




Wild About Wolves: Using collaboration and innovation to bridge parks, people, and predators

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Abstract

Human-carnivore conflicts present an array of conservation challenges, especially in complex and cross-cultural settings. Described here is a facilitated, multi-method, collaborative process in the Nuu-chah-nulth First Nations' Traditional Territory, British Columbia, Canada, aimed at building a project to address human-wolf conflicts following the species' natural re-colonization of a national park reserve. Participants reported that this project prompted dialogue and engagement that will help bridge the gap between First Nations and non-Indigenous people in the Territory. Although the project remains ongoing, pragmatic lessons about its process can already be identified: (1) an early, and ongoing collaboration was crucial in setting the project's priorities; (2) adopting a co-learning approach set a respectful tone for the project; and (3) reframing human-wolf conflicts using a tolerance-oriented lens bridged diverse perspectives and worldviews. The preliminary outcomes of these efforts to date are constitutively different from conventional collaborative efforts because the process has already changed relationships in ways that many such previous efforts have not.

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collaboration, conservation, First Nations, human-wildlife interaction, parks and protected areas, wolf

1 | INTRODUCTION

Human-carnivore conflicts are often highly contentious and present a range of conservation challenges and opportunities to wildlife managers, conservation officers, and local communities (Frank, Glikman, & Marchini, 2019; König et al., 2020). Interactions between people and large carnivores have garnered more public, political, and academic attention than any other human-wildlife challenge (Pooley et al., 2017). In North America, conflicts between people and large carnivores occur mainly due to competing needs for space and resources (Frank et al., 2019a; Knight, 2000). Frank (2016) highlights 3 main ways in which these conflicts occur: (1) humans impacting wildlife, (2) wildlife impacting humans, and (3) human-human conflict over wildlife and wildlife management (Madden & McQuinn, 2014). The overall objective of this article is to characterize and formatively evaluate a cross-cultural effort to ameliorate a situation that embodies all three of these conflict types between people and a recently re-established population of wolves (*Canis lupus*) in a complex social-ecological setting.

Among the large carnivores, the historical tension between humans and wolves is one of the most monumental and socio-politically contentious of the human-carnivore conflicts documented over centuries (Mech, 2012; Musiani et al., 2009; Nie, 2003). For over 50 years, wolves have often been a “pawn” in much larger social and political subjects, such as the urban/rural divide, “western” culture way of life versus Indigenous connectedness toward nature, and eco-centric/anthropocentric values, among others (Mech, 2012). Such division becomes clear in the recently fueled debates over wolves intensifying across Europe and North America (with the exception of Northern Canada). After being nearly eradicated from both continents throughout the 19th and 20th centuries, wolves have naturally re-established, or have been restored to changed landscapes (Chapron et al., 2014; Musiani et al., 2009). While restoration efforts are important for ecological health, these efforts have been met with outrage from some local communities and industries. Wolves are lethally removed to protect livestock, which can hinder conservation efforts and give rise to discord among stakeholders (Stone et al., 2017). In much of Europe, farmers have, and continue to face livestock depredation, worsened by wolf recovery projects (Kiffner et al., 2019; Skogen et al., 2019). The return of wolves has created complex conservation challenges in a human-dominated landscape,

leading conservationists to attempt to contemplate possible buffer zones to reduce conflict (Chandelier et al., 2018; Kuijper et al., 2019; Linnell & Boitani, 2011; Rigg et al., 2011). In North America, the 1995 reintroduction of wolves to Yellowstone National Park, along with additional reintroductions in Idaho and Montana, were met with strong opposition from local residents, farmers, resource extraction industries, and politicians (Musiani et al., 2009; Nie, 2003). The example from the United States represents just how polarized and socially hostile the topic of wolf policy and protection can be. With wolves much less confined to wilderness areas, conflict is occurring at much higher intensities and frequencies than ever before (Musiani et al., 2009). The measure of legal protection that wolves have been given across much of Europe and North America have changed dynamics. The more wolf habitat and human-use lands (i.e., agriculture, resource development, cities, or towns) overlap, the more frequent and negative these interactions tend to become, especially since wolf populations grow fast given the right ecological conditions (food and space) (Haswell, 2011) and in the absence of limiting factors such as hunting or lethal control (Mech & Boitani, 2010).

Given the conditions detailed above, wolf populations can grow faster than the evolving public perception and attitudes, which is a much slower social dynamic (Kaltenborn & Brainerd, 2016). Public support for wolves may diminish as their numbers increase, particularly as people experience firsthand the costs of living alongside these large carnivores (Williams et al., 2002). Support may also diminish because of perceived risk associated with the mere presence of wolves in an area, which some can consider to be a conflict, even in the absence of direct interaction. Okwemba (2004) states that when conflicts increase between people and large animals over the same territory or resources, it can lead to a decrease in political support for the protection of such animals. Furthermore, if the people whose livelihoods are affected by the presence of such animals bear the brunt of protecting them, this can lead to rising questions of social inequity (Frank, Glikman, & Marchini, 2019; Treves, 2009). In essence, wildlife management is as much a socio-political endeavor as a biological one (Frank et al., 2019a). Public support for specific conservation policies and programs is an important aspect of successful conservation planning. Opposition can lead to policies that undermine planning (Carrow, 2008) and may lead to reduced funding (Eagles, 2001).

