tributaries including Camp Creek and Big Sheep Creek. The majority of the Zumwalt Prairie is located within the Wallowa Valley, a low elevation area spanning much of the county. The ZPP is at a higher elevation and abuts mountainous Hells Canyon at its east side.

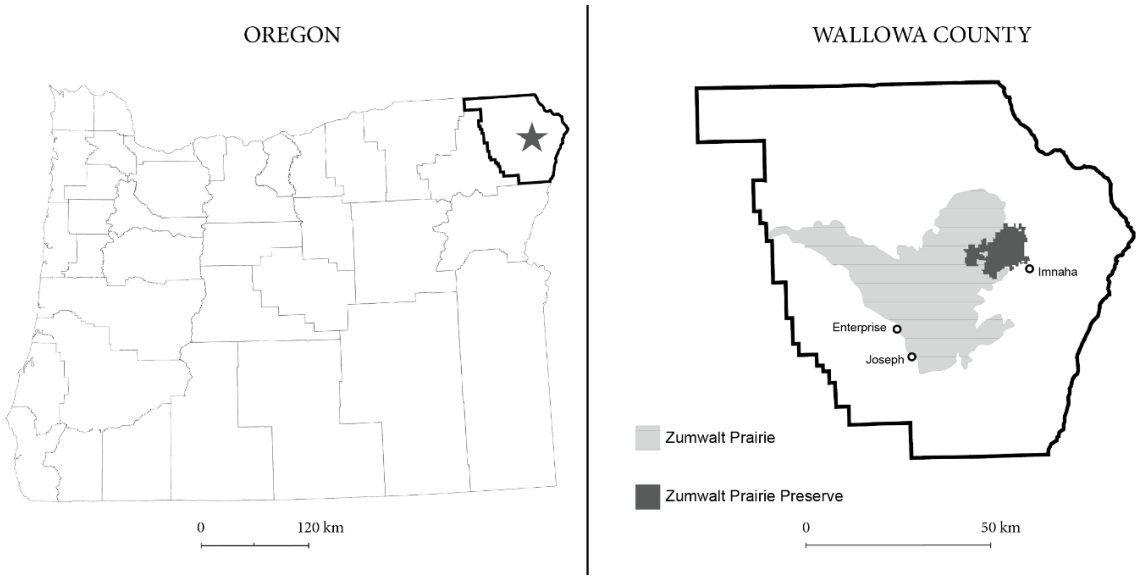


Figure 1. Map of Wallowa County, Oregon and detail view of the Zumwalt Prairie and Preserve.

TNC's work at the site targets ecological threats such as loss of native grasses, propagation of weeds, changes to the local fire regime, land conversion, and overgrazing (TNC, 2016b). Notably, the Conservancy has identified these problems as having human origins, consequences, and solutions, and has pursued a more integrated social-ecological approach in this region than is typical (TNC, 2016a). This initiative represents a case of place-based conservation, wherein TNC staff have been physically, socially, and economically embedded in the local community. ZPP managers live in the county, voluntarily pay taxes, sponsor social events, participate in educational outings, and engage in numerous other ways. Furthermore, staff have solicited considerable community involvement in the conservation process, and have managed the ZPP with sensitivity to context, rather than relying on the conventional command-and-control approach.

Cattle ranching is an essential component of Wallowa County's economic and cultural fabric. The Zumwalt Prairie has functioned as a working landscape for centuries,

and the prairie is most directly influenced by the activities of ranchland managers (TNC, 2010). As such, TNC's efforts in the area have skewed primarily toward local ranchers. They have been invited to participate in conservation strategy sessions from the start, having opportunities to share their visions, management strategies, goals, and concerns. The local TNC office employs a Rangeland Specialist - a rancher, social scientist, and long-time Wallowa County resident - as a bridge between the organization and the ranching community.

Five ranching operations are currently permitted to lease land within the ZPP and graze cattle there, maintaining the preserve as a working landscape in deference to local interests, though grazing intensity and schedules are regulated by TNC. Rancher lessees and their cattle participate in grazing experiments on the ZPP, through which TNC staff are attempting to tackle landscape-wide issues such as weed management. The lessees participate in periodic ZPP site visits and meetings to discuss management ideas and shifting needs with TNC staff. Some host tours of their home ranches for TNC donors, students, and other members of the public.

Conservancy staff hope that this unusually engaged approach will result in behavioral change and an extension of TNC's conservation ethic elsewhere within the larger Zumwalt Prairie, to ranchers' home properties or other grassland leases. Their work emphasizes not just ecological protection of the ZPP, but community-driven conservation across the entire Zumwalt Prairie landscape, achieved through wise use and stewardship where possible. It is anticipated that TNC's presence may promote social and economic health, building socio-ecological resilience to environmental change and degradation for

both the Zumwalt Prairie and Wallowa County residents. Although ranchers are not the only residents with whom TNC staff are concerned, they have been singled out for this study because of their unique position in the ZPP conservation model: ranchers have been most directly targeted by TNC for behavioral change.

## 3.1 Methods and data

Semi-structured interviews were conducted with ten local ranchers in Wallowa County. This included two owners/managers from each of the five ranching operations which graze cattle on the ZPP, representing 100% of lessee operations. Interviewees were four husband-wife ranching teams and one father-daughter team. Interviews were conducted in person, in Wallowa County throughout October 2020, and lasted from one to two hours each with follow-up via email. Interviewees were selected because, as ZPP lessees, they have been the most extensively engaged with/by TNC. They represent a distinct and accessible group, and all have experienced a similar degree of empowerment and inclusion in the conservation process. This makes them an ideal sample through which to explore outcomes associated with a place-based approach, particularly regarding actor agency.

All ranchers were questioned about their experiences working with TNC, thoughts about conservation generally, any recent changes in environmental thinking or behavior (attributable to TNC or independently conceived), environmental challenges, and feelings of vulnerability and stability. An interview guide (Appendix A) was used for consistency, though participants were invited to speak freely in accordance with a semi-structured format. All interviewees hold grazing leases for the ZPP, but also practice grazing on their

home and/or privately-owned properties; four of the five operations hold additional leases elsewhere throughout the Zumwalt Prairie. Responses to interview questions pertain variably to rancher experiences across these sites of activity.

Interviews were transcribed from audio recordings, manually coded, and analyzed according to the established research questions. As the most pertinent data points are direct responses to clear questions, extensive interpretation and coding were not necessary, somewhat reducing single coder bias on qualitative data. For example, when a participant was asked about new environmental behavior resulting from interactions with TNC, that response was manually coded as "behavioral change;" responses to questions regarding environmental threats and feelings of coping ability were coded as "challenges" and "adaptive capacity," respectively; and responses to questions regarding involvement or control in the conservation process were coded as "personal agency."

Rancher interview data were triangulated with researcher notes, recorded during field visits from April to September 2020; informal interviews of TNC staff; ZPP site management documents, dated 2003-2016; and meeting minutes of the now disbanded ZPP Advisory Board, dated 2001-2003. Interview responses were grouped according to four categories of analysis which correspond with the codes noted above, and illuminate relationships between place-based conservation and behavioral change, adaptive capacity, and personal agency (Table 1). The first category of analysis serves to identify rancher interests and resilience challenges which determine their environmental positionality. The latter three engage directly with identified facets of agency which are thought to influence personal conservation behavior.

Table 1. Categories of analysis used to interpret interview data, and the research question addressed by each.

| **Category of Analysis** | **Research Question or Component Addressed** |
|---|---|
| Identified socio-ecological challenges | Research Question #1 |
| Influence of TNC on ranchers' ability to cope with environmental challenges. | Research Question #2 – Adaptive Capacity |
| Self-reported, recent changes in environmental beliefs or behavior. | Research Question #2 – Behavioral Change |
| Feelings of empowerment in the conservation process. | Research Question #2 – Personal Agency |

## 4. Results

Key findings are detailed below, organized according to the categories of analysis noted in Table 1. Interview excerpts illustrate specific points and are attributed as *Ranching Operation (RO) 1-5* to maintain the anonymity of interviewees.

### 4.1 Identified socio-ecological challenges

#### *4.1.1 Invasive species and weed management*

Weed management was among the most reported challenges, noted as a primary issue for four of five ranching operations. Encroachment of non-native and invasive species is a top concern of TNC as well, as described by staff and ZPP site management documents. Besides representing an ecological threat to the ZPP, weed activity has become a growing problem for ranchlands across the Zumwalt Prairie and adjacent Imnaha Canyon.

> *"Imnaha River corridor is like a breeding ground for any non-native anything. So you just have to do your best to stay on top of it and try to control it as much as you can." [RO 4]*

> *"We bought this ranch in 2012, we didn't start mapping invasives until 2014. We have seen invasives increase since then, but they were here when we started." [RO 5]*

> Interviewer: Do you have a problem with invasives on your home ranch here?
> *"Oh yeah. It seems like it just gets worse all the time. There are areas that haven't been grazed in years where they're coming in." [RO 3]*

Those interviewed conceded that there is no clear solution or "silver bullet" for the problem of weed propagation. Different approaches have been tried, both by ranchers and TNC staff, particularly variations on grazing-based management and use of chemical sprays.

> *"Our management style that we embraced is kind of a green/brown sort of a thing. If you can graze the cheatgrass when it's green and the perennials when they're brown, that's a pretty sustainable ecological sort of way to approach both of those species of grass…. We've done a lot of chemical treatments. It seems like one of those things, you have to do something… They [TNC] tried to burn it for quite a few years and that didn't really seem to work.." [RO 2]*

> *"I like doing late-season grazing a lot harder than the spring, because it reduces the chance of non-native species coming in." [RO 4]*

None of these approaches has been shown to sustainably resolve the problem, and some attempts have caused additional damage. For example, interviewees from *RO 3* noted that early attempts by TNC to control weeds through grazing occurred to an extreme degree, ultimately degrading the condition of the land around Camp Creek.

Some are confident in their ability to work through the challenge, using trial-and-error methods, tracking important data, and adapting their operations as needed: *"We ran tests now for 4 years…we've tested nine different chemicals in test plots. We look and test all the time." [RO 5]* Still, most view the presence of invasive species as a long-term and unavoidable challenge: *"We'll figure out a way to live with it. You aren't gonna get rid of it." [RO 2]*

*4.1.2 People: Environmental regulations and misconceptions*

Alongside weed management, problems stemming from environmental groups and/or regulations were also cited by four of five ROs. These were variably identified as "*environmental legislation" [RO 1]*, *"extreme environmental group[s]" [RO 2]*, and *"the Forest Service" [RO 3 & 4].* In addition to their grazing leases on TNC's ZPP, multiple interviewees also lease adjacent land owned by the US Forest Service. Some expressed a feeling of precarity when faced with federal regulations which feel inappropriate and excessively punitive. Two ROs specifically identified regulations resulting from the Endangered Species Act (ESA), which are intended to protect salmon and steelhead trout but improperly attribute potential problems to the presence of cattle.

> *"I can look at I don't know how many different streambeds that are dry most of the year, or have water in them but haven't seen a fish in 30 or 40 years. But at the end of the day, we could still get our numbers cut if our cows utilize it too much, or have to move out of that pasture early, or have to build fence. It's really frustrating because the fish are never getting there. The cows have nothing to do with." [RO 4]*

> *"The ESA is being used as a club by people that aren't using it to save fish; they're using it to get cattle off the land." [RO 3]*

Others report that misconceptions among the general public have been problematic. As one rancher put it: *"There really is an urban/rural disconnect where they think we're just a bunch of land raping rednecks." [RO 1]* Such misconceptions have meant that *"cattle get scapegoated for everything that goes wrong."*

*4.1.3 Water*

Most interviewees indicated low concern over local water availability in the present: *"We're really fortunate here in Wallowa County, we've got a ton of water." [RO*

*2]* The valley floor is well irrigated by Wallowa Lake in Joseph, Oregon, and multiple rivers traverse the region. In the event of drought, ROs feel sufficiently prepared with a drought management plan or other backup system, such as a water truck. However, two interviewees expressed concern for the future, if water is not properly managed locally and in the surrounding American West.

> *"I've told these guys, in their lifetime, the water on irrigated ground, that water's gonna be more valuable than the crop that it raises." [RO 2]*

> *"I'm worried that we're gonna run out of fresh water on this planet. We were in California how many years ago, and the city of Sacramento was already out of fresh water. And we have it here, if we take care of it." [RO 5]*

Water quality has been a more present concern. Though it was not described as immediately threatening the stability of ROs (as was the case with both environmental regulations and weed management), most interviewees noted it as an area of personal interest and attention.

### *4.1.4 Land availability and conversion*

The availability of land for grazing is a significant determinant of ranchers' stability, the size of their operations, and the extent to which they graze what land they have.

> *"There's only so much ground available in the county, so it just gets tricky. You just gotta do the best you can in order to have a place to run a cow. As far as private ground, it's all leased. People come and go, leases change hands, there's opportunities but it's challenging." [RO 4]*

While some larger or more established managers feel they could adjust to the loss of a lease – for example, by slightly increasing grazing intensity on other allotments – others are more dependent upon what they currently have and possess fewer alternative choices.

Loss of prairie land more generally, through conversion or private, out-of-county ownership, is a concern shared by TNC and rancher lessees, who value the availability of working lands, low development, and open space.

> *"I just see so much good farmland being turned into residential areas. You can't grow anything on pavement and concrete." [RO 5]*

> *"I think encroaching development on our home property in the valley, and splitting up large parcels of rangeland into 160-320 acre parcels are most concerning. Being able to ranch and farm as we are accustomed to becomes more difficult when this happens. Complaints of dust, noise, odor and lights on equipment when working late at night by new neighbors are becoming common." [RO 1]*

> *"Probably the bigger issue is people coming from out of the county, out of the state, to buy up these ranches or property as an investment, that don't keep it as a working ranch." [RO 2]*

## 4.2 Effects of TNC on ranchers' adaptive capacity and stability (Adaptive capacity)

### *4.2.1 Learning from experiments*

Weed management and control of invasive species have been persistently problematic for both rancher lessees (on their home properties and elsewhere) and for TNC. The Conservancy, in partnership with local universities and other environmental groups, has put considerable effort into weed management experiments. Though no ideal solutions have yet been found, participating ranchers have been informed of outcomes, and hope to benefit in the long run from new information, tactics, and knowledge of what does and does not work.

> *"They [TNC] have gladly said 'let us be the research guineapigs as we try these things,' with the idea that it might not be the right thing, but let's be the ones to proof it. They're a good ally in trying to crack the nut on some of these things." [RO 2]*

### *4.2.2 Access to land*

Given the finite availability of grazing land in and around the Zumwalt Prairie, TNC has arguably increased the stability and resilience of the five RO lessees simply by providing one more option for a grazing lease. All those interviewed expressed gratitude at being able to utilize the land within the ZPP, and noted that the extra allotment has allowed them to ease grazing pressure at home and on other leased properties, contributing to greater environmental quality across the landscape.

On the other hand, some expressed concern that the land could be taken away based on the whims of TNC. Although the current local management and staff are supportive of a place-based and community-inclusive approach, this is not the norm within TNC as a whole. One interviewee worried that a change in staff could mean the end of the current arrangement. Others indicated a desire for longer lease terms and more certainty in the renewal process for ZPP land.

> "*One of the things I really don't like is [you only get a lease] for a couple of years at a time. We can't depend on it. We have to plan everything way in advance, and like we don't know right now if we're coming back next year." [RO 1]*

### *4.2.3 Support for small and local operations*

An apparent benefit of TNC's presence in Wallowa County has been support for smaller and newer ranching operations which may be less able to compete under normal circumstances.

> *"At the end of the days those big corporate type ranches will be able to pay more, and it's just the land owners' values whether the bottom dollar is what's most important to them, or if they're looking to help younger people get started and what their priorities are." [RO 4]*

TNC's presence also creates opportunities for ranchers to tackle problems more effectively. One ranching operation has partnered with TNC in the past to gain funding for conservation upgrades on and off the ZPP; a partnership that proved mutually beneficial.

> *"The more you can lump together, the better chance you have of getting these grants. And then if we can provide the seed money, they can provide the grant money. And if we're realistic we probably could do it all ourself, but what good does it do me to fix my little piece of the creek if they don't fix theirs? So it just makes more sense to work together." [RO 5]*

### *4.2.4 Providing firsthand experiences*

Several interviewees indicated a problem with social misconceptions, due to an urban/rural divide, "extreme environmentalism," or lack of understanding of what is occurring on the ground in working landscapes. However, many have found that personal experience can help to overcome anti-ranching bias, and reduce resistance to ranchers' use of prairie land. As part of their arrangement with TNC, the five lessee ROs periodically participate in tours and outings with TNC donors, visitors from urban areas, students, and other members of the public. Those who have participated reported a positive change in perspective when visitors were exposed to ranching practice firsthand, and those who have not yet participated view these experiences with optimism.

> *"It's more impactful when people from outside can see and experience what ranch life is like." [RO 1]*

> *"I would love to just take people and show them what we do, show them how we do it, show them how we care for the animals, care for the land and just explain, you*

*know, kinda how we do things. And I think people would be shocked to know oh, this is what ranchers do." [RO 4]*

Regarding TNC donors who question grazing on the ZPP: "*I say you know, livestock grazing gets the bad rap here, but those shrubs are 3 foot tall, and the cattle aren't eating them. And when they come out and see it firsthand, they see that most of that damage was actually done by elk, not by my cattle." [RO 5]*

4.3 Self-reported changes in environmental behavior or beliefs (Behavioral change)

As an organization, TNC has recently shifted toward a more human-oriented model, hoping to get people involved in nature conservation of their own volition. Accordingly, a primary question among those involved with the ZPP is whether engagement with TNC has led to new, off-site conservation behavior in the region. In this case, do ranchers associated with the five ROs attribute any new changes in environmental beliefs or behavior to their involvement with TNC? Has their involvement with TNC translated to new conservation behavior on their home ranches?

Regarding environmental beliefs, no one reported any major changes resulting from TNC's presence, though there appears to have been a shift in attitude toward conservation organizations. When TNC arrived in the county, many ranchers feared that the ZPP would be closed off and local interests would be ignored, which they had come to expect based on past experiences and accounts from elsewhere. By becoming so involved with the community, and maintaining the ZPP as a working landscape, local TNC staff were able to build trust and change some of those negative preconceptions.

