What Big Teeth You Have: An Educational Approach to Wolf Conservation

by

Nastassja Brinker

A Thesis Submitted to the Faculty of Social and Applied Sciences
in Partial Fulfilment of the Requirements for the Degree of

Master of Arts
In
International and Intercultural Communication

Royal Roads University
Victoria, British Columbia, Canada

Supervisor: Dr. April Warn
July 2015

© Nastassja Brinker, 2015
COMMITTEE APPROVAL

The members of Nastassja Brinker’s Thesis Committee certify that they have read the thesis titled *What Big Teeth You Have: An Educational Approach to Wolf Conservation* and recommend that it be accepted as fulfilling the thesis requirements for the Degree of Master of Arts in International and Intercultural Communication:

Dr. April Warn [signature on file]

Dr. David Black [signature on file]

Final approval and acceptance of this thesis is contingent upon submission of the final copy of the thesis to Royal Roads University. The thesis supervisor confirms to have read this thesis and recommends that it be accepted as fulfilling the thesis requirements:

Dr. April Warn [signature on file]
Creative Commons Statement

This work is licensed under the Creative Commons Attribution-NonCommercial-ShareAlike 2.5 Canada License. To view a copy of this license, visit http://creativecommons.org/licenses/by-nc-sa/2.5/ca/.

Some material in this work is not being made available under the terms of this license:

- Third-Party material that is being used under fair dealing or with permission.
- Any photographs where individuals are easily identifiable.
Abstract

As the subject of deep-seated cultural and historical antipathies and revulsion, the wolf presents a unique challenge for wildlife educators working to promote its conservation and value as a species while they are forced to combat the systematic persecution and eradication it has suffered historically across North America.

This project used a series of ethnographic interviews and on-site observations to examine how the Northern Lights Wildlife Wolf Centre employs conservation through education strategies by means of its interpretive program, firsthand exposure to wolves, and other messaging platforms to affect attitude changes in visitors towards wolves. This study also examines how attitude change has the potential to encourage long-term pro-environmental behaviour and advocacy for wolf conservation practices.
# Table of Contents

Chapter 1: Introduction ............................................................................................................... 1  
1.1 Purpose of Study .................................................................................................................. 1  
1.2 Significance of Research ...................................................................................................... 2  
1.3 Thesis Statement .................................................................................................................. 3  

Chapter 2: Literature Review ................................................................................................... 4  
2.1 The Human Dimensions of Wildlife ...................................................................................... 4  
2.2 Animal Interactions in Wildlife Education Facilities .............................................................. 9  
2.3 Tourism and Wildlife Conservation Consciousness ............................................................... 11  

Chapter 3: Method ..................................................................................................................... 14  
3.1 Methodology ......................................................................................................................... 14  
3.2 Theoretical Underpinning ...................................................................................................... 14  
3.3 Site Description ...................................................................................................................... 16  
3.4 Participants .............................................................................................................................. 18  
3.5 Methods and Procedures ...................................................................................................... 19  
3.6 Data Analysis ........................................................................................................................ 22  

Chapter 4: Conservation through Education .......................................................................... 25  
4.1 Positive Attitude Change ...................................................................................................... 25  
4.2 Emotionality .......................................................................................................................... 31  
4.3 Conservation through Education ........................................................................................... 32  
4.3.1 Knowledge Gain ................................................................................................................ 34  
4.3.1.1 A Lesson in Balance ......................................................................................................... 34  
4.3.1.2 Lead by Example: Yellowstone National Park ................................................................. 38  
4.3.1.3 A Species Unprotected ..................................................................................................... 38  
4.3.1.4 Sheep in Wolf’s Clothing ................................................................................................. 41  
4.4 Dispelling the Myth: Seeing Wolves Firsthand ..................................................................... 43  
4.4.1 Human-Wolf Interactions ................................................................................................. 43  
4.4.2 The Symbolic Wolf ........................................................................................................... 44  
4.4.3 Creative Expression ......................................................................................................... 47  
4.4.4 Photography .................................................................................................................... 47  
4.5 Conservation Outcomes ....................................................................................................... 48  
4.5.1 A Reason for Understanding ......................................................................................... 48  
4.5.2 The Importance of Education ........................................................................................... 49  
4.5.3 Behavioural Change and Advocacy .................................................................................. 50  

Chapter 5: Wolves on the Horizon: Safeguarding a Species’ Future .................................... 53  

References ..................................................................................................................................... 56  

Appendix 1 .................................................................................................................................... 64  

Appendix 2 ..................................................................................................................................... 68  

What Big Teeth You Have: An Education Approach to Wolf Conservation

Chapter 1: Introduction

The wolf has inhabited the lives and imaginations of human beings since early hominids migrated from Africa and used flint knapped stones to hunt the fearsome creatures that roamed earth’s prehistoric landscape. On a freezing winter day two years ago, a companion and I happened upon some wolf tracks in the snow. Curious, we followed the impressions onto a frozen lake, and were soon surrounded by hundreds of tracks and the remains of an elk, picked clean. Nothing remained but bones and fur. Upon later recalling the experience to a friend, the first thing she asked was why I was not afraid. The answer was that it had simply not occurred to me to be afraid. Yet her question addressed a reaction that many people have to tales of wolves: one of fear and the cultural imaginings of the wolf as a savage, merciless predator.

1.1 Purpose of Study

Founded in 2002 by Casey and Shelley Black, the Northern Lights Wildlife Wolf Centre (NLWWC) utilizes conservation through education strategies to address common myths about wolves and to educate the public about current threats to their survival. The NLWWC’s education strategies include firsthand exposure to captive wolves, interpretive programs, school visits with ambassador wolves¹, and an off-leash photography walk that is the only activity of its kind in the world. While conservation education has emerged as a key element of the larger conservation movement, there is little research on how wildlife education and communication techniques can be used to promote a conservationist agenda specific to wolves (Black & Rutberg, 2007).

¹ Ambassador wolves are captive wolves that play an interactive role in educational programs and other conservation initiatives.
1.2 Significance of Research

Historical perceptions have varied between perceiving the wolf as a biological animal and mythological figure. In early recorded history, First Nations peoples valued the wolf as a cultural and spiritual icon while early Europeans considered them to be positive symbols in culture and mythology. As European society evolved, depredation of livestock painted wolves in a more negative light. They were observed scavenging corpses from outbreaks of disease or on the battlefield, and were demonized in the Middle Ages as symbols of evil (Jones, 2002; Lopez, 1978; Moskowitz, 2013). As a result, wolves were eradicated in Europe before settlers touched foot on North American soil. Anti-wolf sentiments travelled to the New World, and for 300 years, wolves were hunted, poisoned, and trapped until by the 1950s they were largely eradicated from the North American landscape (McCloskey, 2001; Mech, 1995).

Anti-wolf policies have carried on into the present day. In Canada, wolves can be killed any time of the year without a license, permit, or tag. Since 2005, nearly 900 wolves have been shot in Alberta from helicopters, or poisoned under the guise of government efforts to save the woodland caribou (French, 2015). In January 2015, the B.C. government followed suit by enacting a plan to cull as many as 184 wolves in 2015 alone (Keller, 2015). The plan drew widespread condemnation from critics who cited seismic lines, pipelines, roads, and fracking as the primary causes of caribou decline in B.C. (Galloway, 2014). Soon after unveiling the plan, the B.C. government announced its intentions to carry out the killings for at least another five years.
1.3 Thesis Statement

In the face of historical and cultural antipathies, the Northern Lights Wildlife Wolf Centre offers a unique opportunity to observe if its education and conservation initiatives are likely to be successful at influencing positive attitude changes in visitors towards wolves, and encouraging long-term pro-environmental behaviour and support for wolf conservation practices.
Chapter 2: Literature Review

There are three areas of research relevant to the study of wildlife education programs that this literature review will explore. First, an overview of the study of the human dimensions of wildlife in relation to wolves and other large carnivores, and their management, conservation, and reintroduction will be presented. Next, there will be a discussion of previous studies conducted on the effectiveness of using live animals in wildlife and conservation education to affect public knowledge, attitudes, and behaviour. The third section will provide an overview of wildlife tourism and relevant studies that have explored its advantages and pitfalls. The purpose of this literature review is to familiarize the reader with issues surrounding wolf and wildlife conservation in North America, to explain the relevance of the study of conservation education programs in general, and to highlight the need for more research in the area of wolf education specifically.

2.1 The Human Dimensions of Wildlife

Considered by many to be the father of wildlife conservation, Aldo Leopold and other visionaries in the field emphasized that wildlife management should focus less on the management of wildlife and more on the management of people. In his seminal work *A Sand County Almanac*, Leopold stated, “A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise” (Leopold, 1987, pp.224-225).

Positive public attitudes towards wolves are essential to the social success of wolf conservation, recovery, and reintroduction attempts (Black & Rutberg, 2007; Meadow, Reading, Phillips, Mehringer, & Miller, 2005). Since the 1970s, the study of human
attitudes, beliefs, behaviours, and values towards wolves and other predators has been the subject of numerous research efforts (Bruskotter, Schmidt, & Teel, 2007). Meadow, Reading, Philips, Mehringer, and Miller (2007) offered the following distinction between values and attitudes: “A value is a preferred mode of conduct or end state of existence, while an attitude is an affinity or aversion to an object or situation based on beliefs” (p. 155). Perceived impacts on lifestyles and the economy, personal experience, emotions, human-animal relationships, level of knowledge, quantity and tone of media coverage, and the perceived economic or cultural value placed on a species have all been found to affect attitude change (Enck & Brown, 2002; Jacobs, Dubois, & Fehres, 2014; Kellert, 1996; Meadow, Reading, Phillips, Mehringer, & Miller, 2005; Williams, Ericsson, & Heberlein, 2002).

In studying the human dimensions of wildlife, social psychologists have focused on how a person’s stated perceptions and beliefs influence their reported attitudes, intentions, and behaviour (Alessa, Bennett, & Kliskey, 2003). To understand how to effectively influence the underlying factors that shape a person’s environmental behaviour, the theory of reasoned action (TRA) – which was later revised into the theory of planned behaviour (TPB) – has been used to determine how positive or negative attitudes towards a behaviour, the subjective norms surrounding the behaviour, and an individual’s perceived behavioural control influence the intentions to perform the behaviour (Fransson & Garling, 1999; Gutscher & Kaiser, 2003).