Collaborative efforts in wildlife management and conservation have become recognized as effective in raising public support and building stronger community relationships (Berkes & Ross, 2013; Thomas & Mendezona Allegretti, 2019). While collaborations have become increasingly common, many efforts still lack effectiveness and openness to acknowledge, and to be fully respectful of the diversity of opinions and worldviews involved (Wong et al., 2020). Those sorts of necessary changes require evolving the constitutive dimensions of policy processes, which are the collected set of formal and informal decisions which shape the parameters of everyday technical decisions (Clark & Rutherford, 2014). In this case, prioritizing direct involvement of First Nations in process design and project governance structure, rather than simply inviting them into a governmentally-designed process. With sufficient attention paid to these deeper decisions, collaboration can play a pivotal role in bridging these gaps (Redpath et al., 2017). Finding new ways to collaborate equitably and effectively remains an important attribute for wildlife managers and researchers, especially when addressing complex conservation challenges that require deeper levels of understanding.

Conflicts between humans and wolves are often socially-, culturally-, and politically charged (Musiani et al., 2009). Consequently, if the right people are not engaged in planning solutions and future management, especially First Nations, who are rights-holders within their unceded territories, those tensions can predictably exacerbate underlying issues between groups (Clark & Rutherford, 2014). This tension is particularly acute in cross-cultural contexts of wildlife management and conservation. Garibaldi and Turner (2004) have emphasized the importance of collaborative management in engaging local people in the management of cultural keystone species (CKS). CKS refer to “the culturally salient species that shape in a major way the cultural identity of a people, as reflected in the fundamental roles these species have in diet, materials, medicine, and/or spiritual practices” (Garibaldi & Turner, 2004, p. 4). On the southwest coast of Vancouver Island, wolves have returned after a long absence and, as a result, relationships between humans and wolves are being slowly re-shaped. Wolves are a CKS for many Nuu-chah-nulth communities, while standing as an archetype of both attraction and fears for visitors and residents of nearby towns.

In response to rising human-wolf interactions on Vancouver Island, and conflicts around this species with multiple cultural and ecological meanings, a new collaborative project, entitled “Wild About Wolves” (WAW), was launched in 2018. We begin by describing the current geographical, social, and cultural context of human-wolf conservation challenges in the region. Next, we briefly explain the WAW project and detail the process of bringing

diverse collaborators together to co-develop project plans and direction. We then discuss some very preliminary takeaways from the first project workshop. We conclude by providing key research and management insights from this process to date. We illustrate how striving toward equitable and innovative collaboration processes can help wildlife managers and researchers incorporate new ideas and improve future conservation endeavors.

1.1 | Study area: The southwest coast of Vancouver Island

This socially and culturally vibrant region is most well-known as a national and international tourist destination (Murray & King, 2012). Most notably, the study area is on the unceded territory of nine Nuu-chah-nulth First Nations (Ditidaht, Hupacasath, Huu-ay-aht, Pacheedaht, Tla-o-qui-aht, Toquaht, Tseshaht, Uchucklesaht, Yuułuʔiłʔatḥ), includes two busy residential communities that serve as tourist hubs for the regions (Tofino, 2016 population: 1932; Ucluelet, 2016 population: 1717; and to a lesser extent, Port Renfrew and Bamfield), and the Pacific Rim National Park Reserve (PRNPR), which is spread out across the southwest coast and acts as one of the main tourist draws in the area (see Figure 1). The area receives over a million visitors each year and boasts a large repertoire of tourism and recreational opportunities (MacKinnon, 2017). People from all over the world visit PRNPR and the surrounding communities for many reasons, although a few of the most common include surfing, hiking, paddling, wildlife viewing, whale watching, and camping.

PRNPR is also home to several stable carnivore populations, who have recovered from previous extirpation efforts (Khan, 2019). Most, if not all, of these species have been subjected to extermination campaigns ever since the beginning of the 1600s (Shivik, 2014). On Vancouver Island, the suppression of wolf populations had been active up to the 1970s and 1980s (Carrow, 2008; Hatter & Janz, 1994; Munoz-Fuentes et al., 2010). Wolf hunting and trapping are legal on Vancouver Island; however, it is not common, and it is considered highly controversial in the area (Darimont et al., 2021; Hunter, 2021). Over the last 30 years, wolves have naturally recolonized the area (Khan, 2019). Concurrently, PRNPR and surrounding areas have experienced significant gentrification and upscaling in tourism (MacKinnon, 2017). The return of wolf populations has led to conservation challenges in the park reserve and region as interactions between humans and wolves have become more frequent and severe (Frank, Forbes, & Coulson, 2019; Khan, 2019).

