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Animal agency: wildlife management from a kincentric perspective

JONAKI BHATTACHARYYA[1,3,†] AND SCOTT SLOCOMBE[2]

[1]*School of Environmental Studies, University of Victoria, Victoria, British Columbia V8W 2Y2 Canada*
[2]*Department of Geography and Environmental Studies, Wilfrid Laurier University, Waterloo, Ontario N2L 3C5 Canada*

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Abstract. Co-management of wildlife and landscapes often requires managers to work with Indigenous and conventional Western worldviews. Many cultures recognize animals as non-human persons with decision-making agency. Such perspectives, termed "kincentric ecology," suggest a relational approach to management that differs from convention in North America. We argue that kincentric perspectives are highly relevant to current approaches and issues in wildlife management, including the incorporation of Indigenous Knowledge. Using empirical research with the Xeni Gwet'in First Nation in British Columbia, Canada, we discuss four dimensions of kincentricity key to collaborative management, with notable parallels in emergent systems science: (1) shift in emphasis from human rights to responsibilities; (2) focus on social–ecological systems; (3) acknowledgment of uncertainty and rapid change; and (4) emphasis on locally relevant, empirical knowledge. Wildlife and land management influenced by bioculturally diverse knowledge implies a more systemic approach; adaptive processes; changed goals and values; and shifting responsibilities among stakeholders.

Key words: agency; British Columbia; Indigenous; kincentric; knowledge; management; wild horse.

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[3] Present address: The Firelight Group, 253–560 Johnson Street, Victoria, British Columbia V8W 3C6 Canada.
† **E-mail:** jonaki.b@thefirelightgroup.com

INTRODUCTION

In many cultures, animals are non-human persons, perceived by humans as kin. That "kincentric" way of knowing and relating to non-human animals is one of the fundamental concepts that characterizes and supports many Indigenous people's traditional systems of managing lands, waters, wildlife, and resources, and which even now underlies local management and planning priorities—whether or not it is articulated explicitly to a broader audience (Salmon 2000). Scholars in a range of disciplines recognize that many people experience their relationships to animals and other parts of ecosystems as kin who possess agency within social–ecological systems (Salmon 2000). Yet kincentric (Berkes 2012) approaches remain marginal to the structures, discourses, and professional practices that frame and inform mainstream conservation planning and wildlife management, even when individuals with kincentric worldviews are involved.

While conservationists and wildlife managers from a variety of cultural backgrounds and perspectives acknowledge that animals play a role in social–ecological systems, it is far less common for professionals in those disciplines to view wild animals as fellow actors (akin to humans) who have decision-making agency in those systems. Professionals from the conservation sciences,

planning, and management, in the North American convention, tend to consider wildlife as part of ecological systems, to approach management discussions as subject–object relationships between humans and animals, and to "privilege non-Indigenous ways of being in place" (Howitt and Suchet-Pearson 2006:323, Walker et al. 2013). Considering animals as part of social systems is more of a stretch and for many members of society remains bounded and focused around animals in specific relationships to humans, such as domestic pets, or as the focus of eco-tourism or wildlife awareness programs.

The idea that animals are kin to humans, or "non-human persons," is one that may get mentioned within the sub-sections devoted to traditional ecological knowledge or cultural heritage in reports, assessments, and land-use planning documents, or perhaps quoted for poetic illustration in introductions. Many non-Indigenous scientists hear mention of such ideas from First Nations colleagues. Professional managers and academics from a variety of cultural backgrounds may even experience a sense of kinship with animals themselves, during field work, or in relation to pets at home. Yet those experiences and epistemologies usually remain peripheral to discourse in the natural sciences, because they are often believed to undermine scientific validity and credibility as conventionally defined.

This article explores ways of knowing animals as non-human persons, kin who have agency in relation to humans—as actors whose actions and roles in social–ecological systems interact with, and affect humans. (For the sake of clear communication, we use the common term "non-human persons" in this paper, recognizing the limitations of referring to other beings in terms of what they are not, rather than what they are.) Our discussion is based in a progression of conceptual understanding that has carried across two research projects with First Nations in different regions of British Columbia, Canada. The research results presented below began with a six-year exploratory study of the ecological and cultural relationships among wild horses (*Equus caballus*), people, and landscapes in the Tsilhqot'in (Chilcotin) region. In this article, we explore the implications of research developed by Bhattacharyya (2012) and referred to in the literature (Notzke 2013, Bhattacharyya and Larson 2014). Our research also draws from other research examples and regions, including the Central Coast of British Columbia.

The conceptual understanding of animals as kin who have agency, the meanings of which are explored in this paper, has implications for cross-cultural approaches to management, and may yield alternate approaches to wildlife and habitat management, and resource-use decisions, that could improve current practices. Examining the idea of animal agency and kincentric ecology also has relevance to broader issues and challenges in transdisciplinary work that involves the inclusion of cross-cultural values, knowledge systems, and professions. Recognizing how such ways of knowing may contribute to and alter contemporary and future approaches to management is one important step to addressing a history of distrust, tumultuous relationships, and at times conflicts between First Nations and provincial/federal government over land and wildlife management.

This article explores these understandings and implications first through a short review of animals, agency, and culture, then through a discussion of our case studies and methods. We examine specific instantiations of animals, and particularly horses, as kin in the Tsilhqot'in, followed by a discussion of the conceptual and practical implications of such views. Throughout the paper, we use the terms "ways of knowing," "worldview," and "ontology." All three terms can be accurately applied to the kincentric approaches and cultural understandings that we discuss below. In brief, we use ways of knowing to refer to Indigenous knowledge systems and understandings pertaining to animal–human relationships, worldview to refer to people's understanding of their relationship with the world around them more broadly, and ontology to refer comprehensively to how people understand the nature of existence and being. We use Western to refer to broadly common perspectives and approaches in European and North American societies and culture, and Euro-Canadian to be more specific about derived approaches in our Canadian context.