Knowledge is one of many factors known to affect attitude change. Knowledge gain is molded by how exposure, receptivity, perception, interpretation, and memory influence knowledge acquisition, comprehension, and retention (Meadow, Reading,
Phillips, Mehringer, & Miller, 2005; Petty, Wegener, & Fabrigar, 1997). While knowledge has the ability to influence attitudes, the process also works in reverse since people selectively interpret, receive, and remember information – especially if the information is “poor, ambiguous, complex, or attitudinally extreme” (Meadow, Reading, Phillips, Mehringer, & Miller, 2005, p. 162). Information that is factual may not be viewed as such, or it might be distorted to defend preexisting attitudes (Meadow, Reading, Phillips, Mehringer, & Miller, 2005). Additionally, emotions play a significant role in changing attitudes towards wildlife (Jacobs, 2012; Jacobs, Vaske, & Dubois, 2014). The result of these findings has been a general acknowledgement that wildlife education programs cannot achieve success on the basis of knowledge acquisition alone (Meadow, Reading, Phillips, Mehringer, & Miller, 2005).

In a study funded by the U.S. Fish and Wildlife Service, Kellert (1985) discovered that when participants were asked to rate their feelings about thirty-three animals wolves rated among the least liked. Kellert (1985) hypothesized that the cause of this “lingering antipathy” in a time of relatively favourable media attention towards wolves might lie in negative cultural and historical depictions (p. 172). In addition, Kellert (1985) observed less favourable attitudes from female participants and people who attended religious services regularly. He also noted a decrease in positive attitudes for every increase in age group, and confirmed that livestock producers held the most negative attitudes out of any interest group examined.

Additional factors such as wolves’ perceived dangerousness, reputation for causing property damage, predatory and carnivorous nature, and association with wilderness, along with decline in deer and elk populations were also outlined as potential
causes of negative perceptions towards wolves. Positive attitudes correlated to factors such as size, intelligence, social organization, and the wolf’s evolutionary relationship with humans. In addition, their role in keeping deer, elk, and rodent populations in check, importance as a wildlife species, and ability to encourage people to value wilderness were also associated with positive attitudes (Kellert, 1985; Pate, Manfredo, Bright, and Tischbein, 1996).

Numerous studies have concluded that an individual’s education level positively correlates to greater awareness about wildlife and the environment as well as to favourable attitudes towards wolves and other predators (Kellert, 1985; Lohr, Warren, Ballard, & Bath, 1996; Williams, Goran, & Heberlein, 2002). Higher knowledge about wolves was also determined to correlate to more favourable attitudes (Bath, 1987; Lohr, Warren, Ballard, & Bath, 1996). By contrast, Kellert (1985) and Kellert, Black, Rush, and Bath (1996) concluded that the relationship between positive attitude change and knowledge gain was relatively unrelated. This discrepancy may be explained by these studies’ respective sampling techniques: while Kellert (1985) and Kellert, Black, Rush, and Bath (1996) used random sampling techniques Bath (1987) and Lohr, Warren, Ballard, and Bath’s (1996) study samples included participants from interest groups that were more predisposed to an interest in wildlife and environment-related topics.

In a survey to determine public attitudes towards a proposed wolf reintroduction, Enck and Brown (2002) discovered that positive attitudes towards wolves were the strongest predictor of favourable attitudes for reintroduction. A positive correlation between support for reintroduction and knowledge about wolves was also discovered in multiple studies (Enck and Brown, 2002; Lohr, Ballard, & Bath, 1996). By contrast,
Kellert (1985) observed that knowledge about wolves didn’t necessarily correlate to positive attitudes. In addition, the role of personal and economic interests were noted when some respondents with positive attitudes towards wolves held negative views towards their reintroduction if they were involved in the livestock industry (Pate, Manfredo, Bright, & Tischbein, 1996). This might also account for Lohr, Ballard, & Bath’s (1996) observation that despite holding more favourable attitudes towards wolves, naturalist groups were on par with hunters for not supporting wolf reintroduction on average.

In a longitudinal survey of studies assessing attitudes towards wolves from 1972 to 2000, Williams, Goran, and Heberlein (2002) concluded that positive attitudes had not increased over time but that those with less developed attitudes were more likely to be persuaded to change them if exposed to strong beliefs and attitudes. Petty, Wegener, and Febrigar (1997) also discovered that people with less developed attitudes towards wolves were more susceptible to changing them. In addition, Meadow, Reading, Phillips, Mehringer, and Miller (2005) determined that “people with strongly held attitudes will increase the extremity of their opinions after receiving more information” (p. 154). Overall, it can be concluded that “reasons for various attitudes about wolves are complex and not determined by any single factor” (Lohr, Ballard, & Bath, 1996, p. 417).

Evoking emotions that encourage a strong connection or orientation to wolves has the potential to cultivate environmentally responsible behaviour and support. Jacobs, Vaske, and Dubois (2014) identified feelings of disgust towards wolves as the most accurate predictor of support for lethal wolf control while joy was discovered to have the opposite effect. Myers, Saunders, and Birjulin (2004) noted a number of factors that
influenced emotions in a zoo setting such as the visitors’ social group dynamics, their contextual goals and interpretations, biological dispositions, behaviour of the animals, and cultural coding for emotional meanings. Participants’ demographic backgrounds were also proven to be limited in their ability to predict emotionality. Overall, the role emotions play in wildlife education remains a relatively underdeveloped area of study.

2.2 Animal Interactions in Wildlife Education Facilities

Most contemporary North American zoos have widely shed their prior focus on entertainment and recreation as intended goals of the visitor experience. Today many embrace conservation, research, and education to “present conservation education in a way that inspires the recreational visitor to act in a desired, environmentally responsible manner” (Ogden & Helmich, 2009, p. 357). In addition, interaction with animals has been associated with an increase in empathy, perceived similarity, and shared identity (American Zoo and Aquarium Association, 2002; Clayton, Fraser, & Saunders, 2008). How attitudes are influenced by the incorporation of live animals into wildlife education programs has been the topic of numerous studies throughout the U.S. although research into the effectiveness of wolf-specific education programs requires further study (Black & Rutberg, 2007).

Wolf education facilities have risen to the challenge of promoting conservation through education by using live wolves in their education programs. Black and Rutberg (2007) conducted a study into the use of ambassador wolves for education in Wolf Park, Michigan. The study identified three ways that live animals can be used in education:

‘Exposure’ limits the audience to viewing the animal while the educator talks about the animal. ‘Modeling’ includes exposure where the educator also interacts
with the animal. ‘Contact’ allows the audience to hold or touch the animal during the education program (Black & Rutberg, 2007, p. 4).

Black and Rutberg (2007) observed an increase in knowledge and attitudes, and they determined that these increases occurred independently of each other. Surprisingly, exposure alone was discovered to have a greater impact on an increase in attitude scores than a combination of exposure and modeling. The study also observed that of the visitors who indicated previous neutral or negative attitudes towards wolves 71.2% left with an increase in positive attitude scores (Black & Rutberg, 2007, p. 8).

A number of studies have determined that simply seeing an animal will not affect a zoo visitor’s knowledge or attitude scores. In a study of student attitudes towards snakes, Morgan and Gramann (1989) noted that exposure to snakes alone did not affect attitude scores but a combination of exposure and modeling caused a significant increase. In addition, a presentation about snakes was proven to be effective for increasing knowledge but not positive attitudes towards snakes. De White and Jacobson (1994) observed that educational activities in the classroom and at the zoo yielded a significant increase in knowledge and attitude scores. Exposure to animals alone was inadequate in affecting cognitive scores.

Miller et al. (2003) observed an immediate increase in conservation-related knowledge, attitudes, and behaviours in participants of dolphin shows and interactive programs. While participants of dolphin shows were discovered to experience a decrease in attitudes and behaviour three months later, those who participated in interactive programs retained an increase in all three attributes. Visscher, Snider, and Vander Stoep (2008) also observed that education about black rhinoceroses that included an interpretive
program as opposed to a fact-only presentation was more effective in promoting knowledge gain, suggesting that “how information is conveyed is just as important as what is being taught” (Visscher, Snider, & Vander Stoep, 2008).

In a study of how constructed meanings influenced the conservation values of zoo visitors, Clayton, Fraser, and Saunders (2009) concluded that visitor knowledge was acquired in relation to the visitor’s social and physical context as “a leisure pursuit situated within the self-concept of the visitor rather than a measure of knowledge acquisition prioritized by the institutions they are attending” (Clayton, Fraser, & Saunders, 2009, p. 393). In addition, identity-related motivation, emotionality, the attribution of social stereotypes to animals, and a sense of perceived connectedness were all linked to conservation-oriented attitudes (Clayton, Fraser, & Saunders, 2009).

### 2.3 Tourism and Wildlife Conservation Consciousness

Nature-based tourism that promotes firsthand experiences with wild and captive animals has emerged as a growing industry (Curtin, 2009; Priskin, 2003). Reynolds and Braithwaite (2001) defined wildlife tourism as “an area of overlap between nature-based tourism, ecotourism, consumptive use of wildlife, rural tourism, and human relations with animals” (p. 32). Many promote wildlife tourism as a human-nature interaction with the ability to affect self-perception and encourage positive conservation meaning making that shapes environmental understanding and behaviour (Lemelin & Wiersma, 2007; Milstein, 2008).

Milstein (2008) spent years observing how communication acted as a mediating force of human-nature relations for whale watchers. A number of themes portrayed the framing effects of whale watching on whales as everything from “a profound ‘doorway’
to complex human-nature interrelations” to “a deadend serving as the entirety of touristic points of focus isolated from ecological relations” (Milstein, 2008, p. 189). A major theme to emerge from the study was silence as a communicative phenomenon. The whales’ ability to influence people to learn more about them, to bring people in touch with nature, and to foster a desire to protect them and their habitat was described as allowing whales to “speak for themselves” (Milstein, 2008, p. 182). Lastly, the whales were often referenced as cultural icons, and acted as markers of balance, and metaphorical representations of the human relationship with nature.

Lemelin and Wiersma (2007) interviewed wildlife tourists in Churchill, Manitoba to investigate the social and visual dimensions of polar bear viewing and “the need to see, to quantify, and to capture, and the repercussions of these needs by the tourist” (Lemelin & Wiersma, 2007, p 39). Three major themes emerged: characteristics of the experience, perceptions of the self and of others, and photography. While some participants felt that more education and interpretation would have enhanced their visit others focused on more self-reflective aspects. Photographs were perceived by tourists as trophies, memories, or as detracting from the overall experience. The study highlighted the need to encourage ‘non-consumptive’ wildlife viewing practices that promote a respect for nature and preserve the dignity of the animal being viewed to facilitate empathy, understanding, and ecological awareness (Lemelin and Wiersma, 2007).