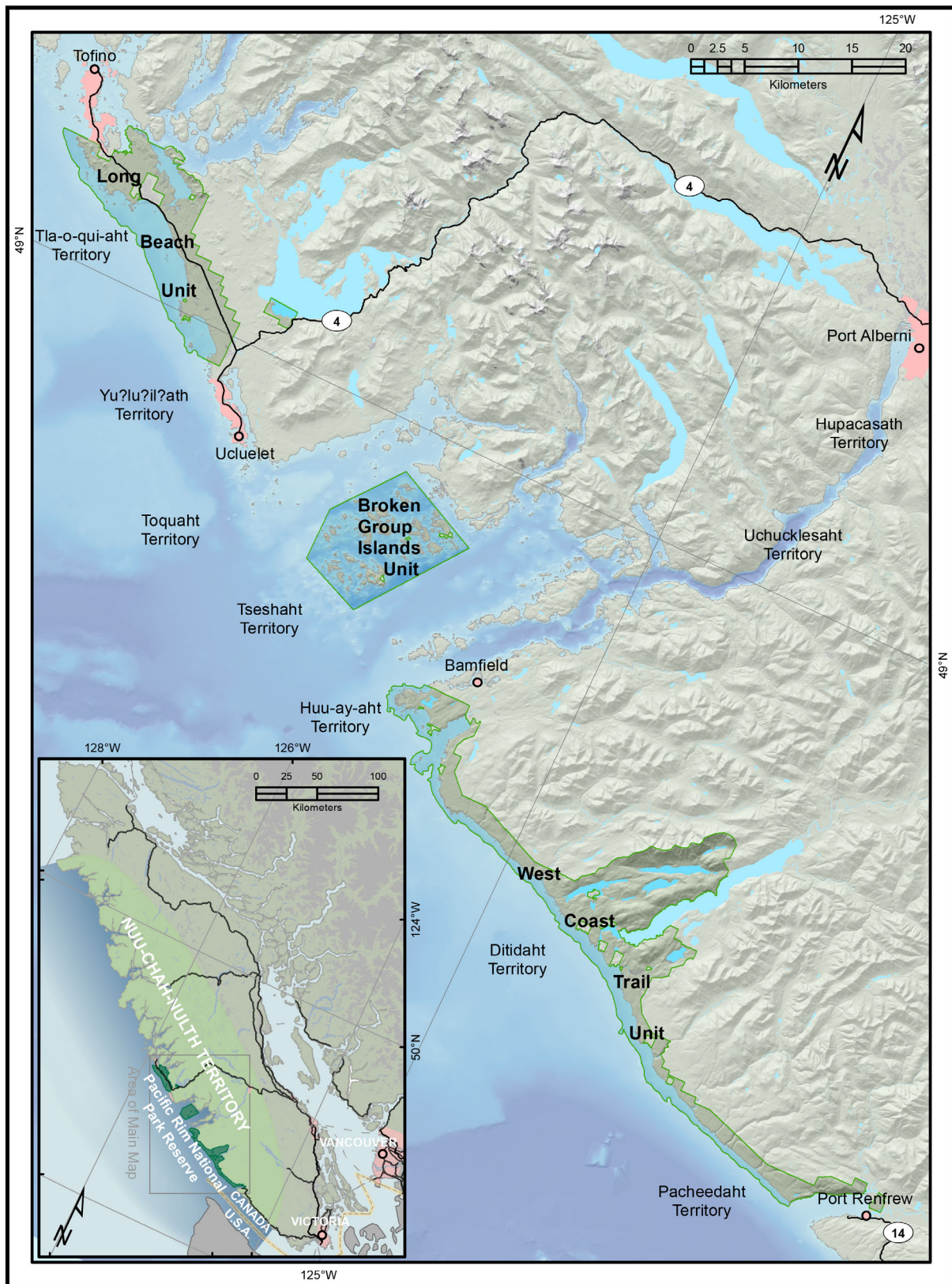


FIGURE 1 Map of the project study area, highlighting all three units of the Pacific Rim National Park Reserve (Long Beach, Broken Group Islands, West Coast Trail). The map indicates the Nuu-chah-nulth territories in the area. The inset provides an overlay of Nuu-chah-nulth territory over the Park Reserve (Source: Mike Collyer, Pacific Rim National Park Reserve, 2022).

1.2 | Study context: A complex and multifaceted relation with wolves

The relationship between humans and wolves on the southwest coast of Vancouver Island is complex and multifaceted. As expressed by First Nation collaborators in the workshop, there is a deep and long-lasting relationship with wolves, grounded in respect and peaceful existence together or in connection with one another. For Nuuchahnulth First Nations, wolves are deeply spiritually and culturally significant (Frank, Forbes, & Coulson, 2019). First Nation participants in the workshop shared that wolves are highly revered in Nuuchahnulth culture—they are viewed as ancestors, relatives, and protectors of the land. Derek Peters, “łiishin” (Tayii H̱awil, or head hereditary chief) from the Huu-ay-aht First Nation describes ceremonies, dances, songs, and headdresses to replicate wolves and recognize how this species brings the balance to the wildlife and the forest (see Part 2 in Table 1 below). Barney Williams, Tla-o-qui-aht Elder, expressed that “we have co-existed with wolves for thousands of years [...] wolves are persons as well, they have a responsibility in this ecosystem, and we need to respect that” (video 1, 5:51–7:27, not published).

Although wolves are revered in local Nuuchahnulth culture, broader local attitudes, including those of residents and PRNPR visitors span across a continuum from positive to negative. That being said, there are still differences among the various Nuuchahnulth Nations around wolf impacts on food security (i.e., ungulate depredation) and other complexities. The wolf was at one time a hated animal that was hunted and killed, but more recently it has become an iconic species symbolizing wilderness and a true connection to nature (Kellert & Wilson, 1995). This changing perspective toward the species is shaped also by other influencing factors, including that of an ever-expanding world of social media that often fosters expectations to see and interact with carnivores in their natural settings (PRNPR, 2008). An abundance of pictures can be found on social media and the internet with visitors posing near wolves on the beaches of the PRNPR, without understanding the implications of their behavior toward wolves and the possible outcomes that their behavior may have for the wolf down the road (Edwards, 2005). In addition, with a fragmented PRNPR amidst an industrial forestry landscape wolf movement may be constrained to topographic pinch points where interactions with people have very high possibility of occurring. The co-occurrence of wolves and people may expose wolves to a higher possibility of habituation to human presence (Hansen, 2019). Modified wolf behavior has also been traced to prolonged exposure to feeding from people (Edwards, 2005), who entice animals with food to get closer for an “exciting and

positive experience” or leave their garbage and food waste out, making it easily accessible for wildlife (Jackson, 2005). Human behaviors leading to food conditioning include direct feeding, indirect feeding (such as leaving behind food or garbage following a visit), and allowing dogs to roam beaches and trails off-leash (dogs are seen by wolves as both threats and prey species) (Bowes et al., 2015; Kojola et al., 2004).