*"I remember growing up [my dad] was like 'we're just never selling to the TNC cuz they're taking it over and they don't want cows,' and I think things have changed since then. I would love for it all to be in family ranches but that's not realistic anymore and TNC does a good job I think of still keeping those values." [RO 4]*

The ten ranchers interviewed all reported conservation projects which they have undertaken on their home properties. These include installing solar panels, upgrading irrigation systems, restoring riparian areas, planting to retain water in upland areas, planting native species, keeping cattle out of streambeds, attempting non-chemical methods of weed control, and rotating cattle to prevent overgrazing and land degradation. Furthermore, all expressed a strong inclination toward ecological stewardship through wise use, and an appreciation of the inherent value (economic, ecological, aesthetic, and cultural) of the Zumwalt Prairie. However, none attributed these beliefs or actions to their interactions with TNC. Rather, the impression is that these ranchers were already amenable to land stewardship and conservation-oriented behavior.

All five of the ROs investigated are part of multi-generational ranching families which have been around for decades, indicating that sustainable practices are ingrained in the family business.

> *"A lot of these families weed themselves out when they abuse their property…I think our over 100 years of being here is a testament that holistic management does work." [RO 1]*

> *"[Our] ranch has been in business for over 100 years now, so obviously we have to take care of the resource that we have in order to move it forward." [RO 2]*

Furthermore, because home ranches are privately owned, there was already considerable incentive to maintain that land for children and grandchildren, or as working land for others.

> *"I feel I have an obligation to use this land in the most ecologically friendly manner that still provides a living for my family. I hope to pass this land on in a better condition than when I was entrusted to its management." [RO 1]*

*"We'd love when we're older to pass this down to another working family, whether that's our kids or someone else if they're not interested." [RO 4]*

*"I always go back to the old saying that we don't really own property, we're just borrowing it from our grandchildren." [RO 3]*

Due to these contextual details, some of TNC's goals have dovetailed nicely with an existing environmental ethic, allowing easy integration of those goals with local interests and opening channels for mutual learning: *"[TNC staff] come and see our practices and we go look at their practices. We work together on a lot of projects." [RO 5]* Still, as foreshadowed by Agrawal's work on environmentality (2005), ranchers have only adopted those practices on their home ranches which suit their needs. They have not wholeheartedly embraced the conservation approach advocated by TNC and implemented on the ZPP.

4.4 Empowerment through the conservation process (Personal agency)

In some ways, TNC's work around the Zumwalt Prairie has had no impact on the personal agency of the ranchers who lease Conservancy land. Ranchers retain control and decision-making power for their private properties as they always have, and follow the guidelines imposed upon them within various leased allotments, including the ZPP. However, the influence of these ten individuals has arguably been elevated through TNC's community and rancher-centric approach to conservation. Although these individuals cannot directly make decisions for the ZPP – this is left in the hands of TNC staff – their input has been actively sought and is often acted upon, providing an unusual degree of influence in the process. Most interviewees reported feeling heard by local TNC staff, and believe that they operationalize rancher input to the best of their ability.

> *"I feel like they have a very open-door type atmosphere, like if you were to come to [local TNC staff] and say 'hey, I've got these ideas' or 'I've got these concerns' it feels like they listen; like that's welcomed…They're always willing to take our ideas into consideration and so I think we have a really good relationship that way. If we didn't think something worked very good last year they're always willing to change it around and make sure it works good for everybody." [RO 4]*

> *"I talk to him [ZPP manager] on the phone or go into the office and bend his ear every once in a while. And you think he's not listening to you, but man I'll tell you what, the next year everything that you talked to him about he does his best to make happen." [RO 3]*

One interviewee felt that rancher input had been solicited in the past only as a means of pacification, though this has changed in recent years as management of the ZPP has become more flexible.

Several respondents were keenly aware of and sensitive to TNC's difficult position, balancing local needs and perceived best practices against the wishes of donors; and of the limitations imposed upon the field office in Wallowa County by higher levels of the organization.

> *"There's still people that think there should be no cattle on the preserve out there. I'm sure they field complaints every year and have to deal with that end of it too. It's a balancing act for them." [RO 3]*

While acknowledging that the local TNC office has its own agenda, goals, and constraints, interviewees were generally satisfied with their personal level of involvement in conservation of the ZPP, and with the work TNC has done.

> *"We're one of the 5 lucky people that get to graze cattle there. So we really feel blessed to be on that landscape with our cattle…. I'd give TNC a very high grade on [community engagement efforts]. I can't imagine that TNC in other places is as community engaged as what they are here." [RO 3]*

## 5. Discussion

This study has identified human agency as a critical consideration in place-based conservation practice, examining three ways in which practice interacts with the agency of local human actors, to varying degrees of social or ecological benefit. Specifically, dimensions of personal agency, adaptive capacity, and behavioral change through environmentality have been examined from the perspective of ten ranchers on the ZPP. Ranchers reflected on personal environmental challenges, and the extent to which TNC's presence has affected their actions, thinking, and stability. Overall, findings support the idea that place-based conservation can be a favorable, mutually beneficial alternative to top-down conservation, though it is more beholden to the agency of local actors.

The socio-ecological context around the ZPP appears to have been particularly conducive to a successful place-based approach. Many land managers in the area, and all of those interviewed for this study, own properties on the Zumwalt Prairie and have a personal stake in sustaining them for economic, cultural, and familial reasons. Although individual approaches to conservation and stewardship may deviate from TNC's ideal prescriptions, all those interviewed are practicing conservation in their own ways and have been doing so for years. The ranchers' primary socio-ecological concerns correspond with TNC's, which has created an ideal opportunity for normative conservation goals to dovetail with local interests; for TNC staff and local ranchers to share information and capacity, and support each other in stewarding the Zumwalt Prairie.

While TNC's presence in Wallowa County has seemingly improved ranchers' adaptive capacity regarding select environmental threats, place-based conservation is not a

panacea. TNC is not able to help ranchers with the problem of environmental regulations imposed by the federal government, and local staff are limited in their ability to operate outside of TNC's organizational structure. Furthermore, TNC is not able to give all local ranchers the level of attention or access that the ten lessees have received. In spite of these limitations, all ten interviewees have been generally satisfied with TNC's work in Wallowa County, feel adequately included in their management of the ZPP, and are grateful for the opportunity to be engaged with the Conservancy to the extent that they are. They consider the ZPP conservation model to be a beneficial and empowering approach, particularly when compared to a preservationist model that the local community had feared. This indicates that a place-based approach can be an effective method for building trust and cooperation between a community and conservation organization.

Regarding environmentality, results indicate that TNC staff have not been fully able to advance their conservation agenda off of the ZPP (i.e., local actors did not come to internalize the TNC approach). TNC's presence around the ZPP has not influenced ranchers' conservation behavior or beliefs per se, though staff have facilitated conservation successes by building on existing points of common interest. Given the power of personal agency in this case, TNC staff should not expect broad adoption of their specific conservation goals or strategies off of the ZPP. Rather, it may be most effective to continue relationship building with local ranchers, coordinate varying approaches to conservation for maximum benefit, and encourage knowledge sharing and co-production which might bridge divides over time. Some degree of reciprocity and flexibility will be required in any arrangement where top-down control is not possible or desirable, as land managers have

their own interests and are unlikely to follow TNC's lead precisely. However, this does not preclude productive collaboration, negotiation, or behavioral change. For example, providing that adequate staff and resources are available, TNC might work more intensively with local ranchers to secure conservation easements, or to co-develop and support conservation management plans that work for home ranches.

From an ecological standpoint, this case raises some important questions about what conservation is, how it should be practiced, and what success looks like. Conventional, positivist thinking indicates that there is a correct way to practice conservation; that is, the normative approach advocated by scientific experts (Luke, 1999). Place-based conservation guides practitioners toward a social constructivist perspective, from which they must acknowledge that conservation ideals are relational (Stewart et al., 2013). All ranchers interviewed possess agency and practice conservation, or "stewardship" as some prefer to call it, though they are not all taking the same actions or prioritizing the same outcomes. The topic of agency becomes particularly important when conservation organizations decide whether to work with variability, or to force normative thinking. While the latter option might avert barriers associated with local actor agency (i.e., differences in land management preferences), it significantly decreases potential for managing organizations to affect conservation behavior beyond protected areas. It may be assumed that some ecological tradeoffs are required when place-based practitioners strive for social harmony and effective engagement with actor agency (McShane et al., 2011). In the case of the ZPP, practice has been flexible enough to encourage divergent conservation approaches, though the ecological effects of this are not fully known.

## 6. Conclusion

This study contributes to the largely theoretical field of place-based conservation, which is still emerging and lacking in empirical evidence. Lessons learned in this case may be of interest to those studying or implementing place-based conservation in other locations, particularly in working landscapes such as ranches, farms, or fisheries. Specific circumstances will differ, but the pertinent elements of agency are likely to play a role in any case. Further study is needed to understand interactions between place-based conservation practice and human agency in contexts which are less synergistic from the start. This includes the effects of place-based conservation on land managers who are not already practicing conservation; who have drastically divergent ecological goals compared to conservation organizations; or who do not have such a strong personal stake in property, for example, on public lands where a "tragedy of the commons" scenario (Hardin, 1968) is more likely. However, a place-based approach shows promise in building trust, cooperation, and community resilience through conservation practice.

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## Chapter 6 Sense of Place Two Ways: Cultivating and Operationalizing Conservation Values on the Zumwalt Prairie

**Abstract:** Conservation scientists increasingly recognize the role of humans in socio-ecological systems. Humans shape natural systems, are affected by environmental degradation, and can participate substantively in conservation efforts. While several complementary social factors have been well-studied in relation to conservation, sense of place is a field with untapped potential to advance complex conservation scholarship and practice. This study examines sense of place around one place-based conservation initiative, the Zumwalt Prairie Preserve in eastern Oregon, owned by The Nature Conservancy. Sense of place is assessed for two distinct user groups of the Zumwalt Prairie – visitors and ranchers – and is discussed for its potential contributions to individual conservation behavior both on and around the Preserve. Specifically, recommendations are made for how individuals' senses of place could be cultivated or operationalized around the Zumwalt Prairie, in pursuit of the Conservancy's broader goals. Findings contribute empirical evidence to scholarship regarding the relationship between sense of place and conservation action, and affirm theoretical assumptions that the two are positively related. Results are also discussed in terms of transferability to other conservation contexts.

### 1. Introduction

Contemporary environmental scholarship recognizes the role that humans play in shaping natural systems. In linked socio-ecological systems, humans affect and are affected by ecosystem function, availability of natural resources, and changes in environmental

quality, as through climate change or land degradation. Accordingly, conservation practice has increasingly embraced a recognition of human factors; for example, the notion that humans are impacted by ecological conservation, that humans may advance or limit organized conservation initiatives, and that conservation may enable coupled socio-ecological, rather than strictly ecological, resilience. In both the practice and scholarship of conservation science, wherein experts in the social and natural sciences have attempted to reconcile and operationalize the human impact on nature conservation, sense of place has been an overlooked point of consideration.

Sense of place, encompassing dimensions of place dependence, identity, and meaning, is theorized to positively inform environmental attitudes and behavior, potentially incentivizing public participation in conservation initiatives. It can also be understood as a critical component of socio-ecological resilience, as the loss of treasured places may produce psychological distress, in addition to social, cultural, or economic losses tied to place attachment. As human communities face environmental degradation and change, sense of place offers an untapped opportunity for practitioners to expand individual involvement in conservation initiatives, and to understand the feelings and values which underpin conservation behavior. While numerous empirical studies have explored the relationship between place connections (including meaning, identity, and dependence) and environmental attitudes, few have considered practical opportunities to operationalize sense of place for conservation behavior. Furthermore, existing studies tend toward recreational conservation contexts, rather than working or residential landscapes, though these likely feature varying degrees of complexity.

The present case concerns sense of place and its relationship to conservation behavior around the Zumwalt Prairie and Zumwalt Prairie Preserve (ZPP) in eastern Oregon, United States, the latter of which is owned and managed by The Nature Conservancy (TNC). The purpose of this study is to elucidate dimensions of sense of place held by two distinct user groups of the prairie and preserve: visitors and ranchers. An analysis of creative writing pieces, in-person interviews, and online questionnaires is employed to answer the question, *How do different user groups express a sense of place around Zumwalt Prairie?* Findings are then discussed regarding their potential use by TNC's conservation practitioners, addressing the following: *How could sense of place be cultivated or operationalized to improve conservation outcomes?* Results are discussed in terms of direct relevance to the study site, and contribute more generally to scholarship connecting sense of place to conservation behavior.

## 2. Conceptual Grounding

### 2.1 Place and conservation

Place is a central component of human geography, encompassing physical spaces, sensual experiences, social constructions, and psychological perceptions (Cresswell, 2015; Massey, 1991; Harvey, 1996; Relph, 1976; Pred, 1984; Tuan, 1990). As the field of conservation science has become more attuned to social scientific perspectives, considerations of place have begun to emerge in scholarship and practice. Sporadic references to place can be found across articles on natural resource planning (Kruger et al., 2008), adaptive ecosystem management (Bott et al., 2003), and neoliberal conservation (Roth & Dressler, 2012), to name a few, signaling a breadth of applications in recent years.

The sub-field of place-based conservation marks an emergent turn in conservation thinking which is, as the name implies, deeply rooted in details of place, and synthesizes some of these varying applications (Stewart et al., 2013). Unlike previous conservation models, the place-based approach draws heavily on social scientific, especially human geographic, scholarship, incorporating such components as lived experience (Barkley & Kruger, 2013), place meanings (Amsden et al., 2013), place representations (Hall et al., 2013), local knowledge (Williams, 2013), and cultural mapping (Watson et al., 2013). The field holds great promise for locally relevant conservation, though to date, place-based conservation theories have not been well studied or applied in practice (Stewart et al., 2013).

## 2.2 Sense of place

Sense of place is one component of place as a larger field of inquiry, emphasizing the meanings and attachments that humans form around various settings (Tuan, 1977). Within an environmental context, sense of place is often noted for its influence on attitudes or beliefs, formed through both individual and collective perceptions of the natural environment (Tuan, 1990). Though scholars vary in their conceptualizations, sense of place is widely thought to encompass two distinct parameters: place meaning and place attachment, the latter of which comprises place identity and dependence (Masterson et al., 2017; Stedman, 2008).

Place meanings are subjective interpretations of what or how a place is, and reflect the images or associations that a place elicits (Brehm et al., 2013; Jacquet & Stedman, 2013; Manzo, 2005; Masterson et al., 2017). Meaning is often expressed in descriptive terms (e.g., safe, scary, beautiful, chaotic), but can also refer to symbolic meanings (e.g.,

home, refuge, paradise), or place types or characters (e.g., ranch, natural area, pre-colonial, post-industrial) (Lyon, 2014; Masterson et al., 2017). Attachment reflects a more emotional and evaluative relationship, through which humans ascribe value or importance to their places (Altman & Low, 1992; Masterson et al., 2017). This includes dependence, or the degree to which a place meets a person's needs (Stokols & Shumaker, 1981), as well as identity, which reflects personal identification with and through place (Proshansky, 1978).

### 2.3 Sense of place in conservation

Sense of place has been identified as a crucial component of place-based conservation (Williams et al., 2013). It is particularly relevant due to its complementary relationship with socio-ecological resilience, a common target of nature conservation (see for example Audubon Society, 2018; Benson & Garmestani, 2011; Brown & Williams, 2015; Olsson et al., 2004; Sierra Club, 2019; The Nature Conservancy, 2016a). The link between sense of place and socio-ecological resilience studies has only recently been acknowledged (Masterson et al., 2017). For some, sense of place is a kind of ecosystem service, which provides spiritual, cultural, or aesthetic fulfillment (Andersson et al., 2015). Reflections on environmental grief, or "solastalgia," and emotional attachment to place add to a growing list of social harms posed by climate change, land degradation, and resource loss (Albrecht et al., 2007).

On a more hopeful note, sense of place is increasingly recognized as a strong determinate of environmental values which might motivate ecological stewardship or conservation, thus enhancing socio-ecological resilience through ecologically protective behavior (Andersson et al., 2015; Enqvist et al., 2018; Kibler et al., 2018; Masterson et al.,

2017). While attempts at community-based nature stewardship can be maladaptive or counterproductive (Chapin & Knapp, 2015; Hausmann et al., 2016), the cultivation of a strong conservation ethic within society is recognized as a necessary precursor to adaptive and sustainable environmental behavior (Leopold, 1933; Van Houten, 2006). Additionally, it is theorized that knowledge of situated senses of place may assist conservation managers in developing appropriate strategies, building upon an existing conservation ethic, and reducing conflict (Kibler et al., 2018; Larson et al., 2013; Theodori & Kyle, 2013; Yung et al., 2003).

Though this theoretical link between sense of place, pro-environmental behavior (specifically, stewardship and/or conservation), and socio-ecological resilience has been articulated (Enqvist et al., 2018; Masterson et al., 2017), case study literature is narrower in its focus. Case studies in this field often approach place meaning or attachment in isolation (Brehm et al., 2013; Masterson et al., 2017), and typically relate them to environmental beliefs, attitudes, or values, with minimal discussion of behavior or action (Brehm et al., 2013; Kyle et al., 2004; Larson et al., 2013). Though attachment has received greater attention than meaning in past case studies, both facets should be considered in research pertaining to environmental behavior (Stedman, 2008). Place attachment alone may be insufficient to motivate protective environmental behavior, particularly where interacting place meanings are negative (Raymond et al., 2011; Stedman, 2008). On the other hand, a positive place meaning may generate protective behavior even in the absence of personal place attachment, as with non-specific nature lovers or enthusiasts drawn to charismatic landscapes (Williams & Stewart, 1998). Furthermore, studies largely

emphasize environmental attitudes in recreational or leisure settings, wherein place meaning may be sufficiently explicative of conservation values (Davenport & Anderson, 2005; Kyle et al., 2004; Kibler et al., 2018). However, residential or working landscapes necessitate a more complex exploration of place attachment (Masterson et al., 2017; Raymond et al, 2011).