Messaging strategies are essential for successful conservation initiatives. Lin (2012) studied the Elephant Nature Park’s use of multiple communication platforms and consistent messaging to convey their conservation goals by explicitly identifying elephant endangerment as a problem and proposing clear and realistic solutions. The study
identified thirty-five forms of social media that the Park used to disseminate information, maintain an active relationship with its supporters, and engage in viral marketing. While local schools, tour groups, and conservation groups were invited to the Park on a regular basis, successful face-to-face communications and firsthand experiences of park visitors led to extensive funding and volunteerism. The Park also established trust with local populations by adopting a policy of cultural sensitivity and a number of building and teaching initiatives. Through soft persuasion, the recognition of local cultures, and an adoption of Western-style advocacy the Park achieved remarkable success in challenging deeply entrenched, exploitative, and negative views held about elephants in Thailand (Lin, 2012).
Chapter 3: Method

This applied ethnographic case study describes how the Northern Lights Wildlife Wolf Centre uses its education program to attempt to influence visitor attitudes towards wolves, with the hope of encouraging pro-environmental behaviour and long-term advocacy for wolf conservation practices. Interviews and observations conducted on-site at the NLWWC were used to collect data. The primary objective was to investigate how conservation goals are promoted through visitor-educator communications, as well as how the presence of live wolves may have the potential to impact educational outcomes.

3.1 Methodology

Applied ethnography utilizes the ethnographic principle of studying people through fieldwork in their own cultural environment (Singer, 2009) to gain an “understanding of actors’ everyday theories” (Lyon, 1997, p. 7) while allowing for subjectivity and reflexivity throughout the research process (Neyland, 2008). In contrast to traditional ethnography which aims to develop cultural and social theory, applied ethnography approaches research with the goal of contributing information to develop policies and actions that benefit programs striving to improve approaches to contemporary social, economic, and technological issues (Van Willigen, 2002, p. 9).

3.2 Theoretical Underpinning

In the context of conservation education, the theory of reasoned action (TRA) and theory of planned behaviour (TPB) provide a framework for the analysis of how educational efforts might affect behavioural outcomes. Hines, Hungerford, and Tomera (1986) used the TPB to develop the Model of Responsible Environmental Behaviour and determined the following variables to be associated with pro-environmental behaviours:
knowledge of issues, knowledge of action strategies, locus of control (an individual’s perception of whether or not they have the ability to enact change through their actions), attitudes, verbal commitment, and individual sense of responsibility (Agyeman & Kollmuss, 2002).

While both theories assume that attitudes influence behaviour, it is important to acknowledge that, “the question of what shapes pro-environmental behaviour is such a complex one that it cannot be visualized in one single framework or diagram” (Bright, 2003; Agyeman & Kollmuss, 2002, p. 248). Due to the number of variables that determine and influence pro-environmental behaviour, some researchers have also concluded that, “the environment is a domain in which attitudes do not predict behaviours very well” (Bright, 2003; Ungar, 1994, p. 288).

This complexity may cause the same behaviour to be “performed for different reasons by different individuals or by the same individuals at different times” (Alessa, Bennett, & Kliskey, 2003, p. 378). In this sense it is accepted that while the development of a model that identifies all of the variables that influence pro-environmental behaviour is likely unrealistic, the TRA and TPB can assist the researcher in determining factors that lead to behavioural intention as well as to navigate how the complex interplay between knowledge, attitudes, and emotionality comprise what Agyeman and Kollmuss (2002) referred to as “pro-environmental consciousness” (p. 256).

In the TRA and TPB, behavioural intention is “seen as a function of people’s attitudes” alongside of the participants’ subjective norms and perceived control over their ability to conduct the behaviour (Kaiser & Gutscher, 2003, p. 587). These theories have been used to explain a wide variety of environmental behaviours and intervention
outcomes, and in some cases have been discovered to create “useful tools to understand the internal motivations of the audience” and develop “ideas about the types of messages that could be used to change behaviour” (Jacobson, McDuff, & Monroe 2006, p. 75).

While the TPB was used to guide this study, its limitations were also noted and considered. Limitations to this theory include an acknowledgement of the complexity and number of factors that affect attitude change and the assumption that “the relationship between attitude and behaviour is imperfect” (Agyeman & Kollmuss, 2002; Alessa, Bennett, & Kliskey, 2003; Bright, 2003; Hines, Hungerford, & Tomera, 1986, p. 379). As a result, the focus for this study was to explore and describe the factors contributing to attitude change towards wolves in visitors to the NLWWC. Behavioural intentions were also examined and will be discussed later.

3.3 Site Description

The study occurred on site at the NLWWC, outside of Golden, British Columbia. Nestled in the province’s southeastern mountains, Golden is a 1.5-hour drive from Banff: one of Canada’s most well-known tourist destinations. Signs located on the highway and pamphlets displayed by businesses in nearby towns attract travelers and tourists to the Centre. Locations of interest within the NLWWC are the greeting area and gift shop, a large, well-maintained outdoor common area containing picnic tables (see Appendix 1, Photo 1), walkways, informational exhibits, an on-site residence that’s home to the Centre’s founders, and the wolf enclosure and interpretive program area.

Casey and Shelley Black opened the Northern Lights Wildlife Wolf Centre in 2002. Holding previous tourism experience from running a river rafting company, the Blacks created the Centre with education and filming in mind. Over the next five years,
the Centre’s wolf pack grew from one to six members, and the Centre was gradually built onto the land that it occupies today. It wasn’t long before the Blacks turned the Centre’s focus to conservation education, and today, between 15 and 16,000 people visit the Centre every year. The NLWWC also boasts a low staff turnover, and has employed 17 different employees in 13 years.

The Centre’s wolves and wolf dogs are acquired through a combination of breeding facilities and rescues. Shelley explained that the ability to exercise the wolves outside of their enclosures was central to their decision to open the Centre, and so the wolves acquired at a young age are trained to run free on off-leash walks. This activity has been integrated into the photography walks offered by the NLWWC, and visitors are able to walk with and photograph the wolves as they explore the mountain forests surrounding the Centre. Today, the NLWWC is home to eight wolves.

Interviews with the NLWWC’s owners and staff in addition to observations of its interpretive program, informational signs and billboards, website, and mission statement serve to demonstrate its self-identity as an education and conservation Centre. In addition, visitors are encouraged to visit the NLWWC’s website and gift shop to learn more about wolves and various conservation initiatives. The gift shop offers additional information and pamphlets about wolf and wildlife conservation, and the website hosts a “Wolf Conservation Blog” in addition to information about arranging educational initiatives such as school tours. Sponsorship information on how to become a “Pack Member” or “Adopt a Wolf” is also readily available. In addition, the NLWWC communicates to past visitors about conservation-related issues and current events through an electronic newsletter and Facebook page.
Informational posters and billboards are located strategically along walkways and offer information on wolf behaviour and physiology, local ecology, Canadian species at risk, the Canidae\(^2\) family, the wolves at the Centre, and wolf sponsorship (see Appendix 1, Photo 2). A structure labeled “The Road Kill Burger Shack” (see Appendix 1, Photo 3) invites visitors to touch and identify various samples of fur. The back wall of the gift shop serves as a display for a variety of labeled animal skulls and bones (see Appendix 1, Photo 4), and another exhibit displays an example of the bones left at a typical wolf kill site. The Centre is surrounded by mountain forest that provides a natural backdrop, and interviews were often punctuated by the sounds of squirrels, ravens, and howling wolves.

A long bench accommodates visitors as they listen to the interpretive program while the presenter inhabits a space between the enclosures and a second, shorter fence that serves to keep visitors from direct contact with the enclosures. Programs at the NLWWC begin every half hour and last for approximately twenty-five minutes so that visitors arriving mid-way can easily join the next program (see Appendix 1, Photo 5). The information presented includes an introduction to the individual wolves at the Centre, an overview of the Centre’s history and mission statement, facts about wolf behaviour and physiology, and information about wolves’ importance to the environment, current status, persecution, and eradication.

### 3.4 Participants

The participants of this study can be categorized into three units of analysis: Casey and Shelley Black, the NLWWC’s employees, and the NLWWC’s visitors. These three groups were selected for study due to their ability to represent various aspects of the

\(^2\) *Canidae* refers to a taxonomic family of carnivorous mammals that includes dogs, wolves, foxes, and jackals.
NLWWC in a thorough and holistic manner. Over the years, Casey and Shelley Black have shaped the Centre’s organizational direction and objectives, guided its employees, and provided a cohesive family structure for the Centre’s wolves by acting as the pack’s alpha male and female. The NLWWC’s employees each bring their own unique backgrounds, observations, and experiences to their work, and present individualized versions of the Centre’s interpretive program. NLWWC visitors provide the focus for this study, and are the most direct measure of the impact of the Centre’s educational efforts on the general public.

3.5 Methods and Procedures

This study was conducted in 2014 over the course of three two-day visits to the Centre, from July to October, for a total of six days. Due to the travel time required to reach the Centre and scheduling constraints for the Centre’s owners and myself, I was unable to arrange additional visits. The data were collected through observations, interviews, and photographs, and data collection occurred for seven to nine hours a day. Overall, participants interviewed included the NLWWC’s founders Casey and Shelley Black, five employees, and sixty-two visitors.

Visitor interviews were confined to a shorter length at the request of the Centre’s founders, and were comprised of twenty-nine group and individual interviews. A semi-structured interview format was used for all interviews to allow for a list of topics and questions to be addressed, as well as to provide freedom for the interviewer to follow topics of interest when appropriate. Interview questions remained the same for both individual and group interviews, but for groups I encouraged a discussion-oriented format
to allow for multiple participants to express themselves openly and fluidly without restricting the conversation to answering questions rigidly and one at a time.

An interview format was chosen over the use of a pre- and post-experience questionnaire for a number of reasons. First of all, in keeping with the Centre’s wishes to minimize visitor disruptions, interviews were chosen because they only involved one visitor interaction (after the interpretive program) as opposed to before and after the interpretive program as would have been the case with a questionnaire. Interviews also allowed for the observation of non-verbal behaviour, and gave visitors the ability to ask for clarification or more information about what they are being asked. In addition, interviews allowed for the engagement of participants in follow up questions or new discussion topics if desired. Interviews are also more accessible for demographic groups such as children who might have difficulty filling out a questionnaire.