With residential and tourist communities, diverse First Nations, high visitor numbers, and stable wolf populations in a small geographical area, human-wolf interactions are inevitable. A rising number of residents and visitors purposefully seek out wolves in PRNPR and surrounding areas (Windle, 2019). Due to habituation and food conditioning, wolf behavior toward humans has become bolder over the last two decades. For example, two wolves were euthanized in Clayoquot Sound and one in the Broken Group Islands in 2005 (Edwards, 2005). The aggressive behavior of these two wolves was traced back to routine human feeding of the animals. More recently, in 2016, Parks Canada issued a “wolf warning” after wolves stalked a runner with two dogs, and the blasting of a horn by a park reserve employee did not scare wolves away (MacKinnon, 2017).

The behavior of wolves escalated to the point of two wolves being destroyed in this area in 2017. After approaching people several times along the trails of PRNPR at close distances, showing habituation to human presence, the two wolves attacked an on-leash dog, the second such attack on a leashed dog within months (MacKinnon, 2017; Windle, 2019). Because of the lack of fear toward humans and aggressive behavior, Parks Canada euthanized the wolf involved in those incidents. A second pack member, also deemed a public safety risk by the British Columbia Conservation Officer Service, was destroyed in a nearby community within weeks, creating discontent and tensions with the local First Nations.

As stressed by Mastrangelo (MacKinnon, 2017) from Yuułuʔiłʔatḥ, killing wolves is not a part of their traditions and changes in the wolves' behavior are related to changes in human behavior. As further clarified by Dr. Barney Williams, Tla-o-qui-aht First Nation Elder, “long time ago, you didn't see them [wolves]. Very seldom...but you always heard them, so you knew they were there, but you never really saw them.” (video BW1 4:30—unpublished). In regards to changes in wolf behavior, Dr. Barney Williams follows by saying “It's not what's going on with the wolves, it's what's going on with us? Litter, dogs off leash, and people getting too close have made wolves less wary and associate humans to food sources” (video). Humans have facilitated behavior in wolves that contributes to conflict, thus compromising the harmony between this species and people, and as Dennis

Hetu of the Toquaht First Nation, states: “it is always the wolves that end up paying the price” for such conflicts (Wild About Wolves video, see results and discussion section for link). Unfortunately, wildlife “paying the price” with their lives for human-induced conflict is a typical outcome for human-wildlife conflict management (Lamb et al., 2020; Torres et al., 2018; Treves & Karanth, 2003). This is one of the conventional management responses that the Wild About Wolves project is working to reverse.

1.3 | The Wild About Wolves project

The increase in both the frequency and severity of human-wolf interactions, and the controversy following the destruction of the wolves in 2017 gave rise to the need to find ways for facilitating human-wolf co-existence. The Wild About Wolves project was launched by Parks Canada in 2018 to help humans and wolves coexist in and around Pacific Rim National Park Reserve (PRNPR). The vision of this 5-year project is to reduce conflict and promote coexistence between people and wolves by working across jurisdictional and territorial boundaries while taking a multidisciplinary, intercultural approach that is guided by social, ecological, and Traditional Knowledge (Figure 2).

Due to the large home ranges of wolves, the relatively small size of PPRNPR (the long beach unit is $\sim 77 \text{ km}^2$), and the fact popular tourist communities are located directly adjacent to the park reserve, a multi-jurisdictional approach was determined to be the most likely path leading to success. In other words, wolves travel long distances daily, traveling through many communities, bringing with them any behaviors learned along the way. Thus, working collaboratively with First Nations rights holders, and other

land managers at the scale of the wolf was determined to be more appropriate than a project closed off and focused solely within the boundaries of PRNPR.

While not always implemented, using a multidisciplinary approach is widely recognized as a recommended approach to successfully resolve human-wildlife conflicts (Dickman, 2010; Lischka et al., 2018; White & Ward, 2010). Bringing together multiple lenses to address a conservation matter is often practiced in Indigenous-led conservation in Canada where wildlife stewardship is informed by Indigenous Knowledge and Western social and ecological knowledge (Tran et al., 2020). Examples of using different streams of knowledge are available especially for Coastal British Columbia, where such an approach has been implemented for a series of species, spanning from salmon (Atlas et al., 2021) to grizzlies (Housty et al., 2014). The Wild About Wolves project team, set itself in Coastal British Columbia, strongly believes in this concept and in implementing such an approach from the outset. The three specific project focus areas are: (1) sharing the space—addressing the human dimension of human-wolf interactions; (2) listening, learning, and collaborating—respectfully listen to and learn from First Nation wisdom and Traditional Knowledge about wolves and collaborate with First Nation communities to foster coexistence with wolves; and (3) where the wild things are—understand the ecology of wolves in the region.