Within conservation practice the question remains, if pro-environmental values are present, how can they be identified and activated? There is potential for conservation practitioners to tap into sense of place in order both to cultivate pro-conservation values among communities or resource users, and to operationalize existing place attachments for desired behavioral outcomes (Stokowski, 2002). There is precedent for utilizing sense of place in this way, as detailed in a study by Bell & York (2010). In this case, coal industry representatives in rural West Virginia systematically built a place identity rooted in coal culture, integrating their industry into the physical and social landscape, and emphasizing local attachments to the industry for everything from jobs to recreation. Notably, the realized intention was to sway public opinion in favor of the coal industry and away from environmental regulations, despite clear social and ecological harm posed by the industry's activities (Bell & York, 2010). While the tactics used in this case are ethically questionable, results affirm the power of sense of place to broadly define or change environmental perceptions. Such an approach may be similarly employed by conservation practitioners, though ideally for initiatives which support situated socio-ecological resilience and community well-being. Indeed, within some place-based conservation initiatives (for example, the one under consideration in this study), managing organizations already

maintain a physical, economic, or visual presence in communities. Yet, there has been limited exploration of how practitioners can transparently work to produce, illuminate, and activate localized senses of place which support conservation success in these settings.

## 3. Case Study, Methods and Data

The Zumwalt Prairie is a working grassland in Wallowa County, Oregon (Figure 1). The majority of this 300,00-acre landscape is managed by a patchwork of private landowners, many of whom utilize their properties for cattle grazing. In addition to its strong ranching economy, the area is known for abundant natural assets, including mountains, canyons, and rivers as well as the Zumwalt Prairie itself. The Zumwalt Prairie Preserve (ZPP), a 33,000-acre conservation site located at the eastern edge of the Zumwalt Prairie, is owned and operated by TNC, an international conservation organization.

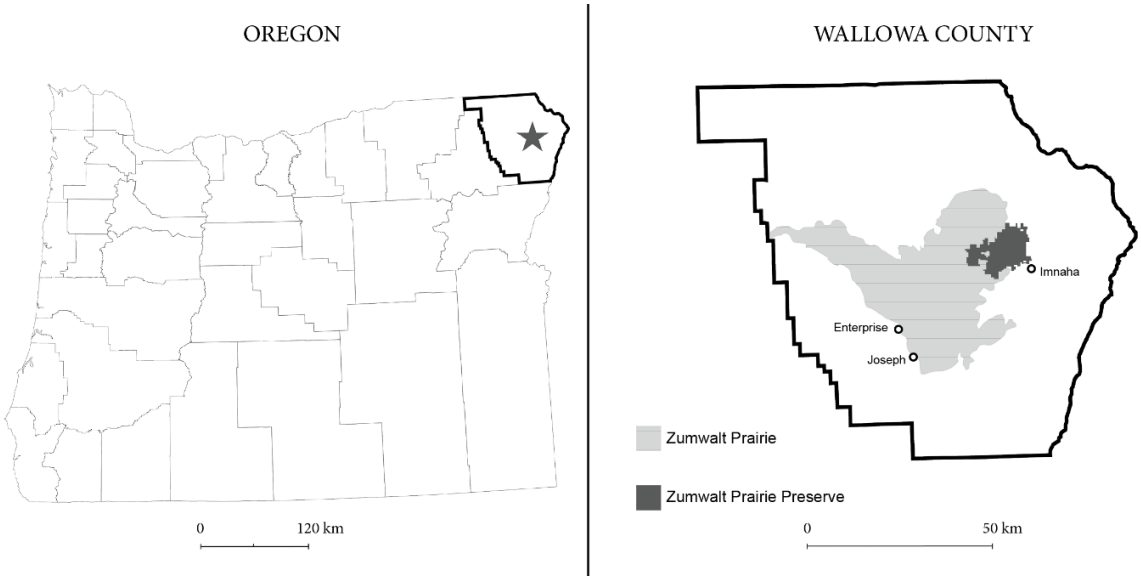


Figure 1. Map of Wallowa County, Oregon and detail view of the Zumwalt Prairie and Preserve.

TNC staff have been active in Wallowa County for two decades, and have employed a uniquely place-based approach in their conservation efforts around the ZPP. This has involved extensive community engagement, particularly with local ranchers who have been invited to participate in strategy development for the site; limited cattle grazing is also allowed on the preserve. Additionally, the preserve is open to the public for recreational uses including hiking, wildlife viewing, and hunting (with restrictions). The Conservancy regularly partners with school groups and local non-profits to host educational outings and creative retreats on the ZPP. TNC staff hope to spread their influence across the entire Zumwalt Prairie landscape, particularly by encouraging ZPP-adjacent landowners to adjust their environmental behavior in alignment with TNC's perception of conservation (i.e., to practice sustainable grazing). However, attempts to influence or alter conservation behavior beyond the ZPP have not been entirely successful (see Chapter 5).

This study deployed multiple methods to elucidate germane senses of place among ZPP visitors and ranchers, addressing the question, *How do different user groups express a sense of place around Zumwalt Prairie?* Visitors are those individuals who visit the ZPP mainly for recreational opportunities, and may or may not live in Wallowa County. While members of this group do not have a direct or significant influence on environmental conditions of the Zumwalt Prairie or ZPP, they may still contribute to conservation success; for example, by supporting TNC's work through donations or volunteer labor, or by spreading a pro-conservation ethic among family and friends (social learning). Therefore, TNC staff should have some interest in understanding what these individuals appreciate

about the ZPP, allowing them to leverage place meanings which may translate to care or stewardship. In contrast, ranchers primarily live and work on the Zumwalt Prairie, though they may also utilize the preserve for recreational purposes, and have a disproportionate influence on ecological quality of the landscape. TNC has a stated interest is affecting the environmental behavior of this group, though staff do not fully understand the value drivers that inform individual ranchers' conservation choices, or how to operationalize them (TNC, 2016b). Datasets for these two groups were collected and analyzed independently of each other, using distinct methods, and will be presented and discussed separately in subsequent sections.

### 3.1 Content analysis: Visitors

TNC staff in Enterprise, Oregon partner annually with a local non-profit, Fishtrap, to host the Outpost Workshop on the ZPP. Outpost is a creative retreat which takes a small group of writers, most of whom do not live in Wallowa County, to the ZPP for "five days of writing instruction, nature study, camping, and sharing" (Fishtrap, 2021). These outings are specifically intended to cultivate a sense of place and to encourage a "true writing of place" (Fishtrap, 2021) inspired by the natural landscape of the ZPP. For some writers in the series, Outpost is their first experience with either the Zumwalt Prairie or ZPP, and their first opportunity to develop a sense of that place. Each year, the creative writing outputs of Outpost participants are collected and published by Fishtrap.

For this study, Outpost publications from the years 2013, 2014, 2015, 2017 and 2019 were obtained by the researcher and subjected to a content analysis. These included 90 poems, letters, and short stories. The vast majority of pieces (88%) refer directly to

experiences on or features of the ZPP, while others reflect personal stories or associations evoked by the setting. Documents were first read as a whole in order to establish a baseline understanding of content topics. Written pieces were then broken into smaller meaning units of text (one phrase, line, stanza, or sentence each), and descriptively coded manually with topic statements (Erlingsson & Brysiewicz, 2017; Saldana, 2009); for example, "ground squirrel" was coded as *animal*. This process was repeated multiple times to ensure accurate application of emergent topic codes to all documents. Topic codes were then considered holistically to generate categories and sub-categories of meaning (Erlingsson & Brysiewicz, 2017). The analysis of Outpost creative writing documents yielded eight major categories of meaning, as well as 29 sub-categories based on an amalgamation of descriptive topic codes. The parent categories, sub-categories, and samples of coded text associated with each are documented in Table 1. These were organized into a web of place meaning (Davenport & Anderson, 2005), revealing how Outpost visitors perceived the ZPP, what it meant and what kind of place it was to them, and connections across categories.

Table 1. Categories, sub-categories, and sample coded text used in content analysis.

| **Category** | **Sub-Category** | **Sample Coded Text** |
|---|---|---|
| Nature | Animals | *Belding's ground squirrel; cliff swallows; butterflies* |
| | Plants | *bunchgrass; fescue; yarrow; Indian paintbrush* |
| | Landscape | *hills; Camp Creek; basalt lava; canyon; butte; mountains* |
| Space | Sky | *clouds smeared across the sky; fairweather clouds; blue dome* |
| | Open, Vast | *her view is vast; the wide open of the prairie; forever grassland; the distance and scale of this place* |
| | Empty | *an empty palate of Open; so few trees; staring into all the emptiness* |
| | Isolation, Solitude | *the solitude; I am alone; solitude at the end of the road* |

| | | |
|---|---|---|
| Soothing | Freedom, Escape | *I can breathe; I'm free, free as I've ever been in my life* |
| | Healing, Letting go | *the healing; the courage to let go; I feel like I've cleaned a deep wound, left behind a great weight* |
| | Renewal, Transformation | *scrape and shed worn out layers; relief and renewal* |
| Enigmatic | Mystery, Hidden things | *always been a mystery to me; secret spots; unknown history; must be something unseen* |
| | Religious, Spiritual, Sacred | *sacred pine; evening prayer; cerulean blue Elysium; visions of a religious experience* |
| Learning & Discovery | Finding Oneself, Self reflection | *be here as you are; what did I do so wrong?; this is who and where I find myself to be* |
| | Discovery in nature | *quiet discoveries; now I know what Timothy grass is; soon discover a lush canyon* |
| | Ecology | *reference book on mammas; the correct names* |
| Connection to the Past | Home | *at home; childhood Portland home* |
| | Family | *my father; great grandmother; uncle* |
| | Memory | *memory flash; reminds me how as a child* |
| | Story | *this landscape is part of the story; healing stories* |
| | History | *ancient knowledge; old homestead; Indigenous history; past dwellers* |
| | Geology | *geologic explanations; Miocene lava dikes* |
| The Elements | Weather | *wind; lighting; storm; blizzard; rain* |
| | Exposure, Vulnerability | *heat on my face; get off the ridge when the clouds turn dark; expose my whole tender leathery sole* |
| Multi-Sensory Experience | Seeing | *darkness rolls in; lavender sky; grass covered hills meet the horizon; small bird's L-shaped flight* |
| | Hearing | *thunderclaps woke me; yipping and squealing; sparrows sing* |
| | Touching/Feeling | *sharp rocks, each impaling; a tickle on my ears; it's hot* |
| | Smelling | *vanilla scent; delicate aromas; rain releasing earth's scents anew* |
| | Tasting | *it doesn't taste like much to me; a crunch like celery* |
| | Interacting | *we scattered into the grass; barefoot run; climb up Harsin Butte* |

3.2 Interviews and questionnaires: Ranchers

Fourteen local ranchers, identified through convenience sampling, were interviewed both in-person and via an online, open-ended questionnaire from September through October 2020. While semi-structured, in-person interviews covered a range of topics beyond sense of place (as part of a larger study), only components germane to this analysis will be reported here. Online questionnaires were specifically intended to elucidate

qualitative details pertaining to the respondents' sense of place around the Zumwalt Prairie. In both cases, questions were designed to go beyond the dimension of place meaning, to account for elements of place attachment including identity and dependence. These facets offer a level of complexity suitable for the land users included in this sample, many of whom are part of multi-generational ranching families in the area. Notes and transcripts from in-person interviews with eleven individuals, as well as three typed responses to the online questionnaire were divided into meaning units of words, phrases, or sentences and manually coded according to pre-determined categories of place meaning, dependence, and identity. These included explicit or implicit references to dependence (e.g., livelihood or income) or identity (e.g., family history, culture) which were coded accordingly (*dependence* or *identity*), as well as descriptive or character statements (e.g., home, ranch, beautiful) which were coded as *meaning*. Any references to motivators of behavior or value drivers were coded as *values*, and linked to dependence, identity, or meaning based on context (Figure 2). Notable findings are synthesized in the subsequent Results section and illustrated with selected quotes. This analysis reveals existing dimensions of place meaning and attachment held by local ranchers, which might be operationalized by TNC in pursuit of conservation behavior.

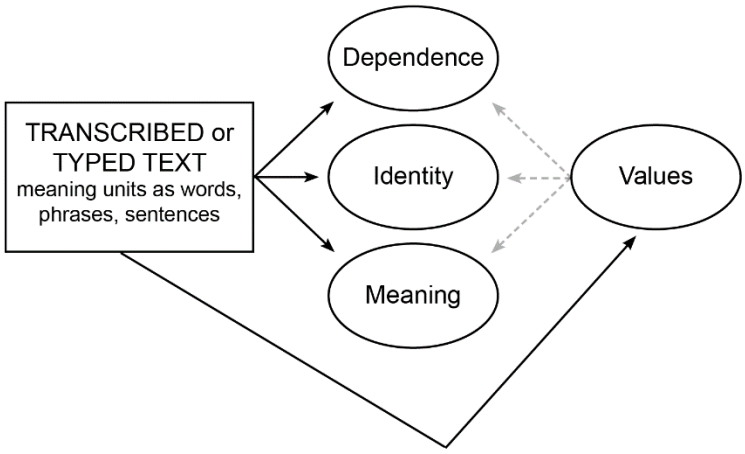


Figure 2. Diagram of the coding process for rancher interviews and online questionnaires.

## 4. Results

### 4.1 Outpost content analysis

Relationships between code categories and sub-categories are reflected in Figure 3, the web of meaning diagram (see Appendix B for complete codebook used in content analysis). Place meanings included here take various forms, including descriptive terms (e.g., enigmatic, soothing, open), symbolic meanings (e.g., freedom, renewal, solitude), and place type or character (e.g., a place for learning, a sacred plan, a place full of history). Quantification of results will not be included here, as the purpose of this analysis is primarily to establish a breadth of qualitative meaning data (Davenport & Anderson, 2005).

Overwhelmingly, Outpost writers invoked physical, sensible qualities of the Zumwalt Prairie in their writings. It is clear that the prairie was understood foremost as a place of nature, describable according to its many landscape features (buttes, hills, grasslands, canyons, mountains, rivers, boulders), landmarks (Harsin Butte, Camp Creek, Buckhorn Overlook), flora (bunchgrasses, wildflowers, aspen trees) and fauna (ground squirrels, coyotes, elk, wolves, badgers, songbirds, hawks). The sky, clouds, sun and moon,

wind, weather, and natural elements were also described at length. In all cases, writers employed a colorful range of descriptive terms to convey the sights, sounds, and textures of the prairie; for example, *intense, blue expanse, boundless, uninterrupted, thirsty-bright, raucous, heavenly, sun-scorched, gone-wild, rolling and ebbing, rich filth.*

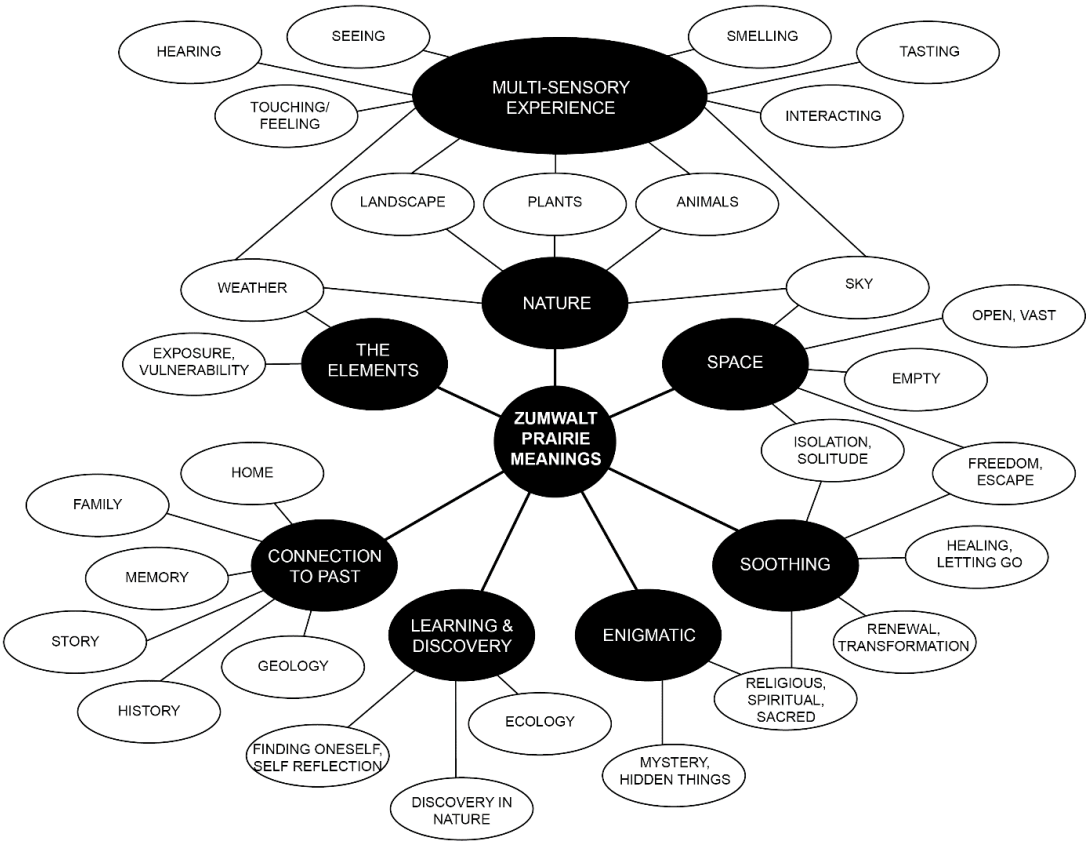


Figure 3. Web of place meanings for the Zumwalt Prairie, derived from Outpost creative writings.

Copious references to seeing, hearing, touching, feeling, smelling and tasting these elements of nature affirm the power of physical experience in that place. Furthermore, writers made frequent references not only to sensing these natural entities, but to interacting with them; for example, hiking on hills, swimming in the river, crunching dry grass, disturbing, encountering, or having imaginary conservations with animals, running barefoot over the rocks, and exposing themselves to the elements, which included risk of storms, prairie fire, sunburn, and heat. This suggests a primary theme and overarching category of meaning: Zumwalt Prairie as a multi-sensory experience of nature, including land, sky, weather, flora, fauna, and physical space.