Participants were generally selected for interviews from among visitors using a convenience sampling procedure. When possible, efforts were made to use purposeful sampling by interviewing people with varying points of view by approaching a variety of ages, genders, ethnicities, and cultural backgrounds. In addition, I made an effort to engage visitors who appeared to be less willing to participate to provide a counterbalance to visitors who approached me for interviews without being asked. Available staff and the Centre’s two founders were also interviewed. Interview questions with visitors explored their motivations for visiting the Centre, past perceptions of wolves, how their visit to the Centre might have changed their attitudes, and any future actions they might take to advocate on wolves’ behalf (see Appendix 2). Interview questions with the NLWCC’s founders (see Appendix 4) and staff (see Appendix 3) explored the interviewees’
previous experiences at the Centre and their own observations about how the Centre attempts to affect attitude change in its visitors. Demographic information was recorded based on observations of participants as they were interviewed, but participants were not asked to provide demographic information directly in order to prevent from impeding interview flow in the allotted time.

Interviews were conducted after the interpretive program so that my presence affected the visitors’ experience as little as possible. Participants either approached me or I approached them as they explored the Centre. Staff were interviewed during slow periods at the picnic tables located in the common area or while standing in the gift shop. Interviews with the Centre’s founders, Shelley and Casey Black, were conducted in the kitchen and dining area of their home. Each interview was digitally recorded for accuracy and interview lengths ranged from five minutes to 1.5 hours. Observational fieldnotes included information about the study’s setting, informal conversations, notable events, participant behaviour, the behaviour of the wolves themselves, and my own self-reflections. Photographs were taken of the interpretive talks, the Centre, and the informational posters and billboards.

Interviewees were asked to sign an informed consent form before the interviewing process began, and were reminded that all interviews were voluntary and could be terminated at any time. A verbal explanation of the study’s purpose was also provided. Prominent individuals in photographs and persons under 19 years of age were asked to fill out a “Consent to Use of Image” form. Physical data was stored in a secure, locked location and electronic data was password protected. Data collection did not proceed until a request for ethical review was approved by Royal Roads University’s Research Ethics
Board, and the Tri-Council’s policy statement for the conducting of ethical research was consulted throughout the research process.

Due to the NLWWC’s nature as a wolf conservation and education Centre, it is probable that participants were more likely to harbour pre-existing positive attitudes towards wolves than would a more random sample. While efforts were made to approach visitors for interviews objectively, this potential bias should be noted. As studies have found that higher correlations between positive attitudes and knowledge in populations with more favourable pre-existing attitudes exist, it should also be considered that this relationship may not be as strong in a more random sample (Bath, 1987; Kellert, 1985; Kellert, Black, Rush, & Bath, 1996; Lohr, Warren Ballard, & Bath, 1996).

With access to additional resources, an advantage to this study would have been the ability to conduct interviews before and after the interpretive program, or to use pre- and post-program questionnaires to describe reported attitude changes in visitors. I was also aware when conducting this study of several inherent biases. Research was conducted in a relatively short timeframe, and so factors such as tourist demographics and staff composition were limited in my sample. As a result, this study’s results cannot be generalized to a larger group. In addition, the study was conducted in a pro-wolf centre with clear conservation messaging, and immediately after a pro-wolf, pro-conservation visitor experience. As such, the results of this study should be reviewed with these factors in mind.

3.6 Data Analysis

This study’s objective, which was to explore how the NLWWC uses firsthand experience and its interpretive program to influence visitor perceptions about wolves,
WHAT BIG TEETH YOU HAVE

provided the focus for analysis. All data was derived from textual analysis of interview transcripts, observational field notes, and information from the Centre’s interpretive program, posters, interactive areas, billboards, pamphlet, educational materials, and website. Data was reviewed with an eye for rich and descriptive information and was used to describe the interpretive program and overall experience from the participants’ point of view.

Narrative data and field notes were transcribed, coded, and categorized into major themes and sub-themes using an adapted version of grounded theory. According to Glaser (1992), grounded theory allows the data to control the analyst “by writing a theory for only what emerges through his skilled induction” (p. 87). Data analysis was initially approached by using a line-by-line open coding method. This allows the researcher “to verify and saturate categories, minimizes missing an important category, and ensures relevance by generating codes with emergent fit to the substantive area under study” (Holton, 2010, p. 24). It also enables the researcher to “see which direction to take in theoretically sampling before becoming too selective and focused on a particular problem” (Holton, 2010, p. 24).

Key themes and processes were identified as they emerged using both indigenous and analyst-constructed typologies (Patton, 1987). Coding began with an initial reading of the text followed by an identification of the segments related to the study’s objective. Related segments were then collapsed to create categories allowing for the most relevant themes to emerge (Thomas, 2006). Using a descriptive approach (Lyon, 1997), interpretation was guided by patterns, themes, program content, and activities as they were identified through data analysis or directly by participants. Memoing was also used
alongside of coding to make sense of conceptual connections between categories as they emerged (Holton, 2010).

The result of the coding process generated 413 initial codes from visitor interviews, 166 codes from interviews with the Centre’s employees, and 102 codes from interviews with Casey and Shelley. I also coded two interpretive program presentations that I had digitally recorded which resulted in 84 codes. Finally, my field notes generated 93 codes. Related codes were subsequently combined into a total of 445 codes, and were determined to fall into 11 categories: emotional responses, knowledge increase, attitude change, balance and concern for the environment, seeing wolves firsthand, about the NLWWC, proposed solutions and advocacy actions, understanding potential causes, visitor motivations, and past perceptions and experiences. Overlapping or similar categories were further collapsed into five final categories: positive attitude change, emotionality, knowledge gain, seeing wolves firsthand, and conservation outcomes.

Three of the five final categories held a number of sub-categories that were developed as a result of emergent themes and patterns observed within the codes of each category. Under the category of knowledge gain, the sub-categories of balance, Yellowstone National Park, wolves as an unprotected species, and wolf scapegoating and stereotyping emerged. The category of seeing wolves firsthand presented sub-categories related to human-wolf interactions, the symbolic wolf, creative expression, and photography. Finally, the conservation outcomes category was divided into the sub-categories of understanding, the importance of education, and behavioural change and advocacy.
Chapter 4: Conservation through Education

Interviews conducted with the NLWWC’s visitors, staff, and owners in addition to observation field notes revealed a wealth of information about how the Centre uses firsthand experience and its educational program to influence visitor perceptions about wolves. Visitors interviewed appeared to be between five and eighty years of age, and countries of origin included Canada, the United States, Israel, the Netherlands, Peru, Germany, Australia, Russia, Israel, and New Zealand.

4.1 Positive Attitude Change

Central to the theory of planned behaviour (TPB) is the belief that if a person’s positive or negative attitudes towards a subject or target can be influenced, their behavioural outcomes in relation to that subject or target will be influenced accordingly (Kaiser & Gutscher, 2003). Attitudes towards wolves are not easily changed, and the pathological urge to kill wolves throughout human history has often gone far beyond predator control:

Indeed, this is the way we commonly treat all predators… But the wolf is fundamentally different because the history of killing wolves shows far less restraint and far more perversity. A lot of people didn’t just kill wolves; they tortured them. They set wolves on fire and tore their jaws out and cut their Achilles tendons and turned dogs loose on them. They poisoned them with strychnine, arsenic, and cyanide, on such a scale that millions of other animals… were killed incidentally. In the thick of the wolf fever they even poisoned themselves, and burned down their own property to get rid of wolf havens (Lopez, 1978, p. 139).
The intensity of humankind’s hatred for the wolf has permeated cultural memory to such a degree that altering people’s perceptions of them presents a daunting task. Yet nearly all of the participants interviewed for this study stated that they had experienced an attitude change as a result of their visit to the NLWWC.

Most participants who stated that they had positive pre-visit attitudes described experiencing an apparent strengthening of those attitudes. This supports the attitudinal theory that receiving more information will cause people with strongly held attitudes to increase the extremity of their opinions (Meadow, Reading, Phillips, Mehringer, & Miller, 2005). As one visitor explained:

I don’t think I have the conception of the “big bad wolf”. So if anything, it confirmed my understanding of the wolf. What I found really interesting is understanding the place of the wolf… as a keystone species. It was fascinating. Also, understanding what’s happening with our own lack of conservation in Canada compared to other places.

Attitudes are formed by a complex interplay of numerous factors (Bright, 2003). The most prominent factors observed in this study to cause potential positive attitude change towards wolves in visitors were firsthand exposure to wolves, knowledge gain, and emotionality. To qualify this, values from across Kellert’s (1997) scale of nine attitudes “thought to reflect a range of physical, emotional, and intellectual expressions of the biophilic³ tendency to associate with nature” (Kellert, 1997, p. 74) may be used:

Aesthetic: An aesthetic attraction for animals and nature.

Dominionistic: Interest in exercising mastery and control over wildlife.

³ A biophile is a person with a strong connection, attraction, or emotional attraction to life and all living organisms.
Ecologistic-Scientific: Inclination to understand the biological functioning of organisms and their habitat.

Humanistic: Affection and emotional bonding with animals, a moralistic concern for ethical relations with the natural world.

Naturalistic: Interest in experiencing wildlife and the outdoors, a symbolic use of animals and nature for communication and thought.

Utilitarian: Interest in pragmatically exploiting wildlife and nature.

Negativistic: Avoidance of animals and the natural environment for reasons of fear, dislike, or indifference (Kellert, 1997, p. 74).

Kellert’s (1997) attitude scale is useful in the context of this study as it provides a measure of participants’ pre- and post-program attitudes towards wolves, wildlife, and other nature-related topics. For participants holding more negative attitudes prior to their visit such as dominionistic, utilitarian, or negativistic, interviews revealed that most developed inclinations towards the ecologistic-scientific and humanistic attitudes after participating in the interpretive program.

Black and Rutberg (2007) noted a propensity for visitors with neutral attitudes to experience an increase in positive attitude scores. A female participant offered an explanation of her own experience upon learning about anti-wolf measures:

And sometimes it’s people like me, you know. Don’t necessarily agree with it but are ignorant to it, to what’s been going on. You know, you’re busy with your life and you don’t always pay attention… and then when you hear about it… to me it is appalling. It definitely has opened my eyes and I will definitely be more aware of it and seeing where I can help.
In addition, a number of participants discussed how their perceptions of wolves as vicious predators had changed. A woman from Germany remarked, “The first thing was that the wolf was dangerous and he would probably bite a human or whatever and yes now I changed my opinion… with all of the informational boards and everything.” Similar sentiments were also echoed in new understandings of the importance of the wolf’s role as a predator and its impact on the ecosystem as a whole. A Canadian man explained, “I thought they were just predators; predators come in, they clean out an area, they want to eat and kill. I didn’t realize that it’s important that they do eat and kill.”