Animals, agency, kincentric ecology, and culture: a review

Agency is defined as "an action or intervention producing a particular effect," and/or "a being or thing that acts to produce a particular effect or

result" (OED 2015). The first definition can refer to any person or thing that produces an effect (e.g., a river can have agency in erosion), a use of the term that is not inconsistent with conventional views in the profession of wildlife management of animals and their effects on ecosystems. However, the second definition implies intentionality, and this is where worldviews about animals diverge. In this article, we use the term "animal agency" more in line with the second definition: to refer to active decision-making roles that influence and affect social–ecological systems.

Animal–human relationships have emerged as a focal field of interdisciplinary academic research over the last decade, though such studies in the arts, humanities, social sciences, and scientific disciplines date back much farther (Hurn 2012, Buller 2014, 2015). The subject of animal–human relationships is also receiving attention from researchers in a variety of interdisciplinary areas of study, including the human dimensions of wildlife (Manfredo 2008), ethnozoology (Alvares et al. 2011), restoration ecology (Long et al. 2003), education (Oakley 2011, Kapyrka and Dockstator 2012), and the co-management of wildlife and protected areas (Nadasdy 2003, Watson 2013). To many members of Indigenous societies, the idea of recognizing agency, thought, communication, and souls among animals and treating them as fellow persons is not a new or novel conceptual development, but rather an established way of life (Nadasdy 2007, Kimmerer 2013). Some scholars (Ingold 2000, Salmon 2000, Turner 2005, Martinez and Hall 2008) have adopted the term "kincentric" (i.e., kincentric ecology) to refer to the view that animals and other parts of social–ecological systems are non-human persons, our kin or relatives: interdependent, inextricably intertwined. While there are certainly variations in perspective among different peoples, and subtle variations in definition between scholars, the term "kincentric" generally refers to contexts where the natural world is known and understood as a place of familiarity, full of relationships, and other (human and non-human) persons who are also making choices about how to live and interact (Simpson 2001, Nadasdy 2007, Leddy 2017).

A kincentric worldview may extend agency to diverse parts of a social–ecological system, including abiotic and human-made parts, as well as the spiritual realm. Whether it is labeled as animism (Willerslev 2007, Losey 2010) or kincentricity, the ontology underlying kincentric worldviews, and the fundamental principles they imply, often underpins Indigenous people's imperative to respect other animals and parts of the natural world. Although it is frequently invoked in discourse with Indigenous peoples around relationships and behavioral protocols between humans and non-human persons, the word *respect* can hold vastly different connotations and scope for different people (McGregor 2004, Mabee and Hoberg 2006, Clark and Slocombe 2009) and is often misunderstood by people from North American settler cultures as being akin to social courtesy or manners. In contrast, elders from several coastal First Nations in British Columbia, Canada (Brown and Brown 2009), explain respect as a Fundamental Truth that means recognizing and honoring that all beings have a soul, and are capable of thought and feeling, "like people today." Many Indigenous peoples recognize animals as part of familial communities, individual persons who talk among themselves and make plans (Umeek/Atleo 2011).

These deeply rooted concepts reach to the surface of daily interactions among people and other non-human persons. Many Indigenous people explain their worldviews as fundamentally relational, in which humans have responsibilities to care for all relatives (including people, animals, plants, and other landscape elements) and the shared parts of the social, spiritual, cultural, and ecological world that sustain them all (Atleo 2011, Bhattacharyya et al. 2013). While they imply caretaking responsibilities for humans, kincentric worldviews also blur the locus of control in human–animal interactions. Humans bear responsibility for our conduct in relationships with animals or resources. Yet kincentric perspectives recognize that non-human persons have agency and decision-making power when interacting with other parts of social, spiritual, and ecological systems. From kincentric perspectives, humans are less in control of animal populations than conventional approaches to wildlife management suggest.

Among Western scholars, the discourse of particular relevance to our discussion in this article is that which situates animals within cultural and social relationships. Challenging conventional distinctions, Clutton-Brock (1994) characterizes differences between wild and tame

animal behaviors as a spectrum of social adaptation resulting from cultural interactions between people and animals. Using a similarly integrative view, Swart (2005) places wild and tame animals along a continuum in their relationships with humans, with particular regard to the ethics humans apply to the care of animals. The idea of learning and the sharing of knowledge and practices among animals from a single species, as well as across species, is also explored by Samantha Hurn (2012). Hurn points to examples in which animals and humans learn from other animals about medicinal plants (zoopharmacology). Theoretical frameworks have developed around non-human knowledge (Czech 2001), and animal geographies have linked ideas such as kincentricity to actor-network theory and "more-than-human" geography (Instone 2004).

Animals as well as people adapt to places, developing local culture and local knowledge, both of which give them qualities that may be valued, respected, and understood by local human communities. Clutton-Brock's mention of social interactions and local knowledge acquired and shared among animals as well as humans resonates with the perspectives of many Tsilhqot'in people regarding valued characteristics of wild horses from local landscapes. Since Clutton-Brock's discussion focuses on the human domestication of animals, she argues that where people and animals interact, humans act as the elders. However, many Indigenous cultures perceive wild animals as equals or as teachers, suggesting that animals can act as elders to humans, for example, by teaching people what to eat and how to behave (Nadasdy 2003, Pierotti 2010).

The idea that animals hold more experience than humans, and can teach us as elders is a common perspective among Indigenous cultures (Atleo 2011), one that is articulated by scholars of varying origins who work with Indigenous peoples. Clark and colleagues (Clark and Slocombe 2009, Clark et al. 2014) describe how the Champagne and Aishihik First Nations (Yukon Territory, Canada) maintain a relationship with grizzly bears based in the sort of fundamentally respectful, relational values described above. Bears are persons, and as such, interactions between people and bears are social relationships. Elders of the St'at'imc First Nation (Lillooet region, British Columbia, Canada) teach that grizzly bears taught people what to eat, and continue to share many of the same food plants (Senger 2013). Such relationships of people sharing food with and learning from bears are paralleled in British Columbia Coastal First Nations, including Heiltsuk, Kitasoo/Xai'Xais, Nuxalk, Wuikinuxv (Central Coast First Nations Bear Working Group 2013), and Nuu-chah-nulth peoples (Atleo 2011).