Space on the Zumwalt Prairie itself emerged as a central component of place meaning. Physically, it is a wide open, vast, seemingly endless stretch of land, scarcely interrupted by trees, boulders, or other vertical features. Mirroring the vastness of the land is an expansive "dome" of sky, either clear blue or scattered with massive, dynamic clouds. These physical qualities were often connected to more interpretive meanings of solitude and isolation, as well as exposure and vulnerability, particularly to the powerful prairie sun or incoming storms (the Elements).

In addition to finding it a natural and sensorily-stimulating place, Outpost visitors further identified the Zumwalt Prairie according to some less tangible descriptors, articulated by the researcher as Soothing, and Enigmatic. The setting invited a physical and psychological escape from daily life, technology, and personal struggles, a chance for renewal and rejuvenation, and a space for healing. For some, the prairie was a place of mystery, of hidden and mythical things which cannot be fully known or described. For

others, the place evoked spiritual or religious connections. References to god(s), prayer, heaven, shamans, and sacred entities were noted during the coding process. Accordingly, the Zumwalt Prairie also represented a place for Learning and Discovery. This included opportunities for self-discovery and reflection, facilitated by solitude and escape, as well as for discovery through firsthand exploration of nature. Proper ecological learning, particularly of scientific plant and animal names, as well as species behavior, were also noted as either resulting from writers' time in Outpost, or from personal research conducted after the visit.

Somewhat distinctly from the meanings of Nature, Space, the Elements, and all sub-categorical meanings stemming from them, the Zumwalt Prairie was identified as a place that connected visitors to the past. For many writers, this manifested as a connection to their personal past, with the prairie environment surfacing memories of childhood, family, one's old home, or formative experiences in other natural settings. Conversely, the setting also created connections to a much deeper, impersonal past, which includes a history of Nez Perce Indigenous presence, Euro-American settlement and homesteading, harsh winters and failed agricultural endeavors, and a geological landscape formed over millennia. There was reportedly a sense of oldness, ancientness, and the passing of time present in the landscape, which was connected by writers with references to ancestors, ghosts, stories, physical landscape change, and the past in general.

## 4.2 Rancher interviews

### *4.2.1 Place dependence*

Among those interviewed for this study, the issue of place dependence is straightforward. All participants graze livestock on the Zumwalt Prairie (either on the ZPP, or on other privately owned parcels across the landscape) and depend on that grassland ecosystem for their livelihood, at least in part. In the case of the Zumwalt Prairie, ranchers depend on the availability of a finite amount of grass for their operations, and recognize the importance of keeping that limited resource in good health: *"You rely on every blade of grass you can get."*

Economic dependence – the extent to which one's ranching practice on the Zumwalt can generate a livable income and provide for necessities – is a significant factor affecting conservation interest. However, most respondents affirmed that their environmental behaviors, including decisions to practice stewardship or conservation, were not strictly driven by economic motives. On the contrary, economic outcomes were low on the list for some, in terms of values which led them to favor conservation of the Zumwalt Prairie. Still, it was acknowledged that economic success was something of a prerequisite to realizing conservation goals, as it provided ranchers with the necessary resources to make conservation upgrades or alter their practices, while also making a living.

> *"In my opinion that economic part is pretty far down the list. There's a lot of other things that motivate us a lot more than if financially it's most rewarding. That being said, the money thing has to work out, at some level. You can't always subsidize it."*

> *"So I'll say in our case it's not all economic. We have some ability to make improvements that are not always gonna give us a dollar back. We have some resources so we do stuff."*

*"I feel I have an obligation to use this land in the most ecologically friendly manner that still provides a living for my family."*

*4.2.2 Place identity*

Most study participants are members of multi-generational ranching families which have worked the Zumwalt Prairie for years. Even those who arrived more recently have developed a sense of attachment during their own time on the prairie. Accordingly, there is a strong identity association with ranching and livestock management there.

*"When people think of this place they think cattle country. We want to continue this way of life. It's very hard work but it's worth it to maintain that identity."*

*"Having run cows on the Zumwalt for 37 years, I feel somewhat like a native."*

However, study participants identified themselves not just as users of or ranchers on the Zumwalt Prairie, but as its caretakers.

*"We are very proud of our association with the prairie and it has become a part of our identity. We have had a number of groups on the ranch to tell our story of stewardship."*

*"What's the saying, that ranchers are actually the true environmentalists? They're the ones that are on the land, you know, caretaking for it."*

*"I've been in the livestock business, my family has forever, and I, we, my family and most other ranchers feel like we are stewards of the land."*

A desire for continuity in familial ranching identity - particularly to pass on the working landscape in good condition for future generations - was a frequently identified environmental value and motivator of conservation behavior. The prairie reflects familial identity both in stories from generations past, and in the hope for the future.

*"So we'd love to help in whatever ways to keep things working lands. And we'd love when we're older to pass this down to another working family, whether that's our kids or someone else."*

*"We're a century farm. I'd like to see it still be a farm and a ranch 100 years from now."*

*"Their kids are with them, they're out doing it every single day, and that's how we raised our kids. That's how he was doing it with his family. So passing down that love of the land."*

In other instances, place identity attachments were formed separately from ranching practice. For example, through personal experiences on the landscape, or engagement with the area's rich history.

*"I was raised to understand that a place is populated by more than just those of us living here today. In that sense, living and working on the prairie I have always felt a part of a 'community' that includes not just the people here today, but those of past generations, as well as the plants, animals and physical features that make up the prairie and its surrounds. [Nez Perce, ranching settlers, hunters, tourists, businesses, those who value nature] I think there is a little of all these identities in me..."*

Additionally, the Zumwalt Prairie comprises ancestral homelands of the present-day Nez Perce Tribe and Confederated Tribes of the Umatilla Indian Reservation. This place carries identity associations for their members, though many live outside of the area and *"have not walked the land."*

### *4.2.3 Place meaning*

Among those interviewed, the Zumwalt Prairie held many similar meanings, as noted in previous sections: a grassland, a bunchgrass prairie, a ranchland, an economic resource, a piece of family history, a resource to pass on, a home, cattle country. All participants expressed an interest in conserving or stewarding the prairie. Participants were

asked what, besides economic value drivers, motivated this interest in conservation. Furthermore, in order to elucidate place meanings, some were asked to consider what it would mean to them if the prairie were gone, what they considered most special about the prairie, and how they would describe it to others.

As with visitors to the Zumwalt Prairie (see section 4.1), rancher participants overwhelmingly described their sensory experiences in nature and open space as possessing value and shaping their relationships to that place.

> *"Have you ever seen a sunrise on the prairie? Or a rainbow from the Seven Devils to the Eagle Cap? Or hear a bull elk bugle on a crisp fall day? Every day, a hawk on the wing. The values are endless if you're wired to that."*
>
> *"It's not about just having your cows out there. We thoroughly enjoy every minute we spend out there. Being on the landscape and in that environment, I mean."*
>
> *"Too many special things. The little pools in the creeks. The smell of grass curing. The meadowlarks singing in the cool of dawn. The smell of the pines and the feeling of their fire-adapted bark on your skin."*
>
> *"There's a huge value in open space, to me. And quite frankly I feel sorry for people that have to live in urban areas. So the open space concept is twice as important as economic. And not just have it be open but have it be healthy…When you can see your grandkids from 3 to 7 years old bail out of the car when they get here. I can't imagine a five year old growing up in an apartment in New York City, never seen dirt."*

Some would describe it with words such as *remote, beautiful, diverse, unique, "empty country," "like the Yorkshire Downs;"* as a place at various times representing a *"battleground for natural resource conflicts,"* a place of *"tourism and second home communities,"* and *"ecological uncertainty."* While the area was largely characterized as a place for cattle, or in which cattle are present, it is also a biodiverse grassland with *"forbs, shrubs, animals and wildlife of all types;"* an amalgamation of histories and cultures; and

a *"place of memories and dreams."* It is a place for introspection, recreation, isolation, respite, and hard work. One interviewee, a Nez Perce tribal member, referred to the Zumwalt Prairie using the term *Tamkaliks.* More than a word, *Tamkaliks* is *"the feeling that when you come over the hill and see the mountains, you stand and take notice, because you know you're home."*

## 5. Discussion

Results of this study reveal a range of place meanings expressed through creative writing exercises, by visitors to the Zumwalt Prairie, as well as place meanings and dimensions place of attachment held by local ranchers. Recent conservation and stewardship literatures theorize a positive relationship between sense of place and pro-environmental behavior. Accordingly, these findings represent distinct points from which TNC staff may begin to cultivate and/or operationalize conservation values pertinent to the Zumwalt Prairie and ZPP. Furthermore, results hint at replicable strategies to activate sense of place which might be utilized in other conservation settings, particularly charismatic landscapes or working lands.

### 5.1 Cultivating conservation values among visitors

Visitors do not have much direct influence on environmental conditions of the Zumwalt Prairie and ZPP, especially when compared to ranchers and other land managers. However, it is important for non-profit organizations like TNC to nurture an appreciation of natural places among visitors and members of the general public. These individuals can contribute significantly to conservation successes, through donations, volunteer labor, and social dissemination of a conservation ethic. One way to do this is by cultivating a sense

of place around conservation landscapes, inviting a level of personal connection and care which would otherwise be absent.

The Zumwalt Prairie is a charismatic landscape, both ecologically valuable and stunning to behold. This is reflected in the Outpost documents reviewed for this study, in which writers described at length their sensory experiences in that place. Physical experiences of being in a wide open space, seeing the clouds, hearing the birds, feeling the breeze, and smelling the flowers gave the prairie meaning. The importance of sensing the ZPP environment – its landscape, plants and animals, its scale, feelings of isolation and exposure – as a mechanism toward building a sense of place is clear. Therefore, it is recommended that individuals be physically invited to the ZPP as often as possible. TNC already hosts events like Outpost, and keeps the ZPP open to public visitors, though there are opportunities to get more people onto the prairie. This is especially important for those who rarely have opportunities to interact with natural landscapes, including those who reside in urban areas, or people of color and less affluent individuals in the Wallowa County area, as suggested by a local TNC staff member.

Beyond simply opening the space to visitors, individuals could be further engaged through volunteer stewardship activities, which might heighten place attachment in addition to cultivating positive place meaning. It is further recommended that visitors be well-informed about the history of the Zumwalt Prairie, including Nez Perce, settler homesteading, and geologic history, all of which seemed to hold significant intrigue for Outpost visitors. Other elements of place meaning elucidated by this study (e.g., enigmatic,

soothing, discovery) could not be easily reproduced by TNC staff, though these should emerge organically through physical presence of visitors on the Zumwalt.

Once a sense of place has been cultivated, TNC staff might activate conservation behavior by evoking those elements of meaning which resonated with past visitors. This could occur, for example, through photos of the landscape, animal profiles, or storytelling which connects individuals to historical and mythical entities. Results of this study do not indicate the potential for a cultivated sense of place to stimulate protective action; only the ways in which sense of place might be established among visitors. Further study is needed to affirm the translation of sense of place to protective action in this case. However, findings provide a starting point for appealing to visitors for conservation support, and for understanding place meanings held by those who have visited in a recreational capacity.

### 5.2 Operationalizing conservation values among ranchers

The latest management plan for the Zumwalt Prairie, the Conservation Business Plan (TNC, 2016b) reflects a neoliberal conservation approach which emphasizes market drivers, ranching livelihoods, and economic benefits of conservation. Though not explicitly incorporating sense of place, this approach is most closely aligned with ranchers' place dependence; that is, the extent to which they rely on the Zumwalt Prairie for their livelihoods. Within a neoliberal model, conservation is framed as supporting ongoing livelihoods while advancing economic growth, promoting resource conservation through monetary incentives (Igoe & Brockington, 2007). The role of income should not be understated, though arguably, TNC has focused too narrowly on economic dependence and economic value as drivers of conservation behavior. As one interviewee put it, money is

important to his family's cattle operation, but "*it isn't why [we] tie our shoes in the morning."* Study results indicate that economic arguments are not the most effective or resonant when speaking with local ranchers about conservation behavior, as they are more moved by other aspects of place; namely, dimensions of meaning and identity. These findings are in alignment with existing literature on the non-economic values thought to drive conservation behavior on working lands (Blackmore & Doole, 2013; Cross et al., 2011; Dorresteijn et al., 2015; Mullendore et al., 2015).

Results of this study and others (see Chapter 5 & 7) suggest that a strong conservation ethic is present among ranchers on the Zumwalt Prairie. Because parcels are privately owned, some for generations by members of the same family, those interviewed articulated a sense of personal connection, care, and familial identity on the land. Prairie land is not only a livelihood resource, but a piece of history, something that can be passed on, and something that they are responsible for. Furthermore, a clear appreciation for the prairie as it is – open, undeveloped, a working grassland, a functioning ecosystem for people and nature – exists among local ranchers. There is potential for TNC to expand its influence by operationalizing this conservation ethic, by expressly appealing to that sense of family history and continuity, or love of the land. According to interviewees, these are the drivers which most inform their conservation behavior.

Study results support theories that sense of place can positively affect conservation behavior. This was affirmed by multiple ranchers who credited elements of place identity and meaning, as well as economic dependence, with informing their decisions to practice conservation. An important consideration here is that, because TNC is attempting to

influence conservation behavior on private land, ranchers (and other land managers) are free to practice conservation in their own way. For example, some prioritize water conservation, while others practice carbon capture; some favor the use of chemicals or machinery, while others take a more manual or natural approach to landscape management. Understanding and working with variability is a critical component of successful place-based conservation. Managing organizations can engage with localized senses of place, identifying flexible points of synergy rather than forcing a rigid or prescriptive agenda, then support diverse local efforts and partnerships with research, advice, volunteer labor, or financial support; this latter option may be especially important, given that some rancher interviewees identified economic resources as a means to an end of sustainable practice. However, staff should remain open minded to different manifestations of conservation behavior. Though sense of place can encourage environmental protection generally, this does not mean that ranchers will adopt TNC's specific vision of conservation.

An additional consideration is the extent to which these findings might hold among ranchers who do not already possess a strong sense of place on the Zumwalt Prairie; for example, newcomers or those without strong familial or historical connections to the landscape. In those instances, operationalization of sense of place for conservation action would not be immediately feasible. However, all ranchers would presumably develop a sense of place after some time there, due to personal impressions of the landscape, economic dependence associated with ranching livelihoods, or socio-cultural connections established over time. In these instances, TNC may consider supporting cultivation of a positive sense of place first (as with visitors), before attempting operationalization.

## 5.3 Transferrable lessons for practice

Multiple elements of the Zumwalt Prairie and ZPP make it a unique conservation landscape, particularly conducive to the effects of sense of place. It is a charismatic landscape, it is majority privately owned, and it has a rich and multi-generational ranching history. Attempts to utilize sense of place as suggested here may be less effective in places which are less visually stunning, or which are publicly owned, missing a sense of personal stewardship responsibility or familial identity. Furthermore, the very notion of place-based conservation implies idiosyncrasy across places. Still, attention to sense of place is recommended in all conservation settings, regardless of aesthetics, history, or ownership.

Awareness of sense of place may prevent practitioners from acting contrary to local values, a common problem which creates unnecessary friction and limits potential for the public to become engaged in conservation. Furthermore, sense of place may illuminate dimensions of socio-ecological resilience unknown to practitioners. For example, the tendency is to emphasize livelihood continuity and economic benefits, though other elements such as family history and personal connections to land may be just as indicative of individual well-being. Ideally, sense of place can go beyond avoiding conflict, by guiding interventions which build (upon) a place-based conservation ethic. As noted in this study, the complexity and details of sense of place differ among user groups (for example, eco-tourists, versus Indigenous persons, versus extractive resource users). Therefore, it is recommended that sense of place (including meaning, dependence, and identity as appropriate) be assessed, cultivated, or operationalized separately for distinct user groups, according to their specific relationships to and impacts on the landscape in question.

This study made use of two distinct research methods, made necessary by the availability of data and access to research participants. While the document analysis of Outpost writing was certainly illuminating, the results are arguably less robust than those gleaned from interviews and questionnaires. This is because writers were not able to directly convey senses of place in their own words; their sentiments were translated and interpreted solely by an outside researcher, resulting in a lack of depth. It is recommended that direct, interactive, qualitative methods such as in-person interviews be utilized when possible. This will allow the researcher to maximize understanding of sense of place and all of its facets, and is likely necessary for effective operationalization. However, time, relationships, funding, and other constraints may make such deep engagement difficult. Creative use of other data sources is an appropriate starting point for gaining insight, particularly when pursuing cultivation of a pro-environmental sense of place.

## 6. Conclusion

This study has offered two distinct approaches to connecting sense of place with conservation behavior; both by cultivating it among visitors, and operationalizing it among land users. In the case of the Zumwalt Prairie, a sensory experience in its vast, natural landscape appears sufficient to cultivate a range of place meanings and strong sense of place among visitors. Ranchers, who live and work on the land, already possess a powerful sense of place, encompassing dependence, as often noted by TNC in economic arguments, as well as identity and meaning. All of these elements inform ranchers' conservation behavior and their desire to maintain the prairie as a healthy, open, and working landscape. Sense of place has often been overlooked in conservation and environmental literatures,

though theories linking sense of place to both protective environmental behavior and socio-ecological resilience have recently come to light. This study contributes empirical evidence and recommendations to that growing body of scholarship. Results advance discussion of the potential role that sense of place plays in conservation, as well as practical opportunities for realizing that potential.