Many of the positive attitude changes stated by participants were more dramatic. In some cases, this was communicated through the visitor’s recounting of outside factors that had influenced their own fear and attitudes towards wolves:

I think for me it’s certainly the comment that Little Red Riding Hood was lying. It was sort of interesting because I’ve always certainly had the perception that a wolf is not something that you want to run into… I’ve historically been in the oil and gas industry where we’ve looked at how do we save the caribou, and so… I’ve always sort of seen the wolf as the bad guy. As a parent you’re always trying to educate and inform, and also make sure that the misinformation is corrected… prior to this I would have talked about how a wolf is a predator and stay away from wolves… I have more empathy now I guess.

In addition to an increase in empathy, a number of participants stated that their visit to the Centre had completely changed their opinion. Some recalled past encounters with the anti-wolf measures described in the interpretive program:
I always thought they were bad. Like, my ex-boyfriend does that bounty stuff that she’s talking about. They go out with a bunch of them and they bring back however many heads they can get and get money from the government for it. The fact that they’re doing that to encourage people, it’s completely wrong. If anything I’m ‘pro-wolf’ now.

In the majority of studies conducted to determine public attitudes towards wolves or their reintroduction, livestock producers consistently represented a demographic that held negative perceptions (Kellert, 1985; Kellert, 1996; Williams, Ericsson, & Heberlein, 2002). The NLWWC’s interpretive program addresses the low rate of livestock deaths attributed to wolves as compared to disease, and lists alternatives to killing wolves such as guardian animals and visual deterrents. A number of participants described their experiences with the antagonistic views held by the livestock industry of wolves and other predators:

I thought that the part about the cattle was interesting because my dad had a large cattle farm and he just hated coyotes because they did used to kill his calves… and just when he explained that it’s really part of a cycle. So once you get rid of them then it’s really disease that’s the issue… that was helpful for me because I thought about it differently. I just always thought of them as predators of our cattle.

Popular depictions of wolves evolved alongside of their reputation as being “evil, vicious, cunning, and rapacious” (Wallner, 1998, p. 32). One participant used the example of the wolf as the proverbial raider of chicken coops:
So, we hear all the time about wolves coming to places and eating the chickens. I mean it’s really like the bad guy. And for me at least it changed totally the perspective I had about wolves. Even when she was saying… it’s like all predators they attack you because they’re afraid of you actually, they don’t always want to eat us… which is the wrong image we have about wolves.

There were also several participants who stated that they were inspired to learn more about wolves as a result of their experience. This included a desire to read or watch documentaries, explore the NLWWC’s website, or to follow up with Fish and Wildlife officers about what they had learned. Visitors also verbalized their intentions to conduct research to further their understanding of the wolf’s current status or to confirm the accuracy of the information offered in the interpretative program. A female visitor explained:

I mean I love animals, I really do. And I never really tried to read about wolves. Wolves and sharks are animals that I’ve always had a very negative, I don’t know, idea about. And actually today after what she said for me it did affect and I think I’m going to… after today I’m going to look at wolves different and I’m going to be more wanting to read more to do with these animals.

Finally, participants spoke of experiencing a reduction in the most common emotion associated with wolves: fear. As one female participant remarked, “I was afraid of them. I would have been afraid of them so I learned that I didn’t really need to be.” These responses demonstrated a significant sample of stated pre-visit attitudes from across Kellert’s (1997) attitude scale: utilitarian (oil and gas, farming and ranching), dominionistic (wolf bounties), and negativistic (fear). Values potentially demonstrated as
a result of stated attitude change included ecologistic-scientific (changed perceptions in light of new information, wanting to learn more) and humanistic (empathy, becoming “pro-wolf”).

4.2 Emotionality

In addition to verbally stating or physically showing that they were upset to learn about Canada’s anti-wolf policies, many visitors responded to the information presented in the program using emotionally charged language. Studies have demonstrated that when entwined with moral conviction, emotion can become a strong predictor of behaviour (Myers, Saunders & Birjulin, 2004). Interviews with the Centre’s owners and staff revealed that eliciting emotion is an active part of their communication strategy. Shelley described, “You just lay it out. You don’t make it lighthearted, you just lay it out and that hits home.” Terms such as “genocide,” “executions,” “euthanizing a species”, and “draconian measures” were all used by visitors to describe anti-wolf measures. Staff also felt that playing on emotion is an effective strategy in motivating visitors to advocate for wolves:

Some people will be so moved by what we say in conservation parts that you'll… they'll leave and they're crying, right? And they respond to that very well and then they'll be the ones that will go home and try to start changes.

Kals, Schumacher, and Montada (1999) determined that cognitive interest in nature, emotional affinity towards nature, indignation about insufficient nature protection, and past and present experiences with nature act as predictors of nature-protective behaviour. In particular, indignation was portrayed in a number of visitor responses: “I want to get kind of active with the government… stop this craziness. I almost started crying when
she was talking about it.”; “I’m really upset with the way the government is treating wolves… it pisses me off… that was probably the biggest thing, is the way the government is dealing with wolves and the impact that is has on our environment.”; and “Very upsetting to know that they have the reasoning behind their declines in their so-called species that they want to protect… it’s like you want to go and say, ‘Smarten up!’”

Some visitors used descriptors such as shocked, surprised, mindboggling, and disbelief to interpret their reactions. Still others described anti-wolf policies as crazy, terrible, stupid, heartbreaking, disgusting, illogical, irrational, shameful, lacking common sense, and shortsighted. To explain their personal emotions, participants used words like upset, mad, infuriated, appalled, angry, frustrated, concerned, and ashamed. The idea that “people fear that which they don’t understand” was expressed by some visitors in relation to either themselves or to others. As Casey explained, “You can be out in the woods in the dark and be afraid. Just of the unknown. You can be in the basement and you know there’s no wolves down there… people can be afraid. It’s inexplicable.” While visitors were not asked questions explicitly related to fear, some stated that they feared wolves prior to their visit. In addition, fear was not an emotion that interviewees reported feeling at the Centre. The only other context in which fear was discussed was when participants voiced their opinions about what they felt the causes were for negative perceptions about wolves.

4.3 Conservation through Education

The goal of conservation education is not simply to present information, but to achieve environmental literacy through instilling “knowledge about the environment, positive attitudes toward the environment, competency in citizen action skills, and a sense
of empowerment” in learners (University of Florida School of Resources and Conservation, 2001, p. 39). A number of visitors remarked that the NLWWC’s interpretive program was central to making their experience a positive one. As one participant explained, “The fact that they have a little educational ‘splurb’ before… they’re not just like, ‘Okay, here’s the wolves check them out and be on your way’. You actually learn a lot. I appreciated that.”

Many visitors stated that the reinforcement of educational and conservation-related messages throughout the Centre, in addition to the physical presence of the wolves, was what imparted their visit with meaning. A number of studies have suggested that animal and wildlife interpretive programs can lead to knowledge gain and positive attitude changes, and in some cases long-term behavioural change (Miller, et al., 2003; Visscher, Snider, & Vander Stoep, 2008). A staff member spoke to the persuasive power of the NLWWC’s interpretive program:

The wolf walks are incredible but I think our talk is the most informative thing, and I think that's what changes peoples' perceptions a lot and it also helps them feel a lot better about this place. Because the fences look so menacing… that's their first perception and then when they come listen to the program it's completely changed… it's definitely getting that information to them that's the important part.

The inclusion of the interpretive program is integral to transforming animal viewing from a leisure activity into an educational experience. Instead of simply viewing the wolves, visitors are taught to respect the important role they play in the environment. In doing so,
the Centre encourages ecological awareness, understanding, and empathy for the wolves and their wild counterparts (Lemelin & Wiersma, 2007, p 39).

4.3.1 Knowledge gain. When asked what they had learned from their visit, the majority of participants recalled conservation-related information above general facts about wolf behaviour and physiology. While it is generally recognized that knowledge acquisition alone does not influence positive attitude change, it has been linked to positive attitudes by studies evaluating public opinions towards wolf reintroductions (Lohr, Warren, & Bath, 1996; Meadow, Reading, Phillips, Mehringer, & Miller, 2005). Visitor interviews revealed a number of themes that identified knowledge gain in this study as an outcome of the interpretive program as stated by participants: the importance of ecosystem balance, the example of the reintroduction of wolves to Yellowstone National Park in demonstrating their importance to an ecosystem as a keystone species, that wolves are not protected, and that there is no documented case of a healthy, non-habituated wolf attacking a human being.

4.3.1.1 A lesson in balance. The first theme to emerge as a result of knowledge gain described by participants was related to ecological balance. In response to human-induced biodiversity loss, habitat destruction and fragmentation, invasive species introductions, pollution, and disease, conservation biologists have introduced the idea of rewilding: a term that refers to the renewal of an area of land to its natural state (Foreman, 2004). Central to this practice is the restoration of an ecosystem’s trophic cascade, which describes the interactions between plants and animals in the food chain. In particular, it recognizes “the essential role of top-down regulation of ecosystems by large carnivores, and the need that large carnivores have for secure core habitats, largely roadless, and for
landscape permeability (habitat connectivity) between core areas” (Foreman, 2004, p. 4). In many cases, the reintroduction of missing species to a previously exhausted ecosystem is central to the successful rewilding of an area.

The interpretive program’s discussion about the wolf as a keystone species prompted a number of reflections from participants about its role in maintaining balance within an ecosystem. The concept of a keystone species was primarily introduced to visitors by describing the reintroduction of wolves to Yellowstone National Park. When the last wolves were extirpated from the park in 1926, the effects were observed almost immediately. Unhurried by a lack of wolf predation, ungulate over browsing of plant species such as aspen, cottonwood, and willow resulted in soil erosion and nutrient loss in addition to further declines in a number of plant, vertebrate, and invertebrate species. Visitors to the park noted that the landscape was becoming progressively more sparse and unhealthy. For seven decades, the effects of the wolf’s absence from Yellowstone were observed until it was decided to introduce 31 wolves captured in western Canada to the park in the winters of 1995-96 (Smith, Peterson, & Houston, 2003; Ripple & Beschta, 2011). What happened next is widely considered to be the greatest wildlife conservation milestone in U.S. history.

The far-reaching effects of wolves’ removal from and later reintroduction to Yellowstone National Park are well documented. With ungulates reduced in numbers and again fearful of browsing near waterways, vegetation began to regrow and once more prevent soil erosion. Another keystone species – the beaver – returned, resulting in an increase of waterfowl, amphibian, reptile, and fish populations. Muskrats and river otters also benefitted, and songbirds began to repopulate their native willow groves (Ripple &
Beschta, 2011). Coyotes, who had experienced a population increase in the absence of their leading competitors, found their numbers reduced. Small prey numbers increased and there was a resurgence of raptor species. Animals that regularly fed on wolf kills such as bears, ravens, magpies, and eagles were once again observed scavenging from wolf kill sites (Smith, Peterson, & Houston, 2003).