The Indigenous kincentric relationships with animals (and other parts of social–ecological systems) that we focus on in this paper are partially related to societies and communities in which generations of people have lived with close proximity and attention to animals and other aspects of the land. However, the kincentric ways of knowing that we discuss here are not merely the result of close proximity or frequent exposure, but rather represent distinctive ways of understanding animal–human relationality that differs between the people of Indigenous and non-Indigenous background in this study. It is a cultural phenomenon in the sense that the kincentric perspectives are shared ways of experiencing, interpreting, and understanding people's relationships with the world around them, which are passed on between people through time. Thus while there may be some similarities in the understandings of land and animals by some non-Indigenous residents of the region, there will still be differences.

Case Study Background and Research Methodology

This research was part of a transdisciplinary doctoral project that took an exploratory, grounded approach, emphasizing inclusivity of local and experiential knowledge, and integration of diverse ways of knowing (Steiner and Posch 2006). We used qualitative methods to understand the perspectives, actions, and values of people from varied cultural groups different from those of the researchers (Babbie 2004) in a region where little prior peer-reviewed research had been done. The research took place over six years (2006–2011), during which approximately 235 field days were spent in the backcountry areas and nearby communities which make up the study area: primarily the territory of the Xeni Gwet'in First Nation, Tsilhqot'in (Chilcotin) region, west central British Columbia, Canada.

Tsilhqot'in case study

Tsilhqot'in territory forms a significant portion of the southwestern Interior of British Columbia, Canada, a region known by the anglicized term "the Chilcotin." It is an ecologically and culturally rich zone, where semi-arid grassland ecosystems reach their northern extent, meeting sub-boreal pine spruce forests laced with lakes, rivers, and peat meadows dominated by grasses, sedges, and willow shrubs. Extensive rivers and lakes in the region flow into the Fraser River system. The Coast Mountain range rings the Chilcotin region to the west and south. Tsilhqot'in territory is rich habitat for a suite of wildlife including grizzly bear, black bear, cougar, wolf, lynx, moose, deer, sandhill cranes, and numerous furbearing mammals, as well as several species of salmon and freshwater fish. The habitat is also home to free-roaming horses, and since the mid-1800s, ranchers have grazed cattle on open range in the region.

The Xeni Gwet'in First Nation is one of six member communities of the Tsilhqot'in First Nations, with approximately 400 people residing in their home Nemiah Valley. Immediately to the north of the Nemiah Valley is a plateau known as Tachelach'ed, where this research was focused. Tachelach'ed (aka the Brittany Triangle, or "the Brittany") is roughly 155,000 ha (383,000 acres) in size, bordered to the west by the Chilko River, to the east by the Taseko River, and to the south by mountains and the Nemiah Valley. Oral histories and written records by European explorers indicate that horses were running wild and being caught for use by people in Tsilhqot'in territory prior to the arrival of the first Europeans in 1808 (Storrar et al. 1977, McCrory 2002). There are a variety of horses that could be labeled tame, feral, or wild ranging freely over land in Tsilhqot'in territory. Populations in the Brittany Triangle were found during this research to exhibit behaviorally wild characteristics, and were considered "more wild" than horses from elsewhere by local knowledge holders.

Current political, economic, and land management decisions made by the Xeni Gwet'in First Nation are made within the context of a long Caretaker tradition, in which each Tsilhqot'in community is responsible for the stewardship, protection, and responsible use of their own Caretaker Area (Bhattacharyya et al. 2013, Tsilhqot'in National Government 2015). This tradition, and the significance of wild horses as part of the landscape to which Tsilhqot'in people have Aboriginal title and rights, was affirmed by the British Columbia Supreme Court (Tsilhqot'in Nation v. British Columbia 2007) and the Supreme Court of Canada. (We use the term "Aboriginal" when referring to matters such as rights and title in a Canadian legal context, as this is the term used and defined in governance. Otherwise, we refer to Indigenous and non-Indigenous peoples, on matters of society, culture, and identity.) After a 25-yr court case spearheaded by the Xeni Gwet'in people, the Tsilhqot'in became the first First Nations in Canada to have their Aboriginal title to a portion of their own territory recognized by the Supreme Court of Canada (SCC 44 2014).

Methods of data collection and analysis

The results discussed in this paper are based on data gathered through a suite of qualitative methods that included review of literature and documented oral history (e.g., court transcripts from the case Tsilhqot'in Nation v. British Columbia 2007); ethnographic methods of participatory observation; semi-structured key informant interviews with 23 participants from a diverse range of cultural and vocational backgrounds; documented discussions with multiple additional community members and members of stakeholder groups; and direct observation of horses and other wildlife (Emerson et al. 1995). Interview participants were identified through participant observation and discussion with community members using a snowball (network) sampling technique (Babbie 2004). All data were gathered under University Research Ethics Approval and a Research Permit from the British Columbia Provincial Government. In addition, a research protocol was voluntarily developed in collaboration with the Xeni Gwet'in First Nation Government, to guide all research activities. Field observation of wildlife included extensive time spent living, hiking, and recording observations in a remote backcountry location populated by free-ranging (wild) horses.

Participant observation and interviews were conducted over a three-year period and recorded through extensive ethnographic field notes. A formal Freedom of Information Request was used to obtain comprehensive provincial government

records concerning horse management in the Chilcotin. Files obtained were dated between 1963 and 1989. Field notes, court transcripts, and interview transcripts were analyzed using a system of repeated coding for categories, patterns, and themes (Miles and Huberman 1994). Data of different types (e.g., interviews, court transcripts, government records, peer-reviewed literature) and from different sources (i.e., individual interview participants and local experts) were triangulated. (Note: Results in this paper rely on narrative excerpts, necessarily privileging human voices. We acknowledge that research into animal agency raises the question of how to access and represent more-than-human voices. Future methodological research might explore this theme.) Qualitative results and interpretations were verified and validated through follow-up visits and consultation with key informants where possible, including Xeni Gwet'in and Tsilhqot'in cultural advisors.