All three of these focus areas and knowledge sources are treated on an equal footing within this project by following the principles of Two-Eyed Seeing (Bartlett et al., 2012; Reid et al., 2021) and Ethical Space (Ermine, 2007; Littlechild & Sutherland, 2021) of engagement to ensure that no attempts to “integrate” or “combine” disparate knowledge sources were made. The commitment to

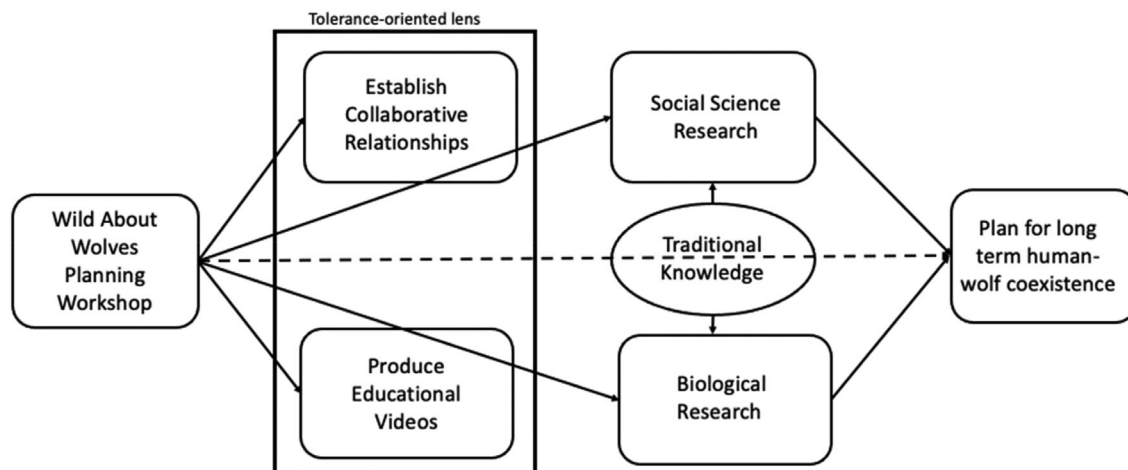


FIGURE 2 Planning process for Wild About Wolves project.

collaboration and equity of knowledge is highlighted by the breadth of perspective within the authorship of this article. Co-authoring this article are First Nations representatives, academics, students, practitioners, government, and community groups, who have come together to share their knowledge through this process. We acknowledge the shortcomings of this work as a Park Reserve started and led project, and we strive to produce future collaborative works in a way that ensures First Nations and community authorship in a more equitable and inclusive way from the onset. Through this, we hope to share this process and preliminary outcomes and learnings with other academics, practitioners, and rights holders to help provide insight into collaborative conservation processes that lead to more inclusive conservation projects.

2 | METHODS

A structured two-day meeting was held at the Ucluelet Community Centre in April 2019 to enable *Wild About Wolves* project partners to meet and get to know each other, gain a better understanding of each other's expectations, clarify, and refine the project goals, align the project focus areas, and prioritize their work. Core project participants were known before the project began and stemmed from long-lasting relationships between First Nations, community groups, and the PRNPR built through prior work. Additional participants were invited through a snowball sampling-type technique as well as invitations to all surrounding First Nations who were not already involved and to community members with a vested interest on expertise on this issue. A total of 42 participants attended the workshop including representatives of First Nations, government agencies, and academia. For grant purposes, Parks Canada had previously developed a project vision, objectives, and three research streams (human dimensions, Traditional Knowledge, and ecological knowledge), but all of those elements were overtly put on the table for reconsideration during the workshop.

As this initiative has been led by the Pacific Rim National Park Reserve, the ethical consent process was carried out between the Park Reserve and the individual Nations (or representatives) involved. This was done through partnership agreements to ensure fair financial compensation and to adhere to research and collaboration protocols with each individual Nation, and not a generic set of protocols. In addition, written consent was given at the start of the workshop to ensure ethical awareness of participating in the event. Verbal consent was given for all quotes and names used within the article. The biological and social science research highlighted later in this article had received ethical clearance through Parks Canada and the

social science research has also gained ethical clearance from the University of Saskatchewan (#1838).

The workshop was opened with a prayer by a Yuu-łu?ıı?atł elder. Dr. Barney Williams, a Tla-o-qui-aht elder, then provided introductory remarks to help set a tone of respect, cooperation, and inclusivity for perspectives and knowledge. To discuss and refine the project elements, participants were led in discussions around the vision, objectives, and research streams by three facilitators. The facilitation team were experts in human-wildlife interactions and conservation planning. All three identify as settler women but have extensive experience working with Indigenous peoples within and beyond Canada. In preparation for the workshop, all facilitators engaged in acquiring a deep knowledge of the project by reviewing past research, talking extensively with the project manager and the project team, and by gathering knowledge about local history and inhabitants. Before the workshop, the facilitation team discussed and shared thoughts on how to best lead the group in meaningful discussion and entered the project with respect and an open heart to listen, learn and co-create knowledge. Tasks were agreed upon by facilitators before the workshop by establishing who the main note taker was, who would welcome participants, who would lead big group and small group discussions. While specific tasks were assigned, the three facilitators participated in all steps leading to the workshop, as well as all steps during and after the workshop. Constant engagement, feedback, and communication were what made the three facilitators a united team able to provide a good venue for participant engagement. The facilitators used a variety of methods to engage participants. A talking circle was performed early on in the workshop to allow all participants to speak and be heard, and to encourage respect, dialogue, and the co-creation of content (Wolf & Rickard, 2003).

Such an approach allowed for multicultural awareness, respect for individual differences and group cohesion from the start of the facilitated process. A visual and interactive facilitation approach that aligned with the principles of the talking circle was used to promote storytelling, knowledge sharing, and the documentation of participants' contributions. The facilitators alternated whole group and small group discussions, and structured and unstructured work time to maximize listening, storytelling, learning, and networking. During both days, participants were invited to walk around and look at the contributions offered by other small groups and to discuss outcomes together. Over the 2 days, participants were invited to share their knowledge and experiences through a video-recorded interview, offering another venue of engagement to participants. The application of a formative evaluation approach in the early development

of this project was to instill respect between participants and encourage openness toward other viewpoints and knowledge (Wolf & Rickard, 2003). Fostering relationships among participants with diverse perspectives was key to develop the collaborative process for identifying key indicators for project success.