Some interpreters at the NLWWC demonstrated the keystone species concept by describing the visual of an archway with the keystone as the central stone that locks all of the other stones into place: if the keystone is removed, the entire archway collapses. This analogy and the example of Yellowstone National Park appeared to resonate for many visitors:

The biggest take away for me I think is the whole keystone species thing. I wasn’t aware of that. Like you know everything interacts with everything else in the ecosphere but to actually see how big an impact the presence or absence of wolves has on the entire ecosystem… that was a surprise.

Knowledge and awareness of environmental systems and processes plays an important role in conservation education (University of Florida School of Resources and Conservation, 2001). The concept of ecosystem balance expressed by the NLWWC’s interpreters provided a home for visitors to relate to the information learned in the program within a larger ecological context, and to express their concern about conservation-related issues:

It’s not just that they have an important part, it’s that they have such an important part... makes you realize it’s really important… that there is a lot of balance
involved, or lack of. There is a lack of balance right now. Naturally, there should be balance.

Visitors also contemplated their own role in the ecosystem or spoke of society’s failure to acknowledge the importance of balance in the natural world:

We have to learn where even ourselves are in a balance in the ecosystem. We think we’re on top, we think we’re in control of everything. It’s going to turn around on us one day… we know living in harmony and balance is the best thing right?

Other participants stated a connection between a lack of balance in the environment and the fate of future generations:

We’re also killing ourselves because when we make our environment sick, we are going to hurt ourselves. We’re going to pass garbage to our children and their children. Everybody likes to drive around here, it’s so beautiful but it’s not going to be beautiful when everything is sick and diseased.

Finally, some visitors considered the wolf’s larger ecological role in terms of their past experiences in their responses:

Balance… that was kind of neat… coming from a farm we had cows and stuff. We always had troubles with coyotes but we never had wolves around where I grew up… that was kind of interesting that the wolf is kind of to keep the balance of everything. I had never heard of that before.

The concept of ecosystem balance was interwoven throughout many participant interviews. This information appeared to inspire visitors to regard wolves as essential to the environment, which in turn caused them to consider the connection between environmental health and human wellbeing.
4.3.1.2 Lead by example: Yellowstone National Park. Another balance-related theme to emerge from visitor interviews was the interpretive program’s use of the example of the reintroduction of wolves to Yellowstone National Park. A number of participants questioned anti-wolf measures when the wolf’s significance to environmental health is clearly demonstrated by the Yellowstone example: “To know that they’re just blatantly, openly hunted was quite upsetting because I thought they were left. I thought we had the knowledge, that’s why we shared our wolves with Yellowstone… it was kind of a surprise.” A German tourist was equally puzzled:

There was no idea that the wolves were being killed to such an extent by the government. I know she said that but I still cannot believe. Because if it’s so clear… there are so many clear examples like Yellowstone that they help to maintain a good balance. The government can be a little dumb; not very intelligent. An American tourist was similarly surprised: “The evidence is so abundant, with Yellowstone and other accumulated evidence that make a very solid, logical, rational argument. Whereas the other is non-rational… sad to know it’s happening in Canada which I would not have guessed.” A Canadian man observed, “Same thing with Yellowstone right? I know that the states really had no wolves… really interesting to see how Canada treats its wolf populations…” while a German woman expressed a similar sentiment: “It’s weird even if they’ve experienced that in Yellowstone that they have the problems now in Canada.”

4.3.1.3 A species unprotected. The extent to which wolves are hunted, trapped, poisoned, and culled in Canada was cited by nearly all interviewees as information that they were previously unaware of. Visitors also reported being surprised to learn that there
are no permits, licenses, or tags required to kill a wolf. Canadian and foreign visitors alike explained that prior to the interpretive program they had believed that wolves were a protected species: “I honestly thought they were in a more protected state. I didn’t know there was a war being declared on them and then poisons being dropped out of helicopters and packs being singled out for execution.” Another visitor remarked, “I thought we were quite respectful of our wolves. I didn’t know there was so few numbers. I didn’t know they were still allowed to kill them.” This paradigm shift extended to participants who were previously unaware of the existence of wolf bounties: “Well I didn’t know there were bounties on wolves and that they could easily be killed. I thought they were protected, but apparently they’re not.”

Knowledge gained about the use of Compound 1080 in wolf eradication efforts seemed to elicit some of the strongest reactions from interviewees. A staff member explained, “I get a lot of people also commenting on or being really shocked when I talk to them about the Compound 1080\(^4\) being used in Canada. It's awful and it's terrible… so a lot of people are shocked that we have that in use in Canada.” In Canada, Alberta and Saskatchewan are the only provinces that still license the use of Compound 1080 (Health Canada, 2014). Albertans in particular were surprised to learn about the wolf eradication efforts in their province and to hear about poison drops occurring on the borders of Alberta’s national parks:

\(^4\) Naturally occurring in plants, Compound 1080 has been used worldwide since its discovery in the 1940s to control “pest” species, including wolves and coyotes. Carcasses laced with the poison are used as bait, and predators who ingest the meat exhibit frenzied behaviour, vomiting, diarrhea, seizures, heart arrhythmias, elevated body temperature, frothing at the mouth, and difficulty breathing. Death occurs 2-12 hours after ingestion and is typically caused by heart and lung failure (Wood, 2013). In addition, the poison is known for killing non-target animals including pets and protected, threatened, and endangered species (Animal Alliance of Canada, 2010).
I didn’t realize all of the killing that goes on about them. It’s not out there, they don’t really let us know… especially in Alberta. There’s probably a reason. Yeah, so I’m appalled. Especially in the parks and things like that where you think they’re there to protect them… the national parks. So that’s definitely got me rethinking a lot of that stuff.

For some, the information elicited a more emotional reaction: “Like Jasper… that makes me really angry because Jasper is so environmentally friendly and ‘take care of our land and animals’ and that’s happening right outside of it. That’s really frustrating.” Other participants were visibly upset by the knowledge or used descriptors such as appalling, terrible, infuriating, and disconcerting to explain their feelings. An Israeli visitor stated that he was “concerned and upset to hear that in Alberta there is throwing baits to the wolves with the poison that will kill the population or deplete the population of wild wolves. That’s not nice.”

A female First Nations participant drew parallels between B.C.’s wolf sterilization program and Canada’s residential school system to criticize the cruelty and ineffectiveness of sterilizing a wolf pack’s alpha male and female:

It breaks up the family. Breaks up the family system… and you’re employing park employees that should be protecting all the wildlife. To hunt down and torment and kill and destroy and decimate the environment… that is not what they went to school for. I was reading a novel about a woman that was ripped from her family and sent to residential school and I’m thinking they’re doing to wolves what they did to the native population: ripping their families apart and then they

---

5 B.C.’s wolf sterilization program has been widely criticized for being unethical and ineffective.
have no leadership and then you blame them for not making good choices. To me it just shows such poor education. Sterilizing two wolves won’t do anything but weaken the whole pack. It’s not going to deter the pack’s growth.

The parallels drawn between the participant’s own identity and the current treatment of wolves seems to fit the idea that wildlife viewing experiences can be grounded in the self-concept of the visitor. In addition, behavioural or conceptual connections between humans and animals have been found to evoke more empathic responses in zoo visitors, and result in feelings of shared identity and an increase in visitors’ concern for the animals’ well-being (Clayton, Fraser, & Saunders, 2009).

4.3.1.4 Sheep in wolf’s clothing. The wolf’s historical portrayal in European folklore as “a devilish beast, an incorrigible ravager lurking in the forest eager to devour lost travelers” has survived in many forms into the modern era (Jones, 2002, p. 6). Numerous interviewees indicated surprise when learning that there has been no recorded case of a healthy, non-habituated wolf attacking a human being. Participants referenced the media, movies, television, mythology, and fairytales as reasons for the propagation of the wolf’s image as a ‘man-eater’ – findings that are consistent with those of prior research on the origins of negative attitudes towards wolves (Kellert, 1985; Kellert, Black, Rush, & Bath, 1996). Some participants also used the term “the big bad wolf” to describe how they felt that the wolf is commonly portrayed. An older male participant remarked, ”So I think the idea was that wolves are always a threat and it’s interesting to know that there’s never been an incident with humans… the fairytales and Hollywood and stuff always makes you think it’s the ‘big bad wolf.’”
Other participants stated that negative media attention was to blame, and cited news stories that they had been exposed to about wolf attacks:

I like wolves and I know they’re important to the environment but I didn’t know that the rate of killing of humans was as low as it was. The last thing I saw about wolves were about two of them stalking a hiker and killing her or something. So they do have bad publicity out there. Of course I didn’t buy that, I thought it was a rogue thing. That was the last thing that I saw on TV so it was quite negative.

This is quite balancing.

The media often polarizes its portrayal of wolf-related stories by placing ranching, mining, and other extractive industries’ interests on one side of an issue, and environmentalists and scientists on the other (Scarce, 1998). Wolves have also been portrayed as protagonists in recent novels and commercial films although they are still widely demonized. Visitors provided examples of the latter by citing contemporary films such as Frozen and The Grey.

The polarized portrayal of wolves in popular culture and by the media contributes to polarized public perceptions of them. For many, their experience at the NLWWC seemed to serve as a counterbalance to negative or uncertain perceptions they had about wolves prior to their visit. As one participant remarked, “I guess I’m happy to learn… they’re not as people criminalize them in movies or villainize them…” while another explained, “I never knew they were that friendly. I thought they would attack people but it’s good to learn that they don’t.”

The negative perceptions people have about wolves are not always easily understood, but Moskowitz (2013) offered the following explanation: “The association of
violence, treachery, and murderous behaviour with wolves can be seen as subconscious human attempts to divert attention from our own propensity for these behaviours’’ (p. 245). This is perhaps not far off the mark as one German tourist explained:

> Do you know the Latins have an expression: ‘Homo homini lupus?’ That means a human being is a lupus, a wolf for another human being. There is no animal which will kill other animals from the same type like humans so. Everyday a war… I think forty wars in a year or so. That means man kills man… while as I know one wolf will be killed by another wolf, but not systematical.

“Homo homini lupus” translates literally as “man is a wolf to his fellow man.” The irony being that when analyzed, the expression unwittingly highlights the culpability of human beings in scapegoating the wolf for behaviours specific to a single species in the animal kingdom: Homo sapiens.