Kincentric Relationships with Wild Horses

Our exploration of animals' agency is grounded in empirical results from the study of wild (free-roaming) horses in Tsilhqot'in territory. In particular, our interviews, observations, discussions, and collaboration with members of the Xeni Gwet'in and Yunesit'in First Nations, as well as other local resident community members (including non-Indigenous people from settler cultures and Indigenous people from other First Nations), yielded insight to local cultural norms in the region, and individual variants in people's relationships with wild horses and other animals. There is, of course, variation in the views of both First Nation and non-First Nation groups, both among members and through time. People's views likely have, and will continue to form, change, and evolve independently, as well as through interaction—with each other and between ethnic groups. Thus in this paper, we refer to ways of knowing and perceiving animals (especially wild horses) that are deeply engrained in Xeni Gwet'in and Tsilhqot'in culture. These ways of knowing resonate with many Indigenous cultures, and with the views of some non-Indigenous people as well. Although people spoke about and behaved toward different animals (species and individuals) in different ways, there was a common tendency for local residents to reference and value equine characteristics that were specific to local wild horses. Indigenous participants, in particular, referred to wild horses and other wild animals less as generalized populations, and more in ways that distinguished between individuals and family groups from specific areas. Indigenous participants also spoke about behavioral norms and decision-making processes for both animals and humans as they choose how to live in the landscape and access food and resources.

There are often nuanced differences between Indigenous peoples and mainstream management agencies in how they conceive of, respond to, value, and speak about introduced animal and plant species, including horses (Robinson et al. 2005, Bhattacharyya and Larson 2014), that elucidate complex differences in how different cultures relate to nature. In his discussions of kincentric perspectives among Indigenous peoples, Martinez (2003) distinguishes between wildness as a state of being that is inclusive of humans, and the 20th-century construction of wilderness, which removed people (figuratively and literally) from nature perceived as pristine. It is worth noting that Martinez (citing Nabhan 1997) uses neglected horses as an example to distinguish between animals in a feral state and those that are truly wild. Ironically, controversy over free-ranging horses in the Chilcotin has often been framed around arguments over whether they are wild or feral. However, to Tsilhqot'in people, the distinction is not necessarily dichotomous. Xeni Gwet'in people recognize a spectrum of wildness among the horses that range in their territory.

Valued characteristics: equine local knowledge and agency

The Chilcotin is a region where people have maintained ongoing interaction and relationships with horses. Wild horses have traditionally been caught and gentled for use, and domestic horses were released onto open range seasonally or sometimes permanently. The characteristics that local sub-populations of wild horses develop by growing up and surviving in the local landscape were named consistently by a number of participants as strengths when it came to cultural and pragmatic uses of tamed horses. Participants who

lived and worked on the land in and around the Nemiah Valley and Brittany Triangle tended to make a greater distinction between local horses, or cayuse, and horses bred or raised elsewhere than they did between wild and tame horses (cf. Pierotti 2010:27). (The term "cayuse," possibly Chinook, refers to "a native [sic] range horse", Merriam-Webster 2011. Historically, a derogatory reference to First Nations' horses, during this fieldwork the term was used positively by First Nations people speaking of local wild horses with pride and admiration.) The characteristics that distinguish local wild and tamed Chilcotin horses from well-bred domestic breeds raised elsewhere are summarized in the following paragraphs.

Tough and fast.—Wild horses local to the Chilcotin are respected for their toughness, endurance, and speed. Wild horses from the Brittany Triangle are known by locals for being particularly fast—a quality that is highly valued by people who use their own horses to chase other wild horses, and to race for prize money in the annual Mountain Races at local rodeos.

> Well they're very hardy, compared to the horses (bred) today. Got more endurance. (IN01b; IN01e)

> I know one guy, he caught a horse in the Triangle, they put him on a race track down in Vancouver somewhere. He did real good on the track. He was fast. (IN13)

Easy keepers.—People call horses "easy keepers" when they require little investment of money or resources to maintain their health. Wild horses from the Chilcotin were described by a number of people as being easy keepers, with particular reference to their strong hooves and ability to forage effectively in the bush, even during harsh winters.

> Yah, the thing about these horses: they got good feet, tough feet. And they know how to rough it. They're easy keepers. (IN13)

> A lot of those [domestically raised] barn horses wouldn't last long out here. You gotta look after them. The quarter horse or the thoroughbreds. . . you gotta look after them all the time. You gotta feed them. (IN01a)

The ability of local horses that came from the wild to remain healthy on local wild plant species without additional hay or grains, and to paw through snow in order to access winter forage (IN01e), is a form of local knowledge and adaptation among the horses, themselves. These qualities are not only crucial to the animals' ability to thrive in local environments, but also have tangible economic implications for the people who use horses in the local terrain and backcountry. A lame horse can become crippled or useless for transporting people and equipment. If a horse cannot get enough nutrition from available forage in the bush, then it becomes dependent upon people to buy and transport feed. In an environment where people have limited income, and must be self-reliant in the bush, these qualities in horses are important to the safety and survival of the horses, and the people relying upon them.

Sure-footed and know local terrain.—Horses that grow up in the bush learn to be sure-footed and develop an intimate knowledge of local terrain. Wild horses in the Brittany Triangle and other parts of the Chilcotin must frequently run from predators through dense forest, over rocky ground with root holes, and through willow shrub wetlands where the ground is a series of hummocks and plunging, muddy depressions.

> . . .They're born out in the bush. You take some of these town horses and you'd kill them off [going through here]. (IN05)

> They know the area. They know where to go. (IN01e)

Participant statements are consistent with our own researcher observations of wild horses in the Brittany Triangle, which moved with fluidity, speed, and suspension through dense burned forest littered with rocks, uneven ground, and small spikes from burned, broken tree stems. This ability is a matter of safety and survival for people riding horses in the backcountry, where a falling or injured horse can harm or kill a rider. Backcountry riders know that trusting the instincts of a reliable horse in the bush can often augment a person's best abilities and decisions about which routes to use around natural obstacles, and the presence of wildlife.