3 | RESULTS AND DISCUSSION

During the workshop, discussions were recorded on sticky notes and organized in themes by the facilitators. Participant contributions were directly quoted by facilitators when transcribing information. Notes were also taken during the discussions, which further clarified the content recorded on the sticky notes. A qualitative content analysis was performed by interpreting and summarizing all the textual material, so to reduce the possibility of respondents being recognized through personal quotes and/or information, and identify main themes mentioned by participants (Krippendorff, 1980). Summarized workshop results are reported below with no direct quotes from participants. The whole workshop was indeed designed as a sharing circle where participants were requested to be respectful of others and not repeat what was shared by other participants in detail.

3.1 | Refining the project's elements

Participants stressed that the project's vision statement, "to reduce conflict and promote coexistence between people and wolves," should foster respectful relationships with wolves, and emphasized the profound meaning and spiritual bond that wolves have with First Nation communities. Establishing respectful relationships requires "resetting" residents' and visitors' expectations related to their experiences in PRNPR, awareness and respect of expectations and protocols in Nuu-cha-nulth territory, and educating them about healthy interactions between humans and wolves. For a successful project, participants identified the need to clarify language and definitions to ensure people share the same understanding of key terms, broaden the project scope to be cross-jurisdictional and cross-disciplinary, and establish measures of success that can be monitored and evaluated. Participants also expressed the need for clear, measurable objectives and success indicators to evaluate the project's effectiveness. They wondered how the project would be evaluated as successful or unsuccessful, and what indicators would be used to do such an assessment. Participants also requested clarification about the roles different groups could play in assessing project outcomes, and the steps to be undertaken by participants to fulfill their roles in the project. This is especially true for

First Nations participants, who expressed interest in having leadership opportunities within the project. By prioritizing objectives and identifying indicators it was possible to ensure participants were focusing on the most relevant and impactful strategies for human-wolf coexistence.

When discussing the workshop theme "human dimension of human-wolf interactions", participants reiterated the importance of establishing respectful relationships with wolves. Participants felt that sharing First Nations stories, songs, and knowledge about wolves and other carnivores was key to promoting healthy human-wolf relationships. They suggested that First Nations could have a leading role in knowledge production and dissemination because of their history of respectfully sharing the landscape with wolves over generations. Participants also recommended retrieving existing social science data and conducting research on residents' and visitors' attitudes, especially in regard to their use patterns, knowledge, fear of wolves, and behaviors. The research was also recommended to focus on identifying which recreation users (e.g., surfers, hikers, kayakers) are contributing to the problem, to the solutions, and how. In addition, participants identified a need to better research and understand how to communicate effectively across different cultural communities, which may not share the same values and/or language. Another suggestion was to better understand how wildlife viewing tourism impacts wildlife and habituates wolves to humans. All of these human dimensions insights can be used when developing a targeted communication strategy, which was suggested as a way to disseminate consistent and standardized educational material and messages throughout the region. In addition, a better and shared understanding of the implications of having dogs in wolf territories, behaving precariously around wildlife, and unintentionally promoting wildlife habituation and food conditioning was obtained. Limiting these activities can foster more respectful relationships between humans and wolves and help reduce negative human-wildlife interactions in the region.

For the First Nations Traditional Knowledge theme, participants discussed the importance of First Nations' languages, knowledge, and values in light of coexisting with wolves, as well as knowledge sharing and dissemination. First Nations participants' shared stories and informed about a deep and long connection with wolves that is grounded in three worldview principles of respect, interconnectedness, and to take care of. It was shared that the land and its inhabitants are all equally deserving of respect, First Nation communities treat wolves with respect by giving them space to live and move freely across the landscape without interference, and by recognizing that wolves have as much ownership and right to their territories as humans do. A significant endeavor undertaken by this project will be to move away from

managing, controlling, domesticating, and/or dominating wolves and instead focusing on forming respectful relationships with wolves. First Nations collaborators stated that participation in this effort and collaboration with project partners to be part of the solution was important. They felt they could not only lead the Traditional Knowledge focus area, but also help guide the other project components. They felt that sharing their values and knowledge and being able to lead this core stream within Park Canada's vision can help visitors and residents avoid behaviors that attract, provoke, or otherwise contribute to human-wolf conflicts, contributing to larger mindset shifts in the area. As a result, recommendations emphasized the need to build a stronger partnerships between First Nations communities and Parks Canada through open communication and further decision-making input on their territories.

The third workshop theme focused on ecological knowledge, with participants considering how ecosystems and natural cycles are influenced by the presence of wolves and stressed the importance of thinking about wolves from a coastal perspective. Extensive ecological knowledge about wolves exists in the region, so participants recommended connecting with local knowledge holders and research groups to share data and ecological knowledge. Conducting a review of existing research and developing data-sharing protocols was perceived as an important step to undertake. Novel and significant wolf behaviors were reported by participants during the workshop, which refined the group's knowledge about wolf behaviors in the region. Participants wondered how ecological and traditional knowledge could be better aligned. While discussing all the themes listed above, a series of research questions were generated about wolf ecology in the region, which are being used to help direct future ecological research about wolves in the region.

To foster human and wolf coexistence on a landscape scale, participants identified the need to develop a regional and coherent approach for: (1) messaging through a Parks Canada-led communication strategy (i.e., content, traditional knowledge insights, signage, messaging in park reserve, messaging offered by local ecotours/businesses); (2) enhancing compliance and enforcement policies (i.e., dog bylaw enforcement); and (3) developing research protocols for data collections (i.e., camera trapping protocols, survey protocols, radio collaring protocols, genetic testing protocol, shared-access databases). Dog management was perceived as another region-wide concern to be addressed. Such a regional approach would allow project partners to be aware of any ongoing research in the broader area.