4.4 Dispelling the Myth: Seeing Wolves Firsthand

4.4.1 Human-wolf interactions. Multiple studies have determined that exposure, modeling, and contact with animals can increase positive attitudes towards them (Black and Rutberg, 2007; Clayton, Fraser, & Saunders, 2008). Some suggest that positive perceptions of animals are more likely to be influential when they can be viewed up close (Churchman & Marcoulides, 1991), while others noted that visitors valued live animals and human-animal interactions as education tools (Roper Starch, 1998). Visitors to the NLWWC often seemed visibly moved by human-wolf interactions such as watching staff members pet the wolves or feed them grass through the enclosures. Human-wolf interactions appeared to decrease participants’ fear and uncertainty towards wolves by seeming to challenge negative stereotypes about wolves supported by popular culture,
WHAT BIG TEETH YOU HAVE

myths, and fairytales (Kellert, 1985). One visitor observed the wolves’ behaviour upon seeing their reaction to sighting Casey, one of the Centre’s owners, working in the yard:

You never see them up close. Like in zoos… they’re farther off. Yeah so here that you can actually see them… we saw Casey, we assume? And then all of the sudden… the wolves perked up and were like, watching… really neat to see.

The visible bond between human and wolf seemed to make an impression. Observing or experiencing a connection with an animal has long been associated with an increase in favourable attitudes (Clayton, Fraser, & Saunders, 2009). One German tourist described this phenomenon: “It’s quite different than buffalos I’ve seen like that, you know? It’s more human; there was emotions.” A staff member also explained:

They'll see my interactions with the wolves at the fence and how they come up to the fence and they're looking for cuddles and things like that and they get so, so excited. So the people who see that are like, ‘Aw these guys are so much kinder than the wolves that we see in the movies.’ Which I think is great because that's exactly what we want them to see.

The awareness and empathy garnered by such a relationship was a common theme. It was also reflected in my observations of participant reactions to affection shown between the Centre’s wolves and their human counterparts. Some visitors made attempts to interact with the wolves themselves either verbally or through gestures, and a great deal of interest was generated when Casey or Shelley entered the enclosures.

4.4.2 The symbolic wolf. Occasionally to their detriment, wolves are associated with abstract concepts such as wilderness and predation. Lopez’s (2004) description of
the Inuit relationship with wolves demonstrates that this conceptual disparity is not limited to the confines of modernity:

For some, the animal is only an object to be quantified; it is limited, capable of being fully understood. For others, the animal is a likeness to be compared to other animals. In the end, it is unfathomable… a wolf that is both substance and shadow (p. 78).

The challenge of bridging the conceptual gap between abstract and concrete perceptions of wolves is a difficult one from the perspective of the wildlife educator. The presence of live wolves at the NLWWC appeared to establish a more tangible, relatable, and realistic image of the wolf for many participants. As a staff member described, “They get to see the wolves… get to see the true image of the wolves and nothing is being Hollywoodized, nothing's being perceived or influenced… they get to see the wolves for who they are.”

This theme is represented in the ample literature attempting to make sense of the intensity of people’s feelings about wolves. Moskowitz (2013) explained that “there is often a disconnection between the physical wolf we may encounter in the forest, *Canis lupus*, and the wolf in our imagination” (p. 236). This idea of a “symbolic wolf” presented itself in remarks from interviewees such as “I think I expected them to be bigger” or “I wouldn’t have recognized them as wolves. I would have thought that they were a malamute cross.” Various attempts at deconstructing the symbolic wolf were recounted by visitors who compared the behaviour of the wolves to that of their own dogs, or noted the wolf’s historical and phylogenetic relationship with humans.

---

6 Phylogenetic relatedness describes the evolutionary relationship between different organisms.
Other participants reported wondering what the wolves were thinking; a phenomenon described by Milstein (2008) as allowing animals to “speak for themselves” (p. 182). In some cases the wolves were anthropomorphized by visitors: an older wolf named Maya was compared by one participant to an aging human because of her grey fur. Another interviewee described how the wolves’ behaviour in the Centre challenged their reputation as feared predators of myth:

When I was listening to her lecture about how the big bad wolf is not the big bad wolf I saw the big yellow one sleeping with her forepaws up in the air like a little baby. I was like, ‘Wow.’

For visitors, direct contact with nature can facilitate a “sense of wonder and a sense of place, fostering the awareness and appreciation that motivate them to further questioning, better understanding, and appropriate concern and action” (University of Florida School of Resources and Conservation, 2001, p. 40). Shelley identified the surrounding environment as an important factor in environmental education:

You can stand in a building and look at an animal or stand in an aquarium and look at them which is fine, but to actually have to stand there and be wet while they are being wet… I think it’s more effective when they’re here and they can feel the earth beneath them and the trees around them and they see the animals. And even in school, like if I am just delivering the message and showing them pictures it is not received the same as when that wolf walks through the door and those kids see that animal firsthand.

Positive descriptors were also used to describe firsthand encounters with wolves at the Centre either by visitors who reported having held positive attitudes prior to their visit, or
by people who stated an increase in related positive attitudes as a result of their experience. Words such as beautiful, friendly, docile, playful, affectionate, amazing, and healthy were all used to describe the NLWWC’s wolves.

4.4.3 Creative expression. Some participants spoke about exploring their connectedness to wolves through artistic expression. Comments about the wolf’s aesthetics as a beautiful animal surfaced frequently. A children’s book author described how his visit had motivated him to write a book about wolves, and a mother spoke about how encountering wolves firsthand inspired her autistic daughter:

My daughter… she’s an autistic artist so I’m quite sure that she’s been spurred to draw a few more wolves and do a few more ceramic wolf pieces. I think for her having that firsthand experience and having the visual right there in front of her, she’ll be able to share which is very hard for someone with autism to do because they can’t pull that information... it gives her inspiration, you know.

Wolves from art, literature, television, and film were also identified as inspirational by interviewees. Visitors compared seeing wolves firsthand to artistic renditions of them in books and art galleries, and Never Cry Wolf, White Fang, Game of Thrones, and Dances with Wolves were all cited by participants as examples of popular influences that shaped their positive perceptions of wolves.

4.4.4 Photography. At its worst, wildlife tourism reduces the act of photography to “the acquisition of cultural capital… an anthropocentric search for new collectibles or ‘trophies’, which can become addictive” (Lemelin and Wiersma, 2007, p. 48). An unfortunate result of this mentality is that the act of attempting to capture the perfect photo eclipses all other aspects of the wildlife viewing experience. A handful of
participants explicitly stated that the goal of their visit was photography-related: “I’ve always wanted to get a picture of a wolf…. I’ve seen wolves in the wild but he hasn’t, so he wanted to get a picture and so the ladies looked it up… that’s how we ended up here.” Fortunately, while the majority of visitors to the Centre were observed taking photographs, none of the interviewees mentioned that it was the only outcome of their visit. A possible explanation for this is the inclusion of the interpretive program, which appeared to lend a balancing effect by “fostering an earnest respect for the nature and dignity of the species sought after” (Lemelin and Wiersma, 2007, p. 50). Upon the wolves’ return from their walks, visitors were also given the opportunity to photograph them outside of their enclosures (see Appendix 1, Photos 6 and 7). Several participants expressed a desire to participate in one of the Centre’s off-leash photography walks, but this activity proved to be beyond the scope of this study.

4.5 Conservation Outcomes

4.5.1 A reason for understanding. Visitors’ processing of the information offered in the interpretive program prompted the need for many to understand or make sense of what they had learned within a larger environmental and societal context. In a number of interviews, participants expressed a desire to discuss and identify the reasons for society’s vilification and persecution of wolves. Ignorance, fear, and scapegoating were often cited as were some more direct causes:

It’s the boogieman. You make this poor animal… they have no voice… the boogieman. You hunt it to extinction and then what? Then you destroy the ecosystem and what? Just because big money, big oil, big companies want it.
European and Russian visitors described anti-wolf sentiments in their countries of origin, and addressed topics such as negative historical attitudes, recent migrations of wolves across Europe, and human overpopulation.

Other reasons offered to explain anti-wolf sentiments were a lack of media attention as to why wolves are threatened, government actions, negative perceptions held by farmers and ranchers, greed in the natural resource extraction industries, a lack of wildlife conservation and protection, and poor publicity. Hollywood was also blamed as were fairytales and the wolf’s association with wilderness: “Well, I’ve always associated wolves with being out in the wild and hunting in packs… I asked Rob about camping you know… was he frightened of wolves? And I’m sure that’s just me projecting my fear.” Conceptual associations between wolves and wilderness have permeated human consciousness since time immemorial: “To celebrate wilderness was to celebrate the wolf; to want an end to wilderness and all it stood for was to want the wolf’s head” (Lopez, 1978, p. 140). In the words of one German participant, “I think always the story is that if you meet them in the wilderness, then you are lost.”

4.5.2 The importance of education. The value of education was a recurring theme that arose frequently without being prompted directly by interview questions. Many stated that educating youth was integral to changing popular opinion towards wolves, and commented on the importance of the NLWWC’s use of ambassador wolves in visits to schoolchildren: “I have to think that taking one of the wolves to school and teaching the kids that they’re beautiful animals… that’s got to be beneficial.” A female participant commented, “I really thought they were protected. So I think that’s one of the big things that nobody knows and that should be raised and brought to schools. And not
just here, everywhere… even in Vancouver and all the smaller schools.” Another visitor explained her own feelings of regret related to learning the information at a later age:

Elementary kids are really cute but they cannot sit there and ask hard questions. I think junior high is the place because they’re little political advocates at that level and when they get in your face and ask you a question you cannot say go and finish your veggies. You have a human being, nearly adult, looking at you and they think about it and they grow up to be better people and ask the hard questions and find out who this person is before they vote for them. We have little scientists at the junior high level and I think they should be tapped on the shoulder and given this information. I am ashamed at my age that I didn’t know, and I don’t want them to feel that they have been robbed and nobody told them.

Other participants voiced that education should happen at the public and university levels. The most common theme, however, was the importance of education and engagement for youth: “Educate them when they’re young like that, keep reinforcing it, then maybe when they become adults they’ll be responsible toward nature.” A staff member also remarked, “If you can reach those little minds, those are the ones that'll keep rolling after they leave here” (see Appendix 1, Photo 8).

**4.5.3 Behavioural change and advocacy.** As their final interview question, participants were asked if they would take their experience at the NLWWC forward into their lives. Considered in the context of the limitations to the theory of planned behaviour (TPB) in predicting pro-environmental behaviour, visitor responses were viewed in light of the assumption that “in the prediction of social behaviours, there are no absolutes”
WHAT BIG TEETH YOU HAVE

(Armitage and Connor, 2001, p. 473). In this respect, their responses were evaluated as behavioural intentions only, and not as reliable predictors of long-term behaviour.