Wildlife savvy and think for themselves.—Horses bred in domestic environments retain acute senses and prey instincts, yet often lack the experience and knowledge to understand which wild animals present a danger, or how to behave in

the presence of danger. Consequently, a domestic horse may startle when it senses wildlife that do not necessarily pose a real threat, or worse, the horse may panic and throw its rider in the face of true danger and predatory wildlife. Wild horses share these instincts, but their reactions are attuned to the local environment through knowledge and experience. They can more easily be a partner whose acute sensory perception helps rather than endangers the rider (IN01b; IN01e).

> . . .A wild cayuse, geldings or mares, they got good sense, too. If they sense danger up ahead, you cannot push them forward. If they know there's danger ahead, won't even go that way. They'll go around it. (IN01a)

Locals who live and work with wild horses from around the Brittany Triangle and Nemiah Valley credit the horses that come from the wild with being particularly intelligent. Participants gave numerous examples of wild horses, once caught and accustomed to humans, being easier to train and less prone to senseless accidents than horses bred and raised in domestic circumstances (IN01a; IN06).

All of these traits and behavioral tendencies that participants named as valued characteristics among local wild horses, particularly horses in the Brittany Triangle, indicate the ways in which those horses have developed survival skills and physiologies that serve them well in the local environment. Yet these conversations are also indicative, perhaps even more so, of the relationships between local people and their horses that are also local. By naming certain characteristics prized in horses, people are also identifying the traits and characteristics that are culturally valued and pragmatically necessary in that place, the horses' habitat, and society. The quotations above illustrate the functional roles and cultural values by which wild horses and tamed wild horses are integrated with local social–ecological relationships.

Essentially, the characteristics that people describe as valued traits among wild horses in the Chilcotin are a form of equine local knowledge and practice. In this sense, the wild horses of the Brittany Triangle have adapted to the place, developing a local culture and local knowledge. This is knowledge and practice acquired through generations spent surviving on and knowing the same landscape as the local people, and it is valued, respected, and understood within the local culture and way of knowing of the Xeni Gwet'in people, and some non-Indigenous people who live in the same area. While these perspectives are not likely shared by all Xeni Gwet'in people, they were expressed consistently by participants in this study who have local, experiential knowledge of the wild horses in the Brittany Triangle. Our results demonstrate that there is a commonality of skills and knowledge needed to survive, function, and thrive in the local landscape, which allows some local people to recognize and value the local knowledge of wild horses. They give credit to the horses' agency in decisions about territorial range and movement, forage and grazing distribution, and interactions with other ecosystem elements and wildlife. People and horses earn respect for their local knowledge, strength of character, and smart behavior in similar ways.

Horses as neighbors, family groups, individuals

In addition to the valued functional characteristics of horses, there are deep, implicit ways in which Xeni Gwet'in cultural identity includes free-roaming and wild horses. Horses have been integrated into the landscapes, livelihoods, and lives of Tsilhqot'in First Nations for at least 250 yr (Storrar et al. 1977). Horses are a culturally enriching and facilitating species for Tsilhqot'in people (Pfeiffer and Voeks 2008), and also important both in their own right and as part of the social–ecological system. Throughout the twentieth century, attempts to reduce or eradicate wild horse populations in the Chilcotin were inseparable from power struggles over land rights and range management (Thistle 2008). The legacy of those struggles remains evident in the differing perceptions among interview participants regarding policies and actions toward the management and control of wild horse populations. Most pertinent to this discussion, Tsilhqot'in participants linked their personal and cultural identity with the wild horses, and related to the horses themselves as relatives, individuals, or neighbors with family groups.

When explaining the horses' habitat use, some people did so by articulating a direct simile with human communities. One participant articulated the parallels between Xeni Gwet'in culture and

community structure, and that of the wild horses who share the same territory.

> The wild horses are like us. They've got routes they go to. They have plans.
>
> [. . .] The mares are sort of the leaders, like in our culture the women have power. They are really respected and strong. So, so the stud would protect the mares, and. . .but the mare would decide where to go, when to go. And it's quite interesting, in our culture it's the same. So um. . .you know you would. . .traditionally you've got a family, you've got intermarriages in different communities, and you had a leader that just takes over and they lead until somebody is better or stronger and people would go to that. So it's quite interesting when I think about the wild horses and us. . . (IN03)

Xeni Gwet'in community members spoke with an individualized familiarity about horses as one would about other families or neighbors, referring easily to which colts, fillies, and yearlings were the offspring of specific free-roaming horses, and frequently describing bands of horses in terms of the geographical area in which they roamed. Not all community members consistently knew all the horses, but there was a subtle yet clear difference in how they spoke of the animals, in comparison with the non-First Nation participants. Discussions with people in the latter category tended to be based in generalizations about the horses, with little or no distinction made between sub-populations (IN08; IN12; IN14).

Descriptions of horses help to elucidate for a non-Indigenous audience a different way of perceiving and relating to animals. Yet that way of perceiving and relating to animals is indicative of a way of knowing that extends far beyond horses. Many Xeni Gwet'in people spoke about a variety of wildlife species (e.g., grizzly bears, salmon) and the land itself (e.g., mountains, streams, lakes) in similar ways, explaining how the animals use the land, share resources, and make decisions about where to move, how to interact. Such descriptions often came up in the context of teaching the lead author, an outside researcher, how to behave when out on the land, or teaching children to behave with consideration for other people, animals, water, and the land (see M. Baptiste direct quotations in Bhattacharyya et al. 2013). These teachings and discussions also made it explicitly clear to the lead author that there was a spiritual dimension to those relationships, which came with behavioral protocols and responsibilities.

This distinction between the ways that Xeni Gwet'in and non-Indigenous participants spoke about horses may be partially attributed to their different levels of familiarity, proximity, and opportunities for direct observation. However, our data (interview and ethnographic results) show that the differences between their way of knowing and speaking about the horses are deeper than can be explained merely by levels of proximity given the geographical distribution and regular backcountry travel routes of interview participants. Culture, worldview, and ways of knowing were evident as strong influences in the ways that people perceived wild horses and their own relationships with them (e.g., in the quotation above). Xeni Gwet'in participants spoke about the horses in ways that accorded them agency in decision-making and relationships, as well as spiritual relations with people. Non-Indigenous participants spoke about free-roaming horses with reference to behavioral and population patterns, but none of the other dynamics described above.