Workshop participants felt this project will help bridge the gap between First Nations and non-Indigenous people in the region and wanted the group to stay engaged.

Ongoing dialogue and communication should, they thought, focus not only on the project itself and the role played by different participants, but also be used to build personal relationships between participants. Dialogue and communication were seen as necessary for the project's success as discussions among participants can ensure the identification of weaknesses and opportunities to strengthen the project. Ongoing networking can help evaluate if communication strategies are appropriate for all participants, and identify ways to address dialogue and communication barriers. Participants also felt that human-wolf interactions were of regional concern so needed a unified approach, suggesting that other potential key actors in this project be contacted for future involvement.

The uniqueness of this relies on the very earliest outcome: a co-produced, shared, and agreed upon path forward for the project. Many government agencies are limited by strict rules around engagement, funding use, and what is acceptable within an agency mandate (Panel on the Ecological Integrity of Canada's National Parks, 2000). Parks Canada had the ability to overcome such limitations here by engaging rights-holders and interested parties early on in the process to reevaluate and update the vision, objective and themes of the project. Such an approach resulted in a willingness from all participants to take their share of responsibility and commitment toward the project, making it more than just a "Parks Canada project".

3.2 | Early milestones reached by wild about wolves

For each theme identified during the workshop, a matrix was generated based on the overall information collected. The matrix entails recommended actions by participants with an evaluation of their feasibility over the short (years 1–2 of the project), medium (years 2–3 of the project) and long term (year 4 and beyond the project). Recommended actions have been implemented since the workshop, including: (i) the establishment of a social science research project, (ii) the establishment of a biological research project, (iii) the ongoing learning from Traditional Knowledge, (iv) knowledge mobilization activities, and (v) establishing and building respectful collaborative partnerships.

3.2.1 | Social science research

To better understand and characterize socio-cultural dimensions of human–wolf interactions the project includes social scientists. This collaboration has assessed the existing gaps in research on human dimensions. Four key social science research priorities emerged from this

earlier work: (1) address conflicting awareness messaging on existing sources within the PRNPR (e.g., signage, pamphlets); (2) determine targeted public outreach to address diverse groups within the park; (3) review and analyze previous projects in the area; (4) re-evaluate the goals of the project to foster future interdisciplinary research calling upon both scientific and Indigenous knowledge. “The key to this balance lies within effective collaboration, deep meaningful research insights, and implementation of best-practices” (Khan, 2019, p. 47). The full social science project seeks to explore most of these gaps, as well as the identified needs identified in the workshop.

3.2.2 | Biological/ecological research

To better understand the effect of human activity on the spatial ecology of wolves in PRNPR, Parks Canada has installed a network of 119 remote cameras in and around the reserve. Specifically, wolf spatial and temporal patterns will be quantified in relation to human activity and infrastructure. In addition, wolf scat collections are taking place to better understand the diet and landscape genetics of the wolf population. DNA testing will help researchers understand the diet, ancestry, and kinship of local wolves. To enhance scat collection over such a large area, Parks Canada has launched a citizen science effort called the “poop fairy” program, which provides training to volunteers and invites them to help collect wolf scat for lab analysis (Somos, 2019).

3.2.3 | Traditional knowledge

Sharing of traditional knowledge, values, perspectives, and teachings has been ongoing since the workshop in 2018. Following guidance from the workshop, Parks Canada has been engaging with First Nation partners to identify continued interest and availability to document and share appropriate traditional knowledge related to the project. How this work proceeds is guided by each Nation and has included presentations and conversations with cooperative management boards, Nation governments, elders and knowledge holders, and the communities. Sharing of knowledge and perspectives. These conversations continue to highlight and elaborate on the importance of the wolf to First Nations, the strong connection and importance of reciprocal respect and actions.

3.2.4 | Knowledge mobilization

The knowledge and experiences shared by participants during the 2-day workshop through video-recorded interviews have been disseminated through a series of five

TABLE 1 Wild About Wolves outreach videos made in collaboration with project partners to highlight the diverse components of the project.

Wild About Wolves videos	Reach/view (as of March 13, 2023)	Release date and link
Part 1: Re-entering Pacific Rim National Park Reserve	8486 views	May 30, 2020 www.youtube.com/watch?v=HLGvWTV0SXs&t=6s
Part 2: Traditional knowledge	2550 views	June 6, 2020 www.youtube.com/watch?v=OTsSN3gc9G4
Part 3: Ecological studies	1517 views	June 15, 2020 www.youtube.com/watch?v=PzLZw23Wjo4
Part 4: Human dimensions	1114 views	June 25, 2020 www.youtube.com/watch?v=Q5mVDwZZzDs&t=2s
Part 5: Co-existence	1491 views	June 27, 2020 www.youtube.com/watch?v=RFC6tYVGIrc

educational videos containing messages and stories about living with wolves in PRNPR. As wished by participating First Nations representatives, the first video offers the opportunity to residents, visitors and other interested people to hear about human–wolf interactions and how to live respectfully with this species in PRNPR from local Indigenous People’s perspective. The second video addressed co-existing with the species (Table 1). The remaining three videos highlight the streams of the project and identify many of the themes identified as key during the workshop for the project success (Table 1). These videos are a blend of voices from different cultural, academic, and experience standpoints. They represent the multifaceted, complex nature of the project, yet show the strength of bringing all those voices together to pursue a common value: creating respectful relationships between humans and wolves to peacefully share the landscape well into the future.