The most common response by interviewees to this question was that they would share the knowledge they had learned with others: “I am now armed with knowledge… I don’t know how I’d do it, but if there’s petitions and stuff like that… word of mouth. I can offer those things.” A number of participants indicated an interest in learning more, and voiced an intention to pursue additional information upon their return home. A staff member identified the problem with this response from less engaged visitors:

We do have information on what they can do, but the problem seems to be that once you leave that kind of falls out of your head… so we're trying to find things that can work to get people active while they're here while it's still fresh in their minds, and so that they can maybe write letters or have something like a post card that they can just sign their name to it and then we can send it off for them. So that… it's still fresh in there.

A strategy of engaging visitors in immediate advocacy would help to further link the NLWWC’s educational initiatives and messaging strategies to its conservation goals. A staff member noted that for some visitors, engagement proves to be less of a challenge:

The people that stay in contact with us because they're sponsors… they're on our emailing list, things like that. Those are the people that you can count on. That every time there's an issue they'll be the first ones to email, and they'll be the first ones to write letters or phone those people so that they can actually do their part in the whole thing. We definitely do have that core group of supporters.
Some participants were surprised by their own reaction to the experience. One woman remarked, “I didn’t think I’d really be that kind of proactive that way but I think I’m going to be.” Others discussed how their visit would influence their political decisions: “I would not support bounties or if there’s a politician who is running who’s for bounties. I would support the person running against him… so I would advocate for, 100%.” In reference to B.C.’s wolf management plan, staff members noted that, “We’ve got a lot of people emailing the premiers to help stop it.”

Participants below the age of twelve sometimes appeared to be deeply affected by their experience. When describing her daughter one woman explained, “I think this will be a memorable thing. She said as she was walking after the talk, she said, ‘When I grow up, I want to look after the wolves.’” A staff member recalled some of the conservation actions of the Centre’s younger demographic:

There was this young girl, she actually did everything to set up a fundraiser… she had it done at the Robert Bateman gallery and Robert Bateman donated the space for her to do it there. She raised $1500.00… ten year old girl. She took that upon herself because she saw our website and saw what we talk about and the issues that we have. Now she wanted to save the wolves. There’s this other little boy… he sends us his birthday money so that we can help keep the Centre open. Kids are the ones out there trying to initiate the change and I have all the respect in the world for that.

Some visitors approached advocacy as a family endeavor: “I think one thing I’d like to do with her [daughter] is to sit down and have us, as a family, write a letter about the poisoning and the culling and so on.”
A number of participants stated that they would sign petitions, or as Casey described start petitions of their own: “One woman actually she started her own petition. From Ontario or Quebec but she was standing out in front of the grocery store getting people to sign stuff.” Other visitors said they would join protests or work to “create general awareness about the importance of [wolves] to the environment.” Finally, participants expressed support for the work done by the NLWWC and indicated a desire to communicate its existence to others: “I believe in places like this. It’s just that they’re so hidden… I’m going to be taking a few pamphlets and sharing them with other people because I think it’s a good thing.” A similar sentiment was also shared by staff: “I just like working in a place where you feel like the message that you're giving to people is actually affecting them and it's doing something.”

Chapter 5: Wolves on the Horizon: Safeguarding a Species’ Future

The NLWWC relies on a combination of strategies to attempt to affect positive attitude changes in visitors towards wolves. Through interviews and observations, the most prominent of these were discovered to include firsthand exposure to wolves, human-wolf interactions, emotional appeals, and knowledge gain. In addition, these factors were often found to be dependent on one another. For example, knowledge gain would result in an emotional reaction (learning about Compound 1080) or observing human-wolf interactions would lead to knowledge gain (the deterioration of the “big bad wolf” stereotype).

The most effective tool that the Centre uses to impart knowledge to visitors is its interpretive program. While firsthand exposure to wolves was impactful, according to respondents, it seemed to have the most impact in combination with the information
offered in the program. Program contents also prompted a number of emotional reactions from visitors, especially when related to the culling and poisoning of wolves. Emotional responses among respondents seemed linked to intended claims of wolf advocacy by participants. In addition, the program affords opportunities for visitors to watch staff members interact with the wolves. Interviews revealed that many participants considered the interpretive program to be central to the quality of their experience. Further study of the NLWCC’s school visits and photography walk would present a more comprehensive view of the Centre’s educational activities and use of ambassador wolves, as perceived by various audiences.

Conservation outcomes reported by participants included thinking about the larger picture in terms of the societal causes for wolf persecution and eradication, highlighting the importance of education, and discussing intentions to engage in pro-environmental behaviour and advocacy. Given the intentions results, the NLWCC could benefit from readily available information on advocacy action options for visitors. Visitors could then engage with such options before leaving the Centre. This might better facilitate follow-through and create tangible options for visitors who are less motivated or uncertain about which conservation actions to take. While this study was able to explore and describe visitors’ reported experiences, attitudes, and behavioural intentions, it would benefit from a follow up study to determine if visitors followed through with their intended behaviours, retained knowledge, and maintained positive attitudes towards wolves. Further study could also be devoted to examining how subjective norms and perceived behavioural control are linked to the performance of long-term behaviour.
In conclusion, the NLWWC presents a practicable education and conservation model for wolf and other wildlife educators to follow. While anti-wolf policies and negative perceptions of wolves are likely here to stay, wolf conservation and education Centres present a unique experiential opportunity to educate and connect the public with these remarkable animals. By granting a voice to an entity that has so long occupied the cultural, historical, and symbolic landscapes of the human experience we gain the opportunity to not only learn more about wolves, but about ourselves.
References


Bright, A. D. (2003). A within-subjects/multiple behavior alternative application of the
teachory of reasoned action: A case study of preferences for recreation facility

Bruskotter, J. T., Schmidt, R. H., & Teel, T. L. (2007). Are attitudes toward wolves
doi:10.1016/j.biocon.2007.06.016

Proceedings from AAZPA ’91: *American Association of Zoological Parks and
Aquariums Annual Conference*. San Diego, CA.

Clayton, S., Fraser, J., & Saunders, C. D. (2009). Zoo experiences: Conversations,
connections, and concern for animals. *Zoo Biology, 28*(5), 377-397.
doi:10.1002/zoo.20186

Curtin, S. (2009). Wildlife tourism: The intangible, psychological benefits of human-
doi:10.1080/13683500903042857


Enck, J. W., & Brown, T. L. (2002). New Yorkers’ attitudes toward restoring wolves to


Appendix 1: Photographs

Photo 1: The centre’s common area with an interpretive program underway in the distance.

Photo 2: One of the many educational displays.
Photo 3: The “Roadkill Burger Shack.”

Photo 4: The back wall of the gift shop.
Photo 5: A staff member delivers the interpretive talk to visitors.

Photo 6: Returning from a walk.
Photo 7: Visitors enjoying a rare opportunity to photograph the wolves outside of their enclosure.

Photo 8: A young girl watches the wolves.
Appendix 2: Interview Questions for NLWWC Visitors

- Where are you from?
- Why did you visit the Centre today?
- Did you learn anything from your experience here? If so, what did you learn?
- Did anything you learn specifically surprise you or change your opinion about wolves?
- If so, what was it and why do you feel that it had the impact on you that it did?
- How would you say that you felt about wolves prior to your visit?
- Do you think that your overall opinion about wolves has changed as a result of your visit? If so, in what ways and why?
- Has your visit to the Centre encouraged you to continue to learn more about wolves or to become actively involved in their conservation?
- If yes, how so?
Appendix 3: Interview Questions for NLWWC Employees

- How long have you worked for the Centre? What made you want to work here?
- What are some of the more common reasons that people give for visiting the Centre?
- In your opinion, how would you describe people’s feelings towards wolves when they first visit the Centre? Do you find that they’re more positive, negative, neutral, or a mix of all three, for example?
- What sort of things do you talk about in the interpretive program? What is the rationale behind the information that you choose to include?
- Have you found that people’s perceptions and attitudes towards wolves are easily changed?
- What role do you think visitors’ feelings towards wolves plays in their receptivity to the Centre’s message?
- Have you ever experienced a visitor with negative attitudes towards wolves who left the Centre with a completely changed point of view?
- Are there certain parts of the interpretive program that you find impact visitors more so than others?
- Would you say that emotional impact plays a role in the way that visitors receive your message?
- What is some of the feedback that you have gotten from visitors about how the interpretive program has changed their attitudes or perceptions towards wolves?
- Do you think that it makes more of an impact on visitors when they see the wolves? How about when you or other staff members interact with them?
• What are some of the preconceptions about wolves that visitors have shared with you prior to attending the interpretive program? Do you think these change after their visit and if so, in what ways?

• What are some of the things that visitors say they learned from the interpretive program? Do you think any of these elements resonate more with visitors than others? If so, which ones?

• Do visitors say they would like to learn more about wolves once they leave the Centre?

• Do visitors say that they would like to become actively involved in wolf conservation as a result of their visit?

• Do you find that the Centre has any reoccurring visitors?
Appendix 4: Interview Questions for Casey and Shelley Black

- What made you choose to devote your life to wolf conservation?
- How did you begin, and in what ways has the Centre evolved? Was there an initial planning and implementation process?
- What are the short-term, intermediate, and long-term goals and objectives of your organization?
- Do you feel like you have achieved past organizational goals and objectives?
- What strategies have you chosen to use as part of your interpretive program and other educational efforts and why? Has your approach changed from when you first started? If yes, how so?
- Who are your target audiences (eg. children, tourists, adults, ranchers, hunters, locals, policy makers, politicians, etc.)?
- Do you tailor your communication/education strategies to address a specific target audience? Do you address specific behaviours or people?
- Who do you find is typically more receptive to your conservation message? Are there groups that are noticeably more receptive/non-receptive than others (eg. children more receptive than adults, tourists more receptive than locals, etc.)?
- Have you noticed that age, gender, social status, cultural background, etc. play a factor in visitors’ receptivity to your message? If yes, how so?
- Have you discovered that targeting individual behaviours as opposed to group behaviours is more effective or vice versa? Does this factor into your educational strategy?
- What educational strategies do you find to be the most successful?
• Are you able to provide examples of moments that you would consider victories for your organization? How about failures?

• Have these victories or failures affected the direction of your organization or approach to conservation education? What lessons did you take from them that you would consider valuable?

• What would you say are the most valuable things that you have learned from teaching people about wolf conservation?

• Have you ever collaborated with other organizations? Was it useful, and if so, why or why not?

• Have you encountered organizational constraints that you have discovered to be problematic (eg. time, staff, money, etc.)? If so, how did you deal with them?

• Is campaigning part of your conservation/education strategy? How about social media? Marketing?