Discussion: Understanding Horses as Independent Kin

One major point that emerged from this study was that uneven power relations in management are not only about who gets to make decisions over human use of land and resources, but also about the role that the land itself, and the animals that live on it, plays in those decisions, and how they will be represented. First Nations participants in this study were adept at engaging in dialogue using the common terms and language of non-Indigenous resource management professionals. Yet from the time the lead author spent on the land and with local community members, a richer understanding of the relationship between people and place emerged. Many Xeni Gwet'in and some non-Indigenous residents in Nemiah Valley implicitly understood wild animals and the land to be co-participant actors, who are active in ongoing relationships with people in the social–ecological systems in which they dwell (evident in interviews IN03; IN13; IN01a; IN01c; and ethnographic notes from discussions

knowledge holders). These experiences and observations are consistent with changing approaches to research, and land and wildlife management, which explore "hybrid" epistemological space (Barrett 2013) and a relational focus that includes the land as co-participant in research and management (Country et al. 2015).

Rather than simply being a set of populations, resources, or ecosystem elements that are acted upon and managed by people, wild animals and the land are also actors to be considered in decisions about how people use and interact with them, and they have agency in those relationships. It should not be a surprise that some non-Indigenous people's understandings of land and animals may converge with aspects of Indigenous understandings, insofar as Indigenous cultures dominate the local vernacular, and many long-term residents from settler cultures have adapted their livelihoods and ways of knowing to local communities. People's understandings of the land's perspective, and those of other animals, come from direct personal experience, observation of animals, spiritual relationships, weather systems, and knowledge passed through the community by shared experiences and stories. For Xeni Gwet'in members of this study, these experiences and observations are filtered or interpreted through Tsilhqot'in teaching by elders, cultural codes of conduct, place names, and the Tsilhqot'in language. Scientific knowledge is accepted for the insights and information that it provides, but local people's knowledge of their culture, identity, and the land guide the interpretation of that information. Just as people hold knowledge about the land and animals, so too are the land and animals actors with agency in their ongoing interactions with humans. While management from a Western perspective is often considered to be a one-way flow of action by people upon other system elements, this research suggests that in Nemiah Valley, the land itself and the horses are parts of a system with people and that any stewardship or management actions take place as part of that multi-directional relationship. Interaction with the land and animals, and among individuals and groups, may well lead to change in perceptions and management actions over time.

This underlying perception of the agency of wild animals characterizes the perspectives of many Xeni Gwet'in people and some other locals in ways that are often not explicitly stated. Wild horses and other wildlife were talked about as independent relatives who make their own decisions, have their own agency, and rely on many of the same plant and water resources as livestock, people, and other wildlife. The issue of whether horses should or should not be on the land was a moot point, and largely irrelevant. They are there. First Nations participants attributed more importance to how well different bands of horses knew and understood the landscape and available forage, their strength and stamina, their characteristics (physiological and behavioral), and stories of their interactions with people in different situations. The stewardship goal that many First Nations participants expressed might better be understood as co-existence, rather than management. What is sometimes difficult for a non-Indigenous audience to understand is that co-existence with, and respect for, horses do not necessarily exclude the chasing, capture, and use of them, nor even occasionally shooting some, if necessary. These actions are based in a fundamentally different understanding of the relationship between people and wild horses than that which underlies management by agencies and individuals from different cultural perspectives.

By this way of understanding, humans may co-manage wild horses, with the animals and the land exerting their own influences as active agents in the process. People may use wild horses to meet their own needs, and influence the horses' populations and habitat use as necessary to keep the social–ecological system functioning well, while respecting the active involvement and autonomy of the other members in the system.

There is geographical and political space in the Chilcotin for the Xeni Gwet'in to develop an explicit model of stewarding human–horse–land relationships based in this way of co-existing and co-managing with other elements of the natural system where each participant has a recognized form of agency. Such a form of human–animal–land co-management would be similar to the traditional informal management actions that have characterized these relationships in the past. However, it would need to be more explicit and deliberate in order to adapt to current and future conditions—a hybrid system informed by current

knowledge, yet based in traditional ways of knowing and cultural identity. This idea has implications for the inclusion of diverse knowledge, knowers, and ways of knowing in management practice and decisions: Since horses and the land don't communicate in written or verbal form, the only way to access their "voices" is through the sort of experiential, non-verbal, and grounded ways of knowing that have been discussed above as part of locally credible knowledge.

Scholarly literature and the empirical examples in this paper demonstrate that the Tsilhqot'in perception of agency among wild horses—which is indicative of a relational, kincentric approach to interacting with many animals and other ecosystem elements—is paralleled in other societies. While such relationships with animals form the basis for behavioral protocols and traditional management systems among many Indigenous societies, the treatment of animals as being fundamentally equal non-human persons has not generally permeated or influenced conventional approaches to wildlife management, conservation, or land-use planning in North America. By highlighting some parallels between Indigenous ways of knowing animals, and ecological system sciences, we aim to facilitate more open-minded discourse and positive interaction between knowledge holders from different worldviews.

Implications for land and wildlife management

For most of the twentieth century, the science of population ecology tended to focus on animal species as groups, and as reactive but not intelligent. Only recently have characteristics such as culture, language, long-term memory, or emotion been seriously considered as part of animals' lives, or their interactions with humans (Sankey et al. 2010). While including Indigenous knowledge and knowledge holders in wildlife and resource management is becoming more common, the political structures and decision-making conventions in many Western countries with colonial histories tend to be based in conventions, values, and assumptions that continue to act as barriers to the meaningful inclusion of Indigenous knowledge, practices, and worldviews (Booth and Skelton 2011, Hoogeveen 2016, Simms et al. 2016). While provincial, territorial, federal, and Indigenous governments in Canada are increasingly considering co-management as an option in wildlife management practice, cultural biases continue to influence the perceived credibility of knowledge and relevance or admissibility of information to decision-making. Hence, discourse about how different ways of knowing, such as Indigenous knowledge, will be included in decisions, and the associated discourse around assumptions, values, and approaches to human–animal relations, are a necessary part of meaningful collaboration between Indigenous peoples and governance agencies (Watson 2013, Loo 2017).