3.2.5 | Established collaborative partnerships

Respectful and collaborative partnerships have been key to the early momentum of the Wild About Wolves project and will continue to play an essential role in any future

success. Active collaborations with multiple levels of government, including those from local First Nations, Academics, non-profits, local businesses, and area residents have contributed to multiple aspects of the project. Through ongoing and respectful dialogue with these varied collaborators, broad project support has been established across the study area. This general good will has helped pave the way forward in many respects.

One such example of this would be the establishment of the remote camera array aimed at better understanding habitat use and selection by wolves in the region. The array, which spans both inside and outside the borders of PRNPR, contains approximately 100 cameras. Park reserve staff developed the layout with input from academics, local residents, and representatives from other government agencies. Support was obtained from all land managers and stewards including First Nations, PRNPR, Provincial Parks, municipal governments, and nonprofits. Even the field logistics related to servicing of the cameras have involved collaborations between First Nations, PRNPR, academics, nonprofits, and provincial parks.

4 | CONCLUSIONS

Although the Wild About Wolves project is ongoing as of 2022, and some of its components have been impeded by the COVID-19 pandemic (e.g., scat collection by citizen-scientist volunteers), several pragmatic lessons about the project's process may already be identified. While we do not claim these as evidence of the projects' final "success," they are worth examining because they may be valuable to others in comparable situations. Moreover, documenting provisional findings here provides a baseline that can be used later to more fully assess whether the project has in fact achieved stated social-ecological objectives (e.g., compare Clark & Slocombe, 2005 and Clark et al., 2014).

First, early and ongoing collaboration was crucial in setting the project's priorities and internal norms. The importance of genuine collaboration is well documented elsewhere (Chamberlain et al., 2012; Edwards & Gibeau, 2013; Rutherford et al., 2009), but in this case, a facilitated process allowed systematic and open re-examination and refinement of the project's vision, goals, and research themes. The park was able to act as a partner despite the agency's historical "top-down" management approach (König et al., 2020; Mortimer-Sandilands, 2009; Richie et al., 2012). This might be because of a combination of openness of many of the park's conservation personnel who have had experience in co-managed northern national parks (Dearden & Bennett, 2016). It may also be as a result of a larger, more systemic shift socially and within Parks Canada Agency, as shown by other recent collaborations established

between this agency and First Nations for the Gwaii Haanas National Park Reserve and Haida Heritage Site, the Thaidene Nene National Park Reserve, and the Torngat Mountains National Park among others protected areas.

Second, adopting a co-learning approach set a respectful tone for the project. Knowledge co-production has proven valuable for resolving cross-cultural resource management issues (Cochran et al., 2013; Daniel & Behe, 2017; Hansen et al., 2013), but it requires a deliberate openness by all parties to actually learn new things together, and not just going through the motions. Although the research in support of project objectives was designed to be collaborative and community-directed, it evolved as priorities were clarified through iterative and open discussions with all project collaborators. Specifically, the new prominence of human dimensions research came from such openness to what participants themselves wanted to see. Co-learning explicitly creates a common meta-objective independent of the content of the issues at hand, and may also have an equalizing effect by implicitly characterizing all participants as learners on a shared journey. Moreover, such an approach prevents the decontextualized importation of "solutions" from elsewhere, which not only often fail in new situations but can also create competition for power between the importers of such ideas and those with more localized, contextual orientations (Brunner & Lynch, 2010). Workshop participants stressed the importance of how each of us worked with the different knowledges brought to the project, cautioning against "integration" and suggesting better metaphors such as bridging, weaving, and braiding those different knowledges. While these may not be new concepts in environmental management literature (Kimmerer, 2002; Nadasdy, 1999), it was clearly important for workshop participants to articulate them themselves and to be heard.

Third, reframing human-wolf conflicts using a coexistence, or tolerance-oriented, lens allowed the workshop participants to bridge diverse perspectives and worldviews about how best to interact with wolves. In a general sense, tolerance refers to "the ability and willingness of an individual [or society] to absorb the extra potential or actual costs of living with wildlife" (Kansky et al., 2016, p. 138). Whereas coexistence is "a state or a set of behaviors reflecting tolerance attitudes." (Frank, 2016, p. 739). The benefits of changing problem definitions from focusing on conflict to focusing on coexistence are well documented (Frank et al. 2019a; Nyhus, 2016; Redpath et al., 2013), but we speculate there are further reasons why this apparently succeeded in our case. PRNPR and its surrounding region has a multi-decade history of politicized environmental conflicts (Mendis-Millard & Reed, 2007; Murray & King, 2012), although it has since become an example for new and rediscovered forms of environmental

stewardship such as Tribal Parks, or Indigenous and Conserved Protected Areas (IPCA) in Canada (Zurba et al., 2019). Nevertheless, memories of conflict remain vivid in local communities. Consequently, considerable appetite exists for ameliorative approaches and techniques, which is precisely what a coexistence framing provided to the project.

These three lessons from ongoing work indicate that while the *Wild About Wolves* project may resemble many other consensus-seeking efforts to “fix” human-wildlife conflicts (Chamberlain et al., 2012; Richie et al., 2012; Rutherford et al., 2009), such comparisons would miss deeper underlying dynamics. Specifically, we mean the aforementioned constitutive dimensions of a policy process that underlie the conventional technical dimensions of such processes (Clark & Rutherford, 2014). We believe that this effort's collaborative, co-learning, and coexistence-oriented approach is constitutively different from many that have preceded it because it has already changed relationships in ways that many such previous efforts could not (e.g., Richie et al., 2012). While these substantial differences do not guarantee success, and we certainly do not promise that, our initial lessons from this project indicate room for optimism.

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