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## Chapter 7 Representation and Response in Place-Based Conservation: A Review and Knowledge Inventory from the Zumwalt Prairie

**Abstract:** Conservation practice is guided by discourse and knowledge which inform public perceptions of acceptable ecological behavior. Typically, the knowledge of scientific experts is privileged, while conservationists themselves are framed as protectors of nature, working against resource users. Recent transitions in conservation science have yielded a more community-based, inclusive, and flexible approach, which recognizes variability in ecological knowledge, as well as the role of humans in advancing conservation. Theoretically, a place-based approach to conservation will be more representative of local ecological knowledge, and also yield higher levels of community satisfaction with and contributions to conservation efforts. This article presents a case study of place-based conservation from the Zumwalt Prairie Preserve, exploring the relationship between discursive representation in and community responses to conservation. Though findings indicate that intentional representation of diverse user groups and knowledge may not be necessary to gain public support, it is essential for environmental justice, community empowerment, and informed decision making in conservation.

### 1. Introduction

Since the inception of the modern nature conservation movement in the United States, notable variations in guiding discourse have emerged. For some, nature is a social construction, for others, a biophysical absolute (Cronon, 1995; Demeritt, 1994 & 2002). Some view humans and nature dichotomously, others as interrelated components of

complex socio-ecological systems (Adams & Hutton, 2007; Berkes & Folke, 1998; Caillon et al., 2017). This is to say nothing of non-Western viewpoints; for example, the notion that humans have an essential place in and responsibility to nature, resulting in the engrained practice of stewardship and environmental management by Indigenous peoples since time immemorial (Anderson, 2013; Berkes, 2018; Hames, 2007). The popular discourse used by a society regarding the natural environment, and the knowledge which that discourse reaffirms, has significant implications for the practice of conservation. These include how nature is perceived and valued, what natural state is considered ideal, what targets are prioritized, and what approaches are deemed acceptable (Agrawal, 2005; Cavanagh, 2018; Vaccaro et al., 2013; Van Assche et al., 2017). Though these specifics vary through time and across space, one aspect of conservation science has remained consistent: natural scientific experts have been framed as environmental protectors, their knowledge and discourse overwhelmingly privileged (Kareiva & Marvier, 2012; Luke, 1999; Turnhout, 2018).

Concurrent with intellectual shifts towards socio-ecological systems thinking, environmental justice, and community-based conservation, conservation organizations have assumed a more human-oriented posture in recent decades (Kareiva & Marvier, 2012). This has been intended to make conservation more democratic, more apposite to those place-based communities which will be affected by it, and to improve conservation outcomes by incorporating new approaches to environmental understanding, including social scientific perspectives and alternative ecological knowledges (Bennett et al., 2017; Plummer, 2009; Zimmerer, 2015). A community-based or place-based approach to

conservation will theoretically enable greater representation of local knowledge and interests in practice, and engage local actors as partners in the process, compared with a classic top-down approach (Barkley & Kruger, 2013; Berkes, 2007; Ece et al., 2017; Western et al., 1994). This in turn may yield a more favorable community response to conservation efforts (Hall et al., 2013; Muyengwa, 2015).

This article explores discursive representation in conservation planning, and its relationship to community response, using a case study from the Zumwalt Prairie Preserve (ZPP) in Oregon, United States. This preserve is owned and managed by The Nature Conservancy (TNC) and has been the subject of a place-based approach to conservation, wherein TNC staff have been embedded in the local community and tailored their management strategy. A review and critical assessment of internal documents answers the question, *Whose knowledge and discourse are represented in TNC's conservation of the ZPP, and how are different user groups represented?* Results of a community survey provide an inventory of germane local ecological knowledge, and are further reviewed to address the following: *How does representation relate to self-reported conservation satisfaction and contribution among different user groups?* This study adds empirical evidence to the emerging scholarship of place-based conservation, with relevance for practitioners hoping to generate public support and inclusion through discursive representation.

## 2. Conceptual Grounding

The concept of representation is central to the present study. It has been applied across social scientific literatures, both inside and outside the field of conservation.

Representation may refer to the authorization of one person or group to act as the spokesperson for others; the unified face of collective experiences or interests (Pitkin, 1967; Young, 2000 & 2010). Often, this concerns political representation in governance, wherein designated representatives convey the wishes of constituents (Alonso et al., 2011; Young, 2010). In conservation literature, representation has commonly been framed as functional, democratic decision making in community-based conservation; diverse knowledge integration and operationalization; or substantive participation of community actors in resource management (David-Chavez & Gavin, 2018; Ece et al., 2017; Mbeche, 2017; Western et al., 1994).

Theoretically, representation gives marginalized populations a chance to affect decisions, redistributes power held by those at the top, and invites new perspectives which might improve outcomes (Young, 2000). While functional participation of individual actors is a democratic ideal, it is often unrealistic to expand governance to this extent. In such cases, *discursive* representation is a viable alternative (Dryzek & Niemeyer, 2008; Keck, 2009). Discursive representation is the articulation of a marginal group's discourse by those in power; or, an introduction of that group into the mainstream by its inclusion in the dominant group's own discourse (Dryzek & Niemeyer, 2008; Hardy & Phillips, 2004). Though discursive representation itself does not amount to democratic practice or equitable, inclusive governance, it is considered a step in this direction; a precursor to deliberative decision making which is likely to yield consensus and inter-group empathy (Dryzek & Niemeyer, 2008; Fishkin, 2011). The present study will focus upon two related mechanisms of discursive representation: inclusion of diverse discourses and knowledge

in management strategy ("knowledge representation"), and discursive portrayal of various user groups ("user group representation").

## 2.1 Discursive representation of knowledge

In alignment with Foucauldian theory, discourse is a mechanism through which a group's knowledge is discussed, acted out, and reaffirmed, and serves as a reflection of group interests (Hall, 2001; Olsson, 2010). Therefore, when those with decision making power choose to elevate the discourse of a particular group, they also affirm that group's knowledge as valid (Luke, 1995; Turnhout, 2018). In a conservation context, managing organizations can give weight to a non-dominant group by performing its discourse and incorporating its knowledge into the decision-making process, even when members of that group are not directly involved in governance (Dryzek & Niemeyer, 2008).

All human groups possess a unique understanding of the natural environment, informed by specific cultures, politics, economies, geographies, and experiences (VanAssche et al., 2017). Even within seemingly homogeneous societies, variability in environmental understanding can emerge. Political ecologists, anthropologists, and others have sought to illuminate and elevate this variability, challenging a conservation science rooted in Cartesian rationalism to be more flexible and inclusive of non-expert knowledge and discourse (Ainsworth et al., 2020; Bohensky & Maru, 2011). Of particular interest have been Indigenous, traditional, and local ecological knowledges, which differ from a technocratic-scientific understanding of the natural world and are culturally or spatially bound (Berkes, 2018; Olsson & Folke, 2001; Stori et al., 2019; Wohling, 2009). These knowledge systems may account for ecosystem function, flora and fauna, feedbacks, and

environmental changes, but are more expansive than conventional ecological knowledge (Stori et al., 2019). They include practice and belief, environmental perceptions, attitudes, interactions, manipulations, and relationships in addition to material ecological awareness (Berkes, 2018; Gragson & Blount, 1999; Nazarea, 1999).

In his 1998 essay *Whose Knowledge, Whose Nature*, Arturo Escobar raised the issue of divergent knowledges in conservation. Though all human communities operate under fluid, socially constructed environmental notions ("biodiversity," in Escobar's case), only the knowledge of scientific experts is typically represented, or taken as rational and actionable (Escobar, 1998; Feindt & Oels, 2005; Fischer, 2000; Gailing & Leibenath, 2015). However, situated knowledge both predicts and explains the conservation behaviors and priorities of distinct communities, and may prove useful in guiding conservation practice toward mutually agreeable ends (Timoti et al., 2017). Furthermore, alternative sources of knowledge are expected to fill gaps in normative ecological understanding, expanding opportunities for ecosystems and social systems to thrive through integrative conservation solutions (Bohensky & Maru, 2011).

### 2.2 Discursive representation of user groups

There is consensus within the field of conservation science that humans have a place in nature. The idea of conservation by or for humans distinguishes conservation science from seminal fields such as ecology or biology (Kareiva & Marvier, 2012), and goes further in acknowledging linked socio-ecological systems (Ostrom, 2009). This position has been reflected in organizational and academic discourse, though conservation training and practice have remained firmly rooted in a technocratic, natural-scientific, and

neoliberal intellectual framework (Fox et al., 2006; Higgs, 2005; Holmes & Cavanagh, 2016; Luke, 1999; Rust et al., 2017). Oftentimes, the role of humans in nature is characterized dialectically as either threatening (resource users) or protecting (conservation professionals or scientific experts) nature (Adams & Hutton, 2007; Kareiva & Marvier, 2012). Such a position is reductive, and poorly suited to considerations of human well-being, knowledge heterogeneity, or the potential of resource users to advance conservation goals themselves (Armitage et al., 2012; Kareiva & Marvier, 2012). Human actors possess a range of environmental interests and abilities informed by their unique experiences, knowledge, and socio-political context, though conservation practice typically has not captured, reflected, or operationalized this multidimensionality (Adger et al., 2011; Sarkar, 2005; Zimmerer, 2015).

Regarding the role of humans in nature and in conservation practice, discursive representation has not only to do with affirmation of diverse knowledges. Discursive representation also refers to the way that a group, entity, or issue is portrayed by those in power (Dryzek & Niemeyer, 2008; Wagner, 1995). The discursive lens though which specific groups are described - represented for example as partners, threats, or beneficiaries - directly concerns both knowledge elevation and inclusion in deliberative processes. This gives cues as to whose knowledge matters, who is considered worthy to co-produce knowledge, who should be excluded or targeted for behavioral change, and who should or should not be empowered to contribute to the process of strategizing and managing conservation (Coffey & O'Toole, 2012; Escobar, 1998; Turnhout, 2018).

## 2.3 Transitions in conservation practice

As a practice, community-based conservation has attempted to work with social variability by recognizing local environmental discourse and knowledge, and engaging with unconventional local actors (Ruiz-Mallen & Corbera, 2013). This may involve taking an inventory of traditional or local knowledge, co-managing resources with community partners in alignment with situated ecological interests, or tailoring top-down conservation actions to context (Berkes, 2007; Western et al., 1994). Yet, while community-based conservation necessitates a greater awareness of local knowledge on the part of conservationists, it does not guarantee power sharing, knowledge integration, or representation of diverse perspectives in decision making (Adger, 2011; Berkes, 2009; Western et al., 1994). Indeed, case studies (e.g., Beem 2007; Castro & Nielsen, 2001; Vaughan & Caldwell, 2015) show that despite a nominal pursuit of inclusion and equal representation, community discourse does not substantially sway scientific thinking or decision making; nor does the solicitation of community-based knowledge effectively move practice away from outmoded dialectics on the place of experts and resource users (Berkes, 2009; David-Chavez & Gavin, 2018; Raik et al., 2008).

Where unilateral and intellectually narrow attempts at conservation have failed, earnest representation of diverse environmental perspectives may theoretically smooth conservation transitions, garner public support, increase public participation in conservation implementation, and produce more favorable socio-ecological outcomes overall (Adger et al., 2011; Barkley & Kruger, 2013; Yung et al., 2003). This is the approach characteristic of place-based conservation (Stewart et al., 2013), the latest

iteration of practice which follows from a community-based model. Beyond a heightened emphasis on situated social factors and local knowledge, place-based conservation goes further than its predecessor in asserting the need for a meaningful, diverse community presence in everything from conservation planning, to data generation, to implementation, perhaps better eschewing entrenched power imbalances (Stewart et al., 2013). This approach calls on conservationists to uncover, represent, and respond to situated environmental perspectives, including social constructions, behaviors, interests, and material ecological knowledge (Barkley & Kruger, 2013; Williams, 2013). Place-based conservation does not invite a rejection of natural-scientific knowledge, but an openness to intellectual and practical exchange with local knowledges and resource users for mutual enhancement (Stewart et al., 2013; Turnhout, 2018).

The present study explores dynamics of discursive representation - both knowledge and user group representation - in a place-based conservation scenario. Previous studies of social representation emphasize the functional, rather than discursive variety, including democratic participation in resource governance (e.g., Ece et al., 2017; Mbeche, 2017). Studies specifically addressing discursive representation and its practical implications for community response and satisfaction, particularly within a place-based conservation scenario, are essentially non-existent. Findings should help to fill empirical lacunae regarding the use of representation in a place-based arrangement, as well as the potential for representation to generate public support of conservation work.

## 3. Case Study, Methods and Data

The present study concerns one place-based conservation case in Wallowa County, northeastern Oregon, United States. This rural area comprises a population of 7,004 which is predominantly white, older, and well educated (US Census Bureau, 2019); a strong cattle ranching economy; and multiple sites popular with outdoor recreationists. Current members of the Nez Perce Tribe and Confederated Tribes of the Umatilla Indian Reservation (CTUIR) recognize the area, which holds cultural significance, as part of their ancestral homeland. Within Wallowa County lies the Zumwalt Prairie, a vibrant, working grassland spanning over a quarter million acres. Of this larger entity, which is managed by a patchwork of private landowners, 33,000 acres are owned and operated by The Nature Conservancy as the Zumwalt Prairie Preserve. Although the Conservancy owns only the ZPP, work there has emphasized the expansion of conservation behavior and positive socio-ecological outcomes into the larger Zumwalt Prairie landscape.

TNC staff have been active in Wallowa County for two decades and engage with the local community beyond activities which are strictly conservation related. The local TNC office voluntarily pays taxes and sponsors community events, and staff live in the area. Furthermore, the ZPP has remained open to the public for recreational use, with some cattle grazing and hunting permitted, signifying a departure from organizational norms in favor of an approach which is responsive to local interests. Due to their immediate and significant impact on prairie land surrounding the ZPP, ranchers and neighboring large landowners have been the most extensively engaged by TNC staff, who hope to scale up their influence. This has meant direct exchange through advisory meetings, grazing and

weed management experiments, and knowledge sharing. TNC has publicized its relationship with ranchers and intention to manage the ZPP as a working landscape, referring to local partners as "conservation cowboys," and emphasizing the integration of grazing livelihoods with conservation goals in public releases (Smith, 2017; TNC, 2020). Though less publicized, other residents and visitors have also been engaged to an unconventional degree, through volunteer and stewardship programs, research partnerships, school tours, writing retreats, and other events on the ZPP. TNC's work around the ZPP may be considered a place-based conservation initiative, meant to capture socio-ecological complexity at a landscape scale, engage with diverse resource users in context, invite knowledge inputs from local non-experts, practice adaptive management, and reflect situated interests through a tailored approach.

### 3.1 Methods and data

Study data were collected through an online survey, intended to capture germane local ecological knowledge, as well as community responses to TNC's conservation work in the area. The survey was open to Wallowa County residents, visitors, or anyone else with a relationship to the Zumwalt Prairie or ZPP. Survey invitations were distributed widely from July through December 2020 with the help of local partners, including staff of community groups and non-profit organizations, who shared the study with donor and member networks. Flyers advertising the survey were posted in public locations, and an article describing the research study was printed in a local newspaper. The net for participants was cast widely in search of diverse perspectives and ecological knowledge pertinent to the ZPP. However, participants were not systematically identified, and do not

represent a truly random or statistically significant sample; therefore, results should be taken as a knowledge inventory and conceptual guide, elucidating themes but not explaining cause and effect relationships.

The online survey (Appendix C) consisted of 25 mixed qualitative-quantitative questions: 19 multiple choice and 6 short answer. Because the ZPP and TNC's conservation efforts there are so deeply entwined with the larger Zumwalt Prairie, questions were posed which covered both spatial scales. Questions were developed in accordance with Berkes' (2018) conceptualization of ecological knowledge, which encompasses direct knowledge, as well as practice and belief. This includes, for example, participant awareness of ecological threats facing the Zumwalt Prairie (knowledge), the ways in which they use the prairie or contribute to its conservation (practice), and their perspectives on human-nature relationships (belief).

Participants were first asked to self-identify according to four categories: age, length of residence in Wallowa County (if applicable), association with various user groups, and relationships to the Zumwalt Prairie. User groups formed the units of subsequent analysis regarding knowledge representation, satisfaction, and contribution, and were derived from key categories previously identified by TNC, as well as the researcher's personal understanding of the local context. Respondents were then asked a series of questions about their environmental attitudes and knowledge, both generally and in relation to the Zumwalt Prairie. Finally, they were asked direct questions about their experiences with and perceptions of TNC's work with the ZPP. Throughout the survey, including with multiple choice questions, participants were invited to elaborate on their

responses through fill-in and short answer options. Returned surveys were reviewed for completeness; those in which respondents had not gone beyond the self-identification section were eliminated, leaving a total of 80 useable responses. Of those 80, 67 had 100% completion of multiple choice questions, 57 had 100% completion of all questions, and 13 included a few missing answers throughout.

Concurrent with analysis of survey data, a content review was performed on 16 internal TNC documents pertaining to the ZPP, provided by TNC staff, for the years 2001 to 2018. These included five ZPP management and conservation action plans; three project updates summarizing key initiatives, findings and priorities; three project reports to external funding organizations; and five sets of community meeting minutes. Documents were analyzed for discursive references to specific user groups and types of knowledge, and synthesized as a narrative overview. These 16 documents do not account for all items produced by TNC during this time period, nor do they reflect all actions of local staff in the community. However, they provided a substantial base from which to assess relationships between representation and conservation responses in this particular case.

## 4. Results

### 4.1 Document analysis

From the earliest ZPP management plan reviewed (2003-2006), TNC's stated desire has been to work collaboratively with the Wallowa County community, pursuing conservation that meets biodiversity goals while still allowing humans to thrive on the landscape. References to general public access, research and educational access, and regulated hunting programs indicate attempts to connect TNC's work with specific user

activities. However, documents from the first decade of ZPP management by TNC reflect a clear discursive elevation of two user groups: scientific experts/environmental professionals, and stockgrowers (i.e., ranchers). Unsurprisingly, conventional ecological knowledge appears to have guided early management plans, while ecological discourse permeates project updates. These documents focus heavily on biodiversity conservation, framing targets in terms of specific plant and animal species, and ecosystem restoration goals. In all cases, targets and strategies are determined by TNC staff, based on scientific expertise. Furthermore, environmental experts/professionals (for example, from State or Federal resource management agencies, local environmental organizations, and academic institutions) are repeatedly and exclusively framed as "partners" in early documents.

Early documents (2001-2010) refer to past and present threats to biodiversity posed by human activities, including road building, altered fire regimes, land cultivation, and overgrazing. Yet, from the beginning, managed grazing is described as a viable conservation strategy, potentially offsetting damage and advancing conservation goals in other ways (for example, weed control or water quality improvement). Because grazing is identified as both a socio-economic necessity for the area, and a potential gateway to conservation across the prairie, the knowledge and discourse of local ranchers are elevated early on. The more general term "landowner" is also used to describe those who own and manage substantial properties adjacent to the ZPP, and may participate through conservation easements or habitat protection, though specific language and strategies are largely directed at rancher landowners. The dominance of this group and its knowledge in TNC's conservation planning is further evidenced by minutes from four meetings of the

Zumwalt Advisory Board (2001-2003). The board has since been disbanded, but was meant to assist TNC in the development, implementation, and monitoring of a management plan for the ZPP in its early years. Participants in these meetings were overwhelmingly environmental professionals or local ranchers, with some overlap between the two groups. Although a synthesis of research on the ZPP, generated by TNC in 2010, found several instances of ecological degradation associated with cattle grazing, the Conservancy did not adopt an anti-grazing stance which might have aided biodiversity conservation in some cases. Rather, subsequent documents reveal a deeper commitment to the development of sustainable grazing, though TNC's desired approach, in alignment with organizational goals rather than specific strategies advocated by ranchers themselves, appears to remain dominant.

The Zumwalt Grassland Initiative, a management plan for 2011-2015, marks a more deliberate turn toward human benefits – particularly socio-economic benefits and livelihood sustainability – across sectors, with an emphasis on grassland stewardship through market-based incentives. This particular plan calls for TNC outreach to and partnership with landowners (especially ranchers) to better understand their values and interests, and to develop sustainable grazing management plans for their properties. A subsequent document, the Zumwalt Prairie Conservation Business Plan (2016), goes further toward a neoliberal, market-based conservation model which targets strockgrowers, identifying individuals in the beef supply chain as desired partners and potential contributors of expertise. Again, rancher representation is evident in minutes of a community meeting to discuss this five-year strategic plan, all participants in which were

either ranchers or TNC staff. These later documents reveal a shift away from explicit emphasis on biodiversity conservation, diverging from conventional ecological knowledge characteristic of earlier plans. The neoliberal discourse of newer documents is reflective of trends in that direction across conservation practice in recent years (Holmes & Cavanagh, 2006; Vaccaro et al., 2013), as well as a willingness on the part of TNC to acquiesce local economic interests.

Environmental experts and professionals, ranchers, and neighboring landowners have been the most directly represented in all documents reviewed. The knowledge of these groups has been sought and elevated, while all have been discursively identified as potential partners in conservation. Other user groups have been far less clearly represented across the board, typically grouped together as "the public." Although TNC staff are known to have surveyed local community members on their environmental values and socio-demographic characteristics, it is not apparent that specific groups (e.g., homeowners, visitors, non-landowning businesses) were tapped for conservation knowledge regarding the ZPP, or intentionally represented in its management strategy. One exception is hunters, who have been more directly engaged in programs on the ZPP. Generally, the public is represented as benefitting passively from recreational access to the ZPP and ecological health, as well as community events and educational outings there. While an early project report (2006) refers to 10,000 hours of volunteer labor on the ZPP, there are no references to large, coordinated volunteer efforts in later documents, and minimal discussion of engaging community members in this way.

Given the history of exclusion and oppression of Indigenous persons through conservation practice, it is worth examining representation of the Nez Perce Tribe and CTUIR in ZPP site documents. In the 2003-2006 ZPP Management Plan, the Nez Perce Salmon Habitat Recovery Plan is referenced as an existing project with which TNC might integrate its own goals. This falls into the category of scientific/ecological discourse, and does not constitute a recognition of the Nez Perce traditional knowledge or cultural interests related to the ZPP. Otherwise, references to the tribe appear repeatedly in historical summaries, discursively framing Indigenous presence on the ZPP has something of the past. Nez Perce tribal members are identified as "stakeholders" in the later Zumwalt Grassland Initiative (2011), but are not subsequently discussed as partners or rightsholders, nor are they mentioned in the Conservation Business Plan (2016) or 2018 Zumwalt Prairie priorities update.

## 4.2 Knowledge survey

### *4.2.1 Respondent characteristics and uses of the prairie*

Self-identification and demographic results are shown in Table 1 below. Respondents most frequently self-identified as Wallowa County residents (74%), age 65 years or older (35%), having resided in the area for over 20 years (34%). The majority were 36 years or older (98%), and had lived in the county for at least 5 years (63%) at the time of survey completion. Just over a quarter (26%) of respondents reported living outside of Wallowa County, including many recreational visitors to the Zumwalt Prairie. Participants were permitted to self-identify within multiple user groups, with some respondents choosing upwards of six options, indicating significant complexity.

Table 1. Results of survey questions 1-4: respondent demographic and self-identification information (n=80).

| Age | Total | Residence in Wallowa County | Total | Group Self-Identification | Total | Relationship to Zumwalt Prairie (ZP) | Total |
|---|---|---|---|---|---|---|---|
| 18 – 25 | 0 | Under 5 years | 9 | Wallowa Co. Homeowner | 54 | Live within or nearby ZP | 40 |
| 26 - 35 | 2 | 5 – 10 years | 12 | Wallowa Co. Landowner | 33 | Work on ZP physically, or work focuses on ZP | 14 |
| 36 - 45 | 12 | 10 – 20 years | 11 | Wallowa Co. Business Owner | 22 | ZP is an economic resource (ex: grazing, tourism revenue) | 16 |
| 46 - 55 | 15 | Over 20 years | 27 | Indigenous Person/Am. Indian Tribal Member | 4 | Use ZP for recreation (ex: sprot hunting, hiking) | 67 |
| 56 - 65 | 23 | Does not live in Wallowa Co. | 21 | Environmental or Conservation Professional | 14 | Participate in cultural or community events on ZP (ex: artist retreats, food gathering, weeding days) | 21 |
| Over 65 | 28 | | | Rancher | 13 | Have an emotional or spiritual connection to ZP | 45 |
| | | | | Farmer | 9 | Have a cultural connection to ZP | 12 |
| | | | | Hunter or Angler | 31 | Do not interact with ZP and have no significant relationship to it | 1 |
| | | | | Outdoor Recreationist (non-hunting activities) | 73 | Other | 10 |

Self-identified relationships to the Zumwalt Prairie were equally multifaceted. Half of respondents chose at least three options, though recreational use and an emotional or spiritual connection to the Zumwalt Prairie were the most cited forms of relationship. Among those who selected the fill-in option ("other"), noted relationships to the prairie included wood cutting or gathering, traditional foods gathering, educational trips, former land management, and former use of prairie land for grazing and hunting.

*4.2.2 Identification of environmental threats*

Survey respondents were asked to identify the top three environmental threats facing the Zumwalt Prairie (Figure 1). Invasive species, weeds, and/or pests was the most recognized option, chosen by 71% of participants. This was followed by climate change and unsustainable grazing (38% each), and development (36%). Notably, all four of these threats align with the issue areas identified by TNC in conservation documents, with invasive species (and conservation of native species) topping the list. Threats articulated through a fill-in ("other") option included wolves, overharvest of surrounding forest habitat, disruption of prairie flora and fauna by tilling, and damaging behavior by tourists such as off-roading and trespassing.

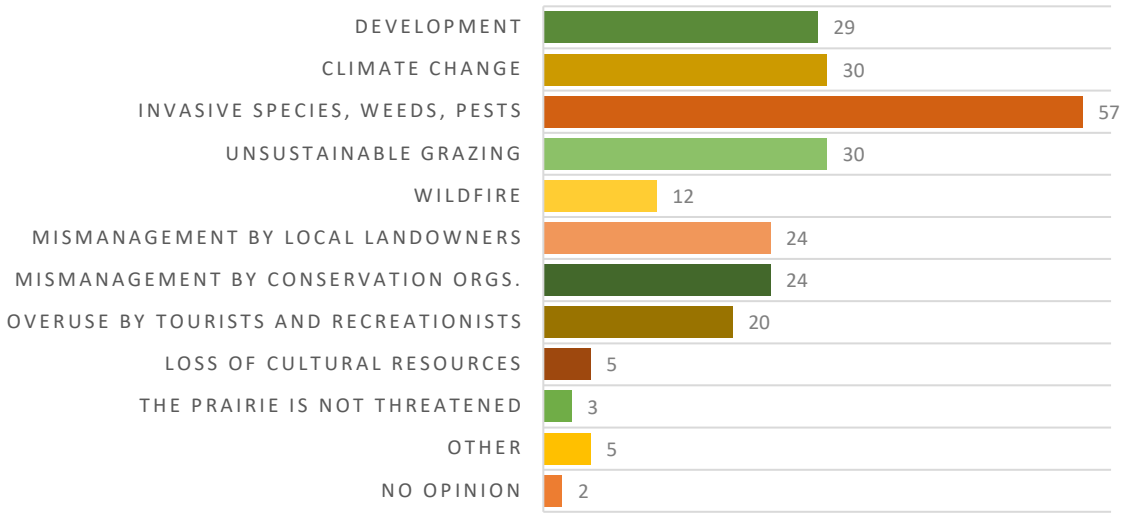


Figure 1. Environmental threats facing the Zumwalt Prairie, as identified by survey participants. The number of total responses is indicated to the right of each data bar.

### *4.2.3 Environmental attitudes and beliefs*

Participants were asked a series of questions intended to gauge their perspectives on human-nature relationships, desired approaches to environmental management, and general attitudes toward conservation. Responses overwhelmingly indicated an inclination toward stewardship. For example, when asked whether conservation of the Zumwalt Prairie was an issue they cared about, 78% answered *Yes, very much* and another 19% answered *Yes, somewhat*, while only 4% answered *No, not very much* and none answered *No, not at all.* Furthermore, when given the statements *Humans have a responsibility to care for land,* and *Individuals must sometimes make personal sacrifices or changes in order to protect the environment and/or natural resources,* 98% and 94% of respondents selected *Agree,* respectively. 72 of 80 respondents (90%) identified themselves as *environmentalists* or

*environmentally conscious*. Among those who would not identify as such, the majority did identify as pro-conservation, but rejected the "extreme" connotation of environmentalism.

Perspectives on how best to manage land were somewhat more mixed. Participants were asked to select between managing mainly for ecological, social, or economic benefit, or managing for a balance between the three, even if this meant some reduction in benefits across all areas. A slim majority (51%) opted for all three, while 40% would prioritize management for ecological outcomes. Managing for strictly social or economic outcomes were far less popular choices, garnering 1% and 4% of responses, respectively.

An important element of environmental knowledge, specifically belief, is the meaning behind seemingly absolute concepts which are in fact variable and socially constructed. Participants were asked to explain what the concepts "environmentalism" and "caring for land" meant to them. Responses broadly fell into several thematic categories: maintaining or improving the quality of land for future generations; using land for human needs but in a responsible manner that does not compromise ecological integrity; using all tools available to better understand human impacts on the land and improve outcomes, including research, adaptive management, and traditional ecological knowledge; maintaining biodiversity, wildlife habitat, soil and water quality, particularly by prioritizing the health of native species. Numerous respondents believed that humans should continue using land and natural resources to meet their needs, that human interaction is a key component of ecological health, and that humans and natural systems are interconnected. This perspective was sometimes accompanied by calls for a more balanced and reciprocal approach to use. Concepts of environmentalism and caring for land

appear to be understood somewhat interchangeably, except by those who consider environmentalism an extreme position with connotations beyond conservation or stewardship.

*4.2.4 Perceptions of and responses to conservation*

This study emphasizes apparent relationships between discursive representation in place-based conservation practice, and individuals' reported responses to conservation. Participants were asked (1) how well they felt their interests and environmental perspectives were represented in TNC's work around the ZPP; (2) how satisfied they were both with TNC's community engagement efforts and conservation work on the ZPP; and (3) their willingness to contribute through five prescriptive actions for conservation of the Zumwalt Prairie: donating money, donating labor, attending meetings to discuss conservation of the prairie, limiting or changing their recreational activities on the prairie, and following specific recommendations from conservation organizations such as TNC. Responses have been parsed according to self-identified user groups affiliations (Table 2).

Table 2. Response to survey questions regarding representation in, satisfaction with, and contributions to conservation of the ZPP. All numbers in the table represent percentages (%) of each user group. The "No answer" row refers to either no answer given, or selected response "I don't know" or "no opinion."

| | | Wallowa Co. Homeowner (n=54) | Wallowa Co. Landowner (n=33) | Wallowa Co. Business Owner (n=22) | Indigenous Person/Am. Indian (n=4) | Conservation or Env. Svc. Professional (n=14) | Rancher (n=13) | Farmer (n=9) | Hunter, Angler (n=31) | Outdoor Recreationist (n=73) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Feelings of representation** | **Fully represented** | 11 | 9 | 0 | 0 | 7 | 0 | 11 | 10 | 11 |
| | **Mostly represented** | 20 | 24 | 32 | 0 | 29 | 15 | 11 | 32 | 25 |
| | **Somewhat represented** | 46 | 48 | 55 | 100 | 64 | 62 | 56 | 39 | 40 |
| | **Not at all represented** | 9 | 9 | 9 | 0 | 0 | 23 | 22 | 13 | 8 |
| | **No answer** | 13 | 9 | 5 | 0 | 0 | 0 | 0 | 6 | 16 |
| **Satisfaction with TNC Community Engagement** | **Extremely satisfied** | 7 | 3 | 5 | 0 | 0 | 0 | 0 | 6 | 7 |
| | **Satisfied** | 44 | 45 | 55 | 25 | 43 | 23 | 33 | 48 | 45 |
| | **Unsatisfied** | 24 | 24 | 23 | 50 | 36 | 23 | 33 | 23 | 22 |
| | **Extremely unsatisfied** | 2 | 6 | 9 | 0 | 14 | 23 | 22 | 10 | 5 |
| | **No answer** | 22 | 21 | 9 | 25 | 7 | 31 | 11 | 13 | 21 |
| **Satisfaction with TNC Conservation Work** | **Extremely satisfied** | 9 | 9 | 5 | 0 | 0 | 8 | 11 | 6 | 7 |
| | **Satisfied** | 54 | 48 | 55 | 75 | 50 | 31 | 44 | 58 | 56 |
| | **Unsatisfied** | 17 | 24 | 27 | 0 | 36 | 46 | 33 | 16 | 15 |
| | **Extremely unsatisfied** | 0 | 3 | 0 | 0 | 0 | 8 | 11 | 6 | 3 |
| | **No answer** | 20 | 15 | 14 | 25 | 14 | 8 | 0 | 13 | 19 |
| **Donate or spend money** | **Have done this** | 54 | 52 | 59 | 75 | 50 | 15 | 33 | 35 | 49 |
| | **Would do this** | 19 | 9 | 5 | 0 | 21 | 8 | 11 | 16 | 21 |
| | **Would not do this** | 15 | 24 | 23 | 25 | 7 | 62 | 44 | 26 | 14 |
| | **No answer** | 13 | 15 | 14 | 0 | 21 | 15 | 11 | 23 | 16 |
| **Donate labor (volunteer)** | **Have done this** | 33 | 39 | 36 | 75 | 36 | 38 | 33 | 19 | 29 |
| | **Would do this** | 44 | 39 | 41 | 25 | 29 | 31 | 22 | 39 | 41 |
| | **Would not do this** | 7 | 9 | 9 | 0 | 0 | 23 | 33 | 13 | 11 |
| | **No answer** | 15 | 12 | 14 | 0 | 36 | 8 | 11 | 29 | 19 |
| **Attend meetings on conservation** | **Have done this** | 30 | 36 | 50 | 50 | 50 | 46 | 22 | 23 | 21 |
| | **Would do this** | 50 | 42 | 41 | 50 | 21 | 23 | 33 | 29 | 40 |
| | **Would not do this** | 11 | 18 | 9 | 0 | 0 | 31 | 33 | 19 | 18 |
| | **No answer** | 9 | 3 | 0 | 0 | 29 | 0 | 11 | 29 | 22 |
| **Limit or change recreation** | **Have done this** | 31 | 36 | 32 | 50 | 57 | 31 | 22 | 26 | 25 |
| | **Would do this** | 43 | 30 | 41 | 50 | 21 | 15 | 11 | 32 | 45 |
| | **Would not do this** | 19 | 24 | 18 | 0 | 7 | 38 | 56 | 26 | 19 |
| | **No answer** | 7 | 9 | 9 | 0 | 14 | 15 | 11 | 16 | 11 |
| **Follow organizational recommendations** | **Have done this** | 44 | 42 | 45 | 50 | 50 | 38 | 44 | 45 | 38 |
| | **Would do this** | 26 | 15 | 23 | 50 | 14 | 0 | 11 | 19 | 36 |
| | **Would not do this** | 9 | 18 | 18 | 0 | 0 | 46 | 33 | 16 | 8 |
| | **No answer** | 20 | 24 | 14 | 0 | 36 | 15 | 11 | 19 | 18 |

The degree to which participants *feel* represented appears more indicative of conservation satisfaction that *observed* representation. Among those who reported feeling their interests mostly or fully represented by TNC, the vast majority were satisfied with TNC's conservation work around the ZPP. Conversely, those who felt not at all represented were largely unsatisfied. This suggests that greater feelings of representation in conservation correspond with more positive responses to it. However, discrepancies exist between actual representation, as determined through document review, and perceived representation, as reported by survey respondents. This is especially notable among the rancher group, which is arguably the most well-represented in TNC documents; yet, respondents in this group were least likely to report feeling fully or mostly represented, and had the lowest levels of both conservation and community engagement satisfaction. Among individual respondents, 93% of those who reported feeling fully or mostly represented were also satisfied or extremely satisfied with TNC's community engagement work, compared to 0% among those who reported feeling not at all represented, indicating a possible link between community engagement and perceived representation. There are no apparent patterns in willingness to contribute conservation actions.

Beyond quantitative scoring, respondents were asked two supplemental, open ended questions meant to capture qualitative perceptions of TNC's conservation work: (1) *Have TNC staff missed anything important in their conservation of the ZPP?*, and (2) *Do you have any other thoughts, concerns, or suggestions about conservation or community engagement at the ZPP*? In total, 39 participants responded to at least one of those questions, elaborating upon their perspectives. These responses were both positive and

negative, and often contradictory, as one might expect in any complex social environment, though recurrent themes emerged.

Several respondents noted that TNC had lost focus on biodiversity conservation targeting flora and fauna, and should further limit human activity on the ZPP. A common critique in that vein is that TNC is too reliant on grazing-based management and too aligned with rancher interests, at the expense of "nature" or environmental quality. Still, others expressed a desire for more grazing and hunting on the preserve, noting that hunting can control disruptive species, while local ranchers are good caretakers of the land and should be "set up for success." Multiple participants determined that TNC could cultivate greater community involvement, viewing it as an opportunity to increase efficacy. Specific suggestions included keeping locals more informed of the work TNC is doing; actively seeking local participation in restoration projects and ZPP stewardship; working with smaller landowners to advance habitat conservation across the landscape; and organizing volunteer weeding labor as an alternative to chemical sprays. In various ways, respondents called for greater inclusion of diverse perspectives in management: through incorporation of Indigenous/traditional ecological knowledge, better communication with and access for Indigenous persons with a cultural connection to the site, engagement of minority groups overall (Black, Indigenous, people of color), and exploration of non-market-based value systems in decision making.

## 5. Discussion

This study has added empirical evidence to the growing field of place-based conservation. Although place-based conservation is expected to advance participation,

representation, local knowledge, and situated interests to a greater extent than previous conservation models, the dynamics of representation and community response in such an arrangement are unknown. Furthermore, while fair representation is a common prescription in recent conservation literature, few studies have explored the effects of discursive representation on community support, illuminating its practical benefits or lack thereof. Study findings – particularly, an inverse association between observed representation and positive response among some groups, and misalignment between observed and perceived representation – hint at an interesting relationship: public support may be gained without intentional discursive representation, and discursive representation does not assure public support. These findings suggest that intentional, diverse knowledge representation may not be a silver bullet in conservation practice, or even a prerequisite to community satisfaction.

Nearly all participants reported feeling fully, mostly, or somewhat represented in TNC's work, whether or not TNC solicited or intentionally represented their unique environmental perspectives. This reflects the fact that at least some of TNC's knowledge overlapped organically with that of local user groups, as gleaned from survey results. Points of agreement include primary ecological concerns (weeds, grazing, climate change, development), preference for an ecologically-oriented conservation strategy, and conventional views on human-nature relationships. These results are in alignment with social theory of representation, which states that individuals may feel represented even when they have not intentionally been (Young, 2010). This may occur when users feel that their interests are being considered, as through community engagement, or when their perspectives are elevated, even incidentally (Young, 2010). The social environment

surrounding the ZPP, combined with TNC staff's sustained engagement work, seems to have produced a baseline of satisfaction and incidental representation among most user groups. On the contrary, concerted representation of the rancher group did not secure broad satisfaction, suggesting that discursive representation alone may be insufficient to reconcile significantly divergent environmental knowledge; for example, different perspectives on what constitutes stewardship and conservation behavior on working lands.

From a practical perspective then, it may not be necessary for managing organizations to seek out and represent diverse knowledges or discourses, particularly where a majority of the local population already shares in normative ecological understanding. However, even when broad support is a given, conservation practitioners should still strive for diverse knowledge representation and user empowerment through discourse. This is especially true in socio-political contexts which have excluded and marginalized specific groups in the past, whether Indigenous persons, other racial, ethnic, or social minorities, those with low economic impact or political clout, or scientific non-experts. Generally, decision making is strengthened by broadening one's social understanding and knowledge base. There is much to be gained from this approach, in terms of novel and uplifting ecological solutions, as well as environmental justice through a representative approach to decision making.

Despite efforts by TNC staff to be both locally engaged and responsive, site management documents reflect the hegemonic discourse of conservation science. This includes a clear preference for ecological knowledge and technocratic conservation strategies, followed by a more recent shift to a neoliberal conservation model. This framing

perpetuates imbalances in knowledge and power without necessarily improving ecological outcomes, as predicted by existing literature on the shortcomings of a market-focused approach (Buscher, 2012; Dressler & Roth, 2011; Fletcher & Buscher, 2017; Holmes & Cavanagh, 2016). Only those user groups with expert scientific knowledge (environmental professionals, other conservation organizations) or economic clout (ranchers, other large landowners) are represented in the position of "partner," able to work alongside TNC, co-produce or contribute knowledge, and advance conservation goals. While most other user groups are characterized as passive beneficiaries, if at all, the relative lack of representation of Indigenous persons stands out as problematic. Furthermore, there are no references in official documents to more equitable inclusion of other racial, ethnic, or social minorities. There is ample room for TNC staff to increase representation simply by including more people/groups in their official discourse, if not representing the knowledge and discourse of those groups themselves. Although the elevation of local ranchers' knowledge denotes a departure from typical top-down practice, this case suggests that a more engaged approach to conservation is no guarantee of equitable inclusion for all. It is quite possible for practitioners to incorporate an awareness of place (i.e., adopt a place-based approach) and include select local knowledges while excluding others. As with prior conservation models, place-based practitioners still must make a concerted effort to overcome colonial, neoliberal, or technocratic thinking which perpetuates underrepresentation and disempowerment of socially non-dominant groups.

Contribution as an indicator of response goes a step beyond satisfaction, revealing not only internally felt responses, but propensity for pro-conservation action. Indeed, the

goal of TNC in this case is not only to gain community support, but to transmit conservation behavior across the landscape, affecting the ZPP and beyond. Excluding ranchers, large landowners, and other environmental professionals, most user groups studied have been portrayed by TNC as beneficiaries of conservation practice, rather than partners. Many survey respondents in these user groups have already contributed through prescriptive actions. Again, this may be attributable to an overlap in local knowledge and interests which attracts various users to support TNC's work, regardless of how they are represented. However, a great many others indicated that they would be willing to do these things and have not, despite an overwhelming expression of interest in conservation of the Zumwalt Prairie. This is in alignment with existing literature, which finds that environmental concern and conservation values do not inherently lead to action (Brehm et al., 2013; Kyle et al., 2004; Larson et al., 2013). This finding also signals an opportunity for passive users to be framed as partners in and contributors to conservation, to be empowered accordingly, and for TNC to operationalize this community will. Although ranchers were most likely to state that they would not participate in prescriptive conservation behavior, it should not be assumed that members of this group are not practicing conservation in their own way. This is a detail that could and should be collected by practitioners in a place-based initiative, revealing variations on conservation behavior.

### 5.1 Working with variability

The field of conservation science has embraced the notion of social and discursive variability, though practitioners have displayed discomfort in operationalizing social scientific data which reflect it; for example, effectively representing and incorporating

diverse ecological knowledges (Bennett et al., 2017; Fox et al., 2006). Certainly, qualitative and contextual data are a challenge to work with and do not generate generalizable management solutions. While the present study relies on the heuristic of user groups, responses betray considerable heterogeneity within these units. This suggests that such groupings have limits for research and analysis, and may also reduce the efficacy of representation meant to reflect "group" discourse and knowledge, both inconvenient problems for researchers and practitioners. Yet, nuanced social data are a truer reflection of the complexity which informs every socio-ecological system; which has significant implications for the sustainability and social transmissibility of conservation behavior. Practitioners must find a way to represent and respond to social and knowledge variability, perhaps first by employing those trained in social scientific theory and methods. This will require practice, trial and error, and is likely dependent on available resources as well as organizational will. Although representation of diverse knowledge raises the potential for contradiction, it should also reveal areas of common ground; points from which to build a conservation strategy that aligns with broadly shared interests. It may also increase opportunities for oppositional user groups to understand and potentially learn from each other's knowledge and perspectives.

## 6. Conclusion

As is typical of place-based research, the case study presented here is entirely unique in its political, material, social, and economic context. The findings in this case apply to conservation of the ZPP, and should not be expected in all scenarios. However, the overarching themes discussed herein have broad applicability to all place-based

conservation initiatives, particularly those which concern working or multi-use lands. Equality in discursive representation may not be a prerequisite for community support of conservation initiatives. It is also no guarantee of community satisfaction or contributions. Still, diverse and empowering representation is worth pursuing, in the interest of finding common ground, expanding shared knowledge, and reducing marginalization. Conservation science is advancing toward a more nuanced and place-based interpretation of socio-ecological relationships, flexibility in ecological management, and just inclusion of non-expert perspectives; toward working with local resource users, rather than against them or in spite of them, for mutual social and ecological benefits. The interest is there, but practitioners still have much to learn about executing and troubleshooting a place-based initiative. Moving forward, case studies like this will make an important contribution toward understanding the practical dynamics, limitations, and opportunities of such an approach.

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## Chapter 8 Conclusions

As environmental degradation and climate change continue to plague our planet's social and ecological systems, nature conservation stands as a critical tool in the fight for resilience. The field of conservation science has come a long way, from early iterations of wilderness protection and fortress conservation which eschewed human presence, to resource co-management, neoliberal conservation, and community-based conservation models meant to stimulate community development and democratize management (Adams & Hutton, 2007; Berkes 2007, 2009; Vaccaro et al., 2013; Western et al., 1994). From a standpoint of equity and environmental justice, these transitions suggest a welcome change from top-down, command-and-control style management which has marginalized human communities in the past, especially Indigenous peoples, subsistence resource users, and scientific non-experts (Brechin et al., 2003; Duffy, 2010; Jacoby, 2014; Vaccaro et al, 2013).

A key element of these approaches, particularly community-based conservation and co-management, is their supposed attention to local context, knowledge, and human needs, as well as human capacity to participate in conservation. Humans are no longer cast as bystanders to expert-driven conservation, or inherent threats to biodiversity. Rather, they are recognized as integral components of linked socio-ecological systems, holders of valuable knowledge and experience, and potential champions of stewardship, sustainable use, and conservation (Berkes, 2007; Western et al., 1994; Ruiz-Mallen & Corbera, 2013). However, numerous case studies have revealed shortcomings in the realization of this vision. Entrenched power structures are difficult to overcome; knowledge integration poses

a practical challenge, particularly where local or traditional knowledge contradicts Western scientific understanding; community engagement remains superficial or consultative, but not truly collaborative; practice is dominated by absolutist thinking, though human-nature relationships are socially constructed and culturally bound (Berkes, 2009; Bohensky & Maru, 2011; Cinner et al., 2012; Demeritt, 1994, 2002; David-Chavez & Gavin, 2018; Ece et al., 2017; Escobar, 1998; Raik et al., 2008; Ross, 2011). Arguably, these issues may be attributable to a general lack of social scientific expertise within the field of conservation (Bennet et al., 2017a,b; Rust et al., 2017). Nominal interest in human factors – threats, opportunities, challenges, dynamics – has grown over the past several decades, yet social understanding seems to have lagged (Fox et al., 2006).

Place-based conservation marks a recent transition in conservation thinking which builds on some elements of a community-based model; namely, conservation "by, for, and with the local community" (Western & Wright, 1994). Place-based conservation is deeply rooted in interdisciplinary, social scientific theory, methods, and praxis (Stewart et al., 2013). This approach necessitates greater awareness on the part of conservation practitioners of situated conditions – social, cultural, economic, political, material – which affect human-nature relationships; solicitation of local ecological knowledge; community involvement in planning, data gathering, and resource management; and operationalization of local perspectives in conservation practice (Stewart et al., 2013). The overarching notion here is that context matters, social dynamics matter, and conservation practitioners can and should understand and respond to them. This is, perhaps, one way to overcome power imbalances, unsatisfactory social outcomes, and ecological failures seen in the past. Place-

based conservation is, theoretically, one way to get regular people (i.e., non-scientists) involved in conservation, and to make practice meaningful to those who rely on place-based ecosystems (Flint, 2013; Theodori & Kyle, 2013). This approach holds particular promise for working landscapes, wherein human actors are uniquely connected to natural resources, wield a great deal of influence over environmental conditions, and are dependent upon sustainable use. However, at present, the field of place-based conservation is largely theoretical; its theories have not been well-examined in case study literature, nor have scholars worked out how to translate theoretical concepts into practice (Williams et al., 2013).

With this dissertation research, I have sought to contribute to the field of place-based conservation in two notable ways. Firstly, I have provided a boundary object framework which offers a somewhat simplified depiction of social relationships affecting conservation behavior. This framework can be used by researchers in either an academic or professional context to design research or develop appropriate questions within designated content categories. Furthermore, it may be used by practitioners to structure interdisciplinary discussions about social elements of conservation, to guide their own field-based inquiries, or to conceptually organize place-based information. In other words, the ASK framework provides a tool for bridging place-based conservation theory and practice. Secondly, I have contributed three empirical case studies to the literature on place-based conservation, beginning to fill numerous lacunae regarding the lived social dynamics of place-based practice. Though all concerning the same site, the Zumwalt Prairie and Zumwalt Prairie Preserve (ZPP), these three individual studies capture distinct social

interactions which have not been previously studied in place-based conservation literature. In Chapter 5, I explored interactions between a conservation organization and local actors' agency as the former sought to promote conservation behavior and socio-ecological resilience across the Zumwalt Prairie landscape. In Chapter 6, I identified sense of place markers among two distinct user groups of the prairie, and discussed opportunities for translating place meanings and attachments into actionable conservation values. In Chapter 7, I critically examined discursive representation of user groups and their knowledge in ZPP site documents, and considered relationships between knowledge representation in and community responses to managed conservation. These three studies reflect nowhere near the full range of possible applications of the ASK framework, though they do model potential takes on how it can be used, to generate both inductive information for theory building and data which are useful to local practitioners.

The three studies presented in Chapters 5-7 constitute a dyadic reading of the ASK framework, through which the elements of agency, sense of place, and knowledge were considered individually in their relationship to the central object, conservation behavior. As noted in Chapter 3, this is a wholly appropriate and useful approach to the framework, and may prove more manageable than attempting a full, multi-dimensional study all at once. However, as also noted, I propose that the combination of these three factors (ASK) will provide the most holistic and useful perspective on users' conservation behavior. Although my studies engaged differing arrangements of user groups, the Rancher group was consistently included across all studies. Therefore, I will consider the Rancher experience in relation to all elements of the framework, as a means of (1) determining the

suitability of framework components for questions of conservation behavior, and (2) deepening understanding of the interacting social dimensions that influence Rancher conservation behavior, which is of utmost interest to ZPP conservation practitioners.

**Agency, sense of place, and knowledge for the Rancher user group**

Ranchers were engaged in multiple ways across the three studies included herein: 10 ranchers who lease land on the ZPP were interviewed in person, with follow-up via email, as was one additional local rancher who does not lease ZPP land (Chapters 5 & 6). Three others responded to an open-ended, interview-style online questionnaire (Chapter 6), and 13 self-identified ranchers participated in the knowledge survey (Chapter 7). Ranchers were also studied via participant observation, during a cattle move on the ZPP in October 2020. As previously described, the behavior of local ranchers is immensely important to TNC's work on the ZPP and in the larger Zumwalt Prairie landscape. Ranchers have an outsize impact on land quality, and the ability to control their own grazing management decisions on privately owned ranchlands adjacent to the ZPP. TNC staff have an interest in understanding the mechanisms which drive ranchers' conservation behavior, hopefully allowing them to influence behavioral change in line with the Conservancy's vision for the Zumwalt landscape. While TNC staff have been locally engaged in the Wallowa County social scene to varying degrees for two decades, essential dynamics surrounding social interactions, environmental value drivers, and individual decision making remained unclear. The ASK framework was applied in this case a means of clarifying some of those dynamics, and providing guidance for TNC's future engagement with local ranchers.

The results of the three studies, specifically with regard to the Rancher user group, indicate that the elements included in the ASK framework are appropriate and indicative of conservation behavior. Ranchers have chosen to practice conservation on their home ranches and elsewhere – for example, by reducing grazing intensity and rotating cattle, maintaining stubble height, restoring streambanks, conserving water, and attempting to control invasive weeds – based on their *knowledge* of ecological threats and processes; namely, weeds, water quantity and quality concerns, and the potential for loss of grasses which sustain cattle. Furthermore, their preferred conservation strategies align with their beliefs and practices regarding wise use and land stewardship; specifically, grazing-based management as a tool for controlling weeds and maintaining ecosystem health. Ranchers' *agency* allows them to make conservation upgrades on their home ranches that align with their interests, though their capacity to make such changes is also dependent on their access to financial resources and multiple grazing leases. Those with more resources and access to land can, for example, graze each area less intensely, or implement less cost-effective but more eco-friendly management strategies at home. Others have a strong desire to practice conservation, for example by planting native grasses, but lack the time and money to realize their goals. Finally, although economic outcomes and dependence are inevitable determinants of environmental behavior, ranchers have also emphasized the role that place identity and meaning (i.e., *sense of place*) play in their decisions to conserve or sustainably use prairie land. The Zumwalt Prairie is a special place to which they are connected through family history, labor, and sensory experience. These attachments strongly influence their desire to keep the prairie ecologically intact, as well as a functional, working landscape.

Notably, elements of knowledge, agency, and sense of place do not stand alone, but interact and influence one another. For example, knowledge gives ranchers an awareness of threats, and sense of place gives them the desire to conserve, but conservation behavior cannot occur to a meaningful degree without agency or power to act. Likewise, if ranchers have resources and power but no personal connection to place or awareness of ecological issues, they likely will not act to conserve.

The positioning of *socio-ecological resilience* within the ASK framework – inside the boundary of social context but outside of the core agency-sense of place-knowledge arrangement – is also supported by study results for the Rancher group. Ranchers' conservation behavior does impact their socio-ecological resilience: they give themselves greater stability and security by working with TNC (for those that lease ZPP land), grazing sustainably, and practicing conservation in a way that ensures their own livelihoods and ability to pass down land in good condition. However, as the framework suggests, conservation behavior is not the sole determinant of resilience. Rather, resilience is defined and determined by the context within which it is studied. Regardless of their individual conservation behavior, ranchers' resilience depends on an economic climate that can support ranching livelihoods (economic); governance systems and discourse which are friendly toward grazing on federal and protected lands (political); access to healthy grasslands outside of their own private properties or home ranches (material); and a social environment in which they represent a strong share of local stakeholders (social).

This implies that conservation behavior, whether undertaken by ranchers themselves or orchestrated by TNC, cannot fully ensure the socio-ecological resilience of

ranchers on the Zumwalt Prairie. Still, conservation has been identified as an indispensable activity, whether one's concern is maintaining a ranching operation, protecting threatened flora and fauna, or preserving a treasured landscape. The ASK framework and the studies presented here offer some insights into the social factors which underlie ranchers' conservation behavior. It is clear that TNC staff cannot or should not expect ranchers to adopt their organization's specific prescriptions for conservation. While it will likely be ineffective for TNC staff to force their own approach to conservation (e.g., owing to barriers posed by actor agency), they can certainly ascertain and try to support or supplement actions already underway on privately owned ranches. There is a need for TNC staff to understand what conservation actions ranchers are taking, what else they would like to do (if anything), and why, then identify opportunities to partner or collaborate, co-produce knowledge, or impart expert scientific advice where appropriate. In other words, TNC staff can advance conservation beyond the ZPP, but must be open to varying interpretations of what conservation looks like, how it is practiced and to what effect. As reported by interviewees, having a flexible and collaborative relationship with TNC is perceived as mutually beneficial.

An important consideration here is the extent to which TNC can be deeply engaged with individual ranchers around the ZPP. Though they currently lease land to five operations, and have involved those ranch managers disproportionately in preserve strategy and management discussions, it is not plausible that all local ranchers could participate to the same extent. The local TNC office lacks staff capacity to accommodate that level of engagement, and to lease ZPP land to all who want it would defeat the purpose of the

preserve. Still, there is significant opportunity for TNC to partner with conservation-minded ranchers in Wallowa County, including those who do not have the privilege of leasing ZPP land. It can be expected that many ranchers in the area share the same, reported feelings of place meaning and attachment, and are drawn to sustainable use of their private properties. The ASK framework and study findings provide TNC with some entry points for further discussion and engagement with such individuals.

**Transferability, limitations, and next steps**

The ASK framework was well-suited to this multifaceted case study of the Zumwalt Prairie and Zumwalt Prairie Preserve, and its individual components proved relevant to the context. Based on these findings, I would recommend the framework as a tool for conservation practitioners and researchers seeking a nuanced understanding of place-based social factors which might hinder or advance their work. Although my three case studies applied the framework within the context of grassland conservation, particularly highlighting the experiences of local ranchers, there is no reason to limit its use to that type of environment or user group. Rather, the framework should prove useful in exploring conservation in any socio-ecological system.

Social factors of agency, sense of place, and knowledge would presumably be influential in any conservation environment (e.g., working landscape, national park, tourist site) or setting (e.g., urban or rural), with regard to various resource types (e.g., land, water, flora and fauna), and among all sorts of users (e.g., land managers, recreationists, Indigenous persons). In any case, this framework can guide practitioners toward key dimensions of place which may help them reduce conflict, understand individual

conservation behavior, and improve socio-ecological conservation outcomes. That said, I expect that this framework will have the most utility when applied to contexts in which (a) local human communities possess strong and complex relationships to place which create conflict, and (b) humans make significant use of the conservation resources in question, as in working landscapes. Where practitioners are seeking behavioral understanding and change among those whose actions have the most immediate and significant impacts on natural resources (e.g., land managers), focusing an ASK assessment on those users holds the greatest potential for measurable conservation success. However, I do recommend that framework components be applied toward a greater understanding of *all* user groups in a place, including their attitudes, interests, and capacities with regard to conservation. This is essential for advancing social equity, inclusivity, and environmental justice alongside ecological protection. Furthermore, this approach will provide a more holistic picture of the social scene in which conservationists are working, and perhaps reveal unexpected opportunities for partnership.

It is my conclusion, based on this research, that the ASK framework is a useful addition to the scholarship of place-based conservation, and to socially-conscious, place-based practice. However, it must be noted that this dissertation research provides a limited sample of cases studies, based on a single location, from which to draw that conclusion. More research will be needed to affirm its utility; with different locations, user groups and resources, with different conservation foci, governance systems and ownership arrangements, both before conservation work begins and amid ongoing interventions. I have applied the ASK framework in this instance to a conservation project which has been

ongoing for two decades. However, it would be interesting to explore its use as a planning and data gathering tool early in a conservation project, as ASK-based details may inform more place-appropriate interventions from the start.

Though the ASK framework provides a novel guide for conceptualizing, researching, and operationalizing notable determinants of conservation behavior, it does not provide a concise, step-by-step recipe for practitioners. In other words, it may not do enough to simplify the theoretical complexity that underpins it and make place-based conservation truly accessible to practitioners (especially those not trained in social scientific thinking and methods). This will remain unknown until more practitioners attempt to apply the ASK approach in their work. Finally, although the framework components themselves can be transferred, the results are not generalizable. It should not be expected that all contexts will generate findings comparable to those from the Zumwalt Prairie. For example, working lands which are not privately owned, as is the case with most working ranchlands in eastern Oregon, should yield quite different results. This is not a weakness from the perspective of place-based conservation, which embraces difference, though results which are too specific or contradictory can prove challenging to organizations dependent upon generalizability and broad prescriptions.

Research and results discussed within this dissertation may be of interest both to scholars in the field of place-based conservation, or conservation social sciences generally, as well as to practitioners hoping to engage more extensively with social factors in their work. The field is moving toward greater inclusion of human perspectives, capacities, and

situated knowledges, all of which hold promise for conservation futures which engage a diverse range of actors, and disseminate an environmental ethic well beyond the boundaries of parks and protected areas. Yet, effectively capturing and working with social complexity will present an ongoing challenge to practitioners. Case studies and conceptual frameworks like those presented here build upon a shared base of scholarly and practical knowledge, and are a crucial step toward more just, inclusive, and effective conservation which is truly place-based.

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## Appendix A
## Semi-Structured Interview Guide

Describe your relationship with TNC. How are you involved with TNC's conservation efforts around the Zumwalt Prairie Preserve (ZPP)?

How/why did that relationship begin?

Has TNC suggested or required that you make any behavioral changes within the ZPP? Please explain.

[Alternatively, ask about suggested behavior beyond the preserve, as applicable]

Have you followed these guidelines? Why/why not?

Overall, what has been your impression of working with TNC/the conservation and engagement process around ZPP?

Do you think TNC staff have missed anything important in their conservation plans? What would you do differently if you could make decisions for the ZPP?

Has engaging with TNC changed your perspective on environmental issues, conservation, or human-nature relationships? Please explain.

Do you think that TNC staff have learned anything from you or changed their perspectives? Please explain.

Do you feel environmentally secure? Have you seen or experienced environmental changes that worry you?

Do you feel you have the power to address environmental issues facing your community? Do your actions make a difference? How so?

Have you been as involved with planning and decision-making at the ZPP as you would like? Please explain. Do you feel you have a say in what decisions are made?

Have you recently made any other changes to your environmental behavior that were not specifically recommended by TNC, or related to the ZPP?

Have you been able to make all of the changes, or take all of the conservation actions you would like? Please explain.

Besides economic benefits, what other factors influence your decision to practice conservation (or not) on your home ranch?

# Appendix B
# Outpost Content Analysis Codebook

| Descriptive Code | | | |
|---|---|---|---|
| Landscape features | 101 | Sustenance, Nourishment | 701 |
| Landmarks | 102 | Healing | 702 |
| Landscape interactions | 103 | Renewal, Transformation | 703 |
| Plants | 104 | Letting go | 704 |
| Plant interactions | 105 | Freedom, Escape | 705 |
| Animals, Bugs | 106 | Possibility, Hope | 706 |
| Animal Interactions | 107 | Relaxing | 707 |
| Sounds, Hearing | 201 | Gift, Gratitude | 708 |
| Sights, Seeing | 202 | Dynamism, Change | 801 |
| Scents, Smelling | 203 | Mythical | 802 |
| Tastes, Tasting | 204 | Spiritual | 803 |
| Textures, Touch, Feeling (physical) | 205 | Mystery, Hidden things | 804 |
| Movement or action in nature | 206 | God, Religion, Prayer, Sacred | 805 |
| Weather | 301 | Learning | 901 |
| Vulnerability | 302 | Teaching | 902 |
| Harshness, Power (of nature) | 303 | Journey | 903 |
| Exposure (to elements) | 304 | Discovery (in nature) | 904 |
| Sky, Clouds | 401 | Self-reflection, Finding oneself | 905 |
| Sun, Moon, Stars | 402 | | |
| Vast(ness), Open(ness) | 501 | | |
| Emptiness | 502 | | |
| Open country | 503 | | |
| Wilderness, Wildness | 504 | | |
| Smallness (of humans) | 505 | | |
| Lonely, Loneliness | 506 | | |
| Solitude, Isolation | 507 | | |
| Past | 601 | | |
| History, Time | 602 | | |
| Ancestors | 603 | | |
| Story | 604 | | |
| Ancient, Old | 605 | | |
| Family, Loved ones | 606 | | |
| Pets | 607 | | |
| Home | 608 | | |
| Memory | 609 | | |
| Geology | 610 | | |

## ZUMWALT PRAIRIE KNOWLEDGE SURVEY

PERSONAL INFORMATION

1. How long have you lived in Wallowa County? (select one)

- ❑ Less than 5 years
- ❑ 5-10 years
- ❑ 10-20 years
- ❑ More than 20 years
- ❑ I do not live in Wallowa County

2. What is your age group? (select one)

- ❑ 18-25 years old
- ❑ 26-35 years old
- ❑ 36-45 years old
- ❑ 46-55 years old
- ❑ 56-65 years old
- ❑ Over 65 years old

3. Please select any of the following options that describe you:

- ❑ Wallowa County homeowner
- ❑ Wallowa County landowner
- ❑ Wallowa County business owner
- ❑ Indigenous person and/or American Indian tribal member
- ❑ Conservation or environmental services professional
- ❑ Rancher
- ❑ Farmer
- ❑ Hunter or angler
- ❑ Outdoor recreationist (includes non-hunting activities such as hiking, camping, birdwatching)

4. How would you characterize your relationship to the Zumwalt Prairie? (select all that apply)

- ❑ I live within or nearby the prairie
- ❑ I work on the prairie physically, and/or my work focuses on the prairie
- ❑ The prairie is an economic resource for me (example: a place for cattle grazing, an attraction for tourists who spend money at my business)
- ❑ I use the prairie for recreation (example: sport hunting, hiking, birdwatching)
- ❑ I participate in cultural or community events on the prairie (example: planting and weeding days, artist or writing retreats, food gathering or subsistence hunting)
- ❑ I have an emotional or spiritual connection to the prairie
- ❑ I have a cultural connection to the prairie
- ❑ I do not interact with the prairie and do not have any significant relationship to it
- ❑ Other (please fill in):

ENVIRONMENTAL PERSPECTIVES & ACTIONS

5. Humans have a responsibility to care for land:

- ❑ Agree
- ❑ Disagree

6. If you answered **Agree** to the previous question, please explain what "caring for land" means to you // If you answered **Disagree**, please explain why you feel this way:

7. I consider myself an "environmentalist", or an environmentally-conscious person:

- ❑ Agree
- ❑ Disagree



8. Whether you answered **Agree** or **Disagree**, please explain what "environmentalism" means to you:

9. Individuals must sometimes make personal sacrifices or changes in order to protect the environment and/or natural resources:

- ❑ Agree
- ❑ Disagree

10. Is conservation of Zumwalt Prairie an issue that you care about?

❑ Yes, very much ❑ Yes, somewhat ❑ No, not very much ❑ No, not at all

11. What actions have you taken or would you take to support conservation of the Zumwalt Prairie? (select one option for each line item)

| | | | | |
|---|---|---|---|---|
| **Donate or spend money** | ❑ I have done this | ❑ I would do this | ❑ I would not do this | ❑ Not applicable/ I don't know |
| **Donate labor (volunteer)** | ❑ I have done this | ❑ I would do this | ❑ I would not do this | ❑ Not applicable/ I don't know |
| **Attend meetings to discuss conservation of the prairie** | ❑ I have done this | ❑ I would do this | ❑ I would not do this | ❑ Not applicable/ I don't know |
| **Accept additional business expenses or a loss in revenue (if a business owner/manager)** | ❑ I have done this | ❑ I would do this | ❑ I would not do this | ❑ Not applicable/ I don't know |
| **Change how you manage or use prairie land (if a landowner)** | ❑ I have done this | ❑ I would do this | ❑ I would not do this | ❑ Not applicable/ I don't know |
| **Change or limit your recreational activities on the prairie** | ❑ I have done this | ❑ I would do this | ❑ I would not do this | ❑ Not applicable/ I don't know |
| **Follow specific recommendations from conservation organizations (such as The Nature Conservancy)** | ❑ I have done this | ❑ I would do this | ❑ I would not do this | ❑ Not applicable/ I don't know |

12. What do you feel are the **greatest** threats facing Zumwalt Prairie? (select up to 3 options)

- ❑ Development
- ❑ Climate change
- ❑ Invasive species, weeds, or pests
- ❑ Unsustainable grazing
- ❑ Wildfire
- ❑ Mismanagement by local landowners
- ❑ Mismanagement by conservation organizations
- ❑ Overuse by tourists and recreationists
- ❑ Loss of cultural resources
- ❑ I do not believe that Zumwalt Prairie is threatened
- ❑ No opinion/I don't know
- ❑ Other (please explain):

13. What is the **greatest environmental threat** facing you personally? (does not need to relate to Zumwalt Prairie):



14. Please choose one of the following statements:

- ❑ Zumwalt Prairie should be managed to maximize local **economic** benefit (personal income; business profitability; local tax base; property values).
- ❑ Zumwalt Prairie should be managed to maximize **ecological** benefit (water and soil quality; plant and animal health; native species; ecosystem function).
- ❑ Zumwalt Prairie should be managed to maximize **social** benefit (recreation; spiritual, emotional or cultural connections; heritage; sense of place).
- ❑ Zumwalt Prairie should be managed to maintain a balance between social, ecological and economic needs, even if this means a reduction in benefits across all three areas.
- ❑ No opinion/Don't know

EXPERIENCES WITH CONSERVATION BY THE NATURE CONSERVANCY (TNC) AT THE ZUMWALT PRAIRIE PRESERVE

15. How satisfied are you with TNC's **community engagement** efforts related to the Zumwalt Prairie Preserve?

- ❑ Extremely satisfied
- ❑ Satisfied
- ❑ Unsatisfied
- ❑ Extremely unsatisfied
- ❑ No opinion

16. How satisfied are you with the **conservation work** TNC has done related to the Zumwalt Prairie Preserve?

- ❑ Extremely satisfied
- ❑ Satisfied
- ❑ Unsatisfied
- ❑ Extremely unsatisfied
- ❑ No opinion

17. Do you feel that your interests and environmental perspectives are represented in the conservation work that TNC is doing with the Zumwalt Prairie Preserve?

- ❑ My interests are not at all represented
- ❑ My interests are somewhat represented
- ❑ My interests are mostly represented
- ❑ My interests are fully represented
- ❑ No opinion/I don't know

18. Please indicate how TNC's work with the Zumwalt Prairie Preserve has impacted different areas of your life. (select one option for each line item)

| | | | | |
|---|---|---|---|---|
| **Income/economic security** | ❑ Improved | ❑ No change | ❑ Worsened | ❑ Not applicable/Don't know |
| **Property value** | ❑ Improved | ❑ No change | ❑ Worsened | ❑ Not applicable/Don't know |
| **Recreational opportunities** | ❑ Improved | ❑ No change | ❑ Worsened | ❑ Not applicable/Don't know |
| **Personal connection to the land** | ❑ Improved | ❑ No change | ❑ Worsened | ❑ Not applicable/Don't know |
| **Opportunities to learn about nature and/or sustainable practices on the land** | ❑ Improved | ❑ No change | ❑ Worsened | ❑ Not applicable/Don't know |
| **Access to natural and/or cultural resources that are important to me** | ❑ Improved | ❑ No change | ❑ Worsened | ❑ Not applicable/Don't know |
| **Choices related to livelihood** | ❑ Improved | ❑ No change | ❑ Worsened | ❑ Not applicable/Don't know |
| **Personal freedom** | ❑ Improved | ❑ No change | ❑ Worsened | ❑ Not applicable/Don't know |
| **Health of the natural environment on which I depend** | ❑ Improved | ❑ No change | ❑ Worsened | ❑ Not applicable/Don't know |
| **Social connections (with neighbors, friends, community)** | ❑ Improved | ❑ No change | ❑ Worsened | ❑ Not applicable/Don't know |
| **Overall feelings of security, stability, and well-being** | ❑ Improved | ❑ No change | ❑ Worsened | ❑ Not applicable/Don't know |

19. How often do you use the Zumwalt Prairie Preserve?

❑ Rarely/Never ❑ Yearly ❑ Monthly ❑ Weekly ❑ Daily

20. Do you think TNC staff have missed anything important in their conservation work related to the Zumwalt Prairie Preserve?

❑ Yes
❑ No
❑ No opinion/I don't know

21. If you answered **Yes** to the previous question, please explain what you would do differently if you could make management decisions for the Zumwalt Prairie Preserve:

22. Do you have any other thoughts, concerns, or suggestions about conservation or community engagement at the Zumwalt Prairie Preserve? Please share them below:



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Has your experience of the COVID-19 pandemic had any influence on your responses to these questions?

☐ Yes ☐ No

May I (Dana Hellman) contact you to follow up on your survey responses, or invite you to participate in further research on this topic?
[Please note, this is voluntary and you are under no obligation to say Yes. Answering Yes does not guarantee that I will contact you again in the future; just that the option is available.]

☐ Yes ☐ No

If you answered Yes to the previous question, please provide your name and preferred contact information (phone number or email address):

**Your personal information will only be viewed by Dana Hellman. This information will be kept confidential and never included in any written reports or public documents. No identifying information will ever be shared in connection with your specific responses.**