A kincentric approach to ecology and animal–human relationships has some similarities to current social–ecological systems science and implications relevant to the management of wildlife and habitat. It is neither possible nor desirable to suggest that traditional Indigenous and scientific ways of knowing parallel one another. Indeed, while there may be some parallels and commonalities between knowledge systems, there are also likely deep incompatibilities between Indigenous knowledge and contemporary normative Western epistemological, ontological, and axiological assumptions. However, it can be a useful bridging and facilitation tool to demonstrate some ways that similar concepts may resonate across different knowledge systems. Translating some concepts into terms that knowledge holders from different cultures already understand creates a foundation of open communication for inclusive management. Based on consideration of our research with First Nations on kincentric worldviews and animal agency, we reflect on four key implications for management, below.

Implication 1: Rights are inseparable from responsibilities.—First, recognition of agency among animals, and participation in a social relationship with other non-human persons in a social–ecological system, shifts the emphasis of management from a primary focus on humans' rights to inseparable responsibilities and rights. Legal and political struggles over Aboriginal rights and title are often about people fighting for the right to be responsible for their own territories and environments, and to exercise some autonomy in decisions about resource management (Clarkson et al. 1992, Bhattacharyya et al. 2013). Tsilhqot'in participants in this study, and the Xeni Gwet'in First Nation Government, use the term "Caretaker" to describe their role as

humans relating to animals, plants, and other elements of the land in their traditional territory (Bhattacharyya et al. 2013, Xeni 2013), a term that is also used by other Indigenous groups (e.g., Raramuri people, Sierra Madres, Mexico; Salmon 2000).

The demonstration that traditional practices are a form of management has proven essential to the assertion of Indigenous land rights and title under legal frameworks that originate with European and colonial governance systems (cf. Tsilhqot'in Nation v. British Columbia 2007, SCC 44 2014). However, there are some fundamental differences in assumptions, ethics, and approaches between many Indigenous approaches to caretaking, and conventional Euro-Canadian approaches to wildlife or resource management. The term "management" stems from Western traditions of governance that are embedded in colonial histories and ongoing authoritarian approaches to governance (Bavington 2002, Howitt and Suchet-Pearson 2006). The term "caretaking" is often used by Indigenous societies and First Nations to convey a sense of responsibility without control. Many traditional systems of governance, societal relationships, and resource management are fundamentally based in relational conceptual frameworks rather than mechanistic ones. Such ideas of kincentricity suppose different roles, rights, responsibilities, and ethics or morals for humans in relation to animals (Kimmerer 2013).

In a relational or kincentric approach to managing human–animal relationships, the goal underlying human interactions with animals and their habitat becomes one of maintaining a strong, healthy social and functional relationship through time, which involves giving and taking in appropriate ways, at appropriate times. Approaching wildlife management with the view that animals have agency implies a different basis for evaluating what constitute effective, positive, or negative management processes, methods, and outcomes. For example, killing certain animals under certain circumstances is a basic and essential part of the relationship that many Indigenous hunting societies have with animals (Nadasdy 2007). Many of the same cultures object to the unnecessary bothering or irritation of animals, such as when researchers use collars to track wildlife movement (Watson and Huntington 2008, Clark and Slocombe 2009, Watson 2013). Indigenous cultural advisors instructed the lead author and co-researchers not to joke around or speak too much about bears, since such behavior is disrespectful and may induce an attack. While these behavioral values may seem incongruous to people from Western ethical/philosophical backgrounds, they are entirely reasonable when understood within Indigenous ethical frameworks in which animals have agency, warrant basic social courtesies, and exercise some choice when they make themselves available to hunters.

An example of different ethics and moralities stemming from kincentric worldviews became evident during the review process for a proposed gold and copper mine in Tsilhqot'in territory. Responding to the mining company's proposal to drain a natural lake and save the native fish population by relocating them to artificial holding ponds against the wishes of local people, Xeni Gwet'in (former) Chief Marilyn Baptiste stated, "They want to send our fish to residential school!" Chief Baptiste's statement was viewed by some people as inflammatory anthropomorphism. However, from the perspective of many Tsilhqot'in people and scientists, what mattered was the responsibility to take care of healthy natural systems that support the interdependent fish, humans, animals, and plants. Far from projecting human values onto fish, Chief Baptiste was recognizing their inherent right to a fishy quality of life (Hoogeveen 2016). Her point was that forcibly displacing fish to unfamiliar, inhospitable environments with diminished quality of life, in which they might not survive, was an authoritarian exercise of power akin to the forced relocation of First Nations children to residential schools. The struggle by Xeni Gwet'in and all Tsilhqot'in communities to protect the lake and the fish who live in it is illustrative of how their political fight for rights is inherently about the right to exercise *responsibility* for the well-being of lands, waters, fish, and wildlife—not as inert property or resources, but rather as relations and fellow persons.

Implication 2: Complexity in social–ecological systems.—The second implication is that recognizing animal agency suggests an approach to management that is consistent with complexity and social–ecological systems approaches to management. Conventional approaches to wildlife and habitat management in North America have been

based in a utilitarian approach to human–animal relationships; and the assumption of a natural state of balance in nature. For example, the concept of Maximum Sustainable Yield bases wildlife and habitat management around how many animals can be taken or expended without precipitating a population crash (Pierotti 2010). In the Chilcotin, free-ranging horses were considered by most range and wildlife managers to be feral pests, rather than legitimate wildlife—a classification that was not shared by Tsilhqot'in peoples. The 20th-century approach to management was to attempt to eradicate or control animal species that were seen as competitors for resources used by humans, for example, horses that ate the same forage plants as cattle livestock (Bouchard 1971, Thistle 2008; IN11).

In contrast, a relational approach suggests that wildlife—or horses in this case—be recognized across levels, from individual animals to family groups and herds with different territorial ranges and seasonal interactions. It supports human intervention to maintain healthy, viable communities of multiple species, rather than focusing on managing single species populations for the allowable take of game or resources (see, for example, Housty et al. 2014). It likely implies more local, decentralized management of species with fuller recognition of their connected, multi-scalar context; understood through a systematically multi-scalar, collaborative process of developing understanding and facilitating management choices (cf. Carter et al. 2014, Jochum et al. 2014). A relational approach will imply fostering links between scientific monitoring and local, citizen observations, and integrating scientific and cultural perspectives on a species and their interactions with people.

Implication 3: Shifting the locus of control.—Third, kincentric views of animals and ecosystems recognize that humans are not in control of the relationships (Nabhan 1997, Martinez 2003, Nadasdy 2007), and hence provide a conceptual basis for coping with uncertainty and other drivers of change that are beyond human control. Current research and discourse in wildlife management and environmental sciences recognize uncertainty and rapid change as inherent aspects of social–ecological systems (Gunderson and Holling 2002, Brown et al. 2010). Yet conventional wildlife management practices, tools, and the decision processes that inform them are not well equipped to cope with uncertainty or rapidly changing conditions.

Conventional approaches to wildlife management are meant to be informed by science, which is often assumed to be value-neutral and inherently good (Howitt and Suchet-Pearson 2006). That assumed scientific objectivity implies a subject–object relationship between people and animals, which in turn is also assumed to be value-neutral. Conventional wildlife management methods tend to assume the human ability to manipulate processes and some predictability of outcomes (Ludwig et al. 1993). Yet in practice, decisions are often made without adequate, current, or relevant scientific data (Artelle et al. 2014), particularly when management agencies face severe budget constraints. Wildlife managers then become more vulnerable to political and economic pressures, and decisions based on the assumption of ecological balance or equilibrium frequently lead to unanticipated consequences in systems characterized by multiple drivers, uncertainty, and rapid change. In contrast, recognizing animals as agents who make their own decisions necessitates the parallel recognition that humans—while influential in social–ecological relationships—are not in control, and that certain influences on those relationships may be unknowable to us.

Implication 4: Valuing local, grounded knowledge in decisions.—Fourth, the recognition of agency among animals, and a relational or kincentric view of animal–human relationships, re-emphasizes the value of locally relevant, empirical, grounded knowledge to inform management decisions and actions across scales from localized individual interactions to decision-making by governance institutions. In order to understand the nuanced dynamics, behaviors, and interrelationships of individual animals, their family groups, and regional sub-populations, humans must have first-hand observations of those animals and their habitat use, as well as the knowledge and wisdom to understand and interpret those observations. While a priori information about other members of the same animal species from different regions may be somewhat useful or helpful, it may be insufficient as a basis for understanding a specific group of local animals with its own unique characteristics (Pierotti 2010). In cases such as the Tsilhqot'in wild

horses, empirical knowledge of local animals may be useful more in terms of the valued local knowledge and characteristics that are described in this paper. In other cases, such intimate knowledge and observation has led scientists to new understandings of subtle differences within species sub-populations, such as the Heiltsuk knowledge of coastal wolves in British Columbia (Stronen et al. 2014).

Conclusion

The examples and discussion in this paper illustrate some complex ways that the worldviews of diverse cultures, especially those of Indigenous peoples, can be at once different from the worldviews and conventional approaches to wildlife management of dominant European and Canadian cultures, yet also complementary with notable parallels in emergent scientific concepts. Our discussion points to a significant challenge posed by the practice of cross-cultural approaches to knowledge, research, and planning: Some Indigenous approaches to management are based in ontologies that are so fundamentally different from the assumptions that underlie conventional management and assessment frameworks that they meet barriers to effective inclusion and implementation simply because there is no space for them within conventional methods and validation of data. The important point here is that the perception of animals as agents akin to humans within social–ecological systems is a perspective with much to offer modern wildlife management. Yet despite improvements in discourse (and in some places even the mandate to consider Indigenous knowledge), in practice such perspectives are incompatible with many of the decision-making structures and processes that determine current management and hence remain invisible or left out of professional practice. Such worldviews and knowledge are also in danger of being lost or degraded within many Indigenous communities who are forced to adhere to Euro-Canadian bureaucratic processes, and to frame their own wildlife and resource management decisions within reporting conventions that cannot accommodate or validate their ways of knowing animals.

Animal agency and kincentric ecology are part of Indigenous cultural perspectives, worldviews, and ways of knowing in many societies that are very old, with powerful implications for how humans relate to and use wildlife, lands, and resources. Yet discourse on how those Indigenous perspectives and ways of knowing might be included in, or inform alternatives to, contemporary management practice is relatively new and still considered novel among many practitioners (Gilchrist et al. 2005, Service et al. 2014). We see them, especially, as a strong and vital alternative when thinking about how to improve the effectiveness of conventional Euro-Canadian approaches to wildlife and land-use management. We highlighted four avenues to do this: a shift in emphasis from human rights to human responsibilities to wildlife; a focus on system dynamics rather than just specific species; the acknowledgment of uncertainty and rapid social–ecological change; and an emphasis on the value of locally relevant, empirical knowledge to effective management. Ultimately, these likely will also be tools to be wielded through new transdisciplinary, participatory perspectives.

Positive examples of how diverse biocultural knowledge and perspectives on animal agency and kinship with humans are being recognized and integrated into management practice can be found in examples discussed in this paper (Brown and Brown 2009, Housty et al. 2014, SCC 44 2014) and beyond (Marcel et al. 2012). Indigenous ways of knowing and understanding animals, ecology, cultural, and spiritual relationships stem from long, multi-faceted, and diverse histories of dynamic adaptation to changing conditions and new information. In the current era of rapid social–ecological change and uncertainty, biocultural diversity and Indigenous perspectives on the agency and kincentric relationships among animals and people can be a source of strength and resiliency for wildlife and land management decision-makers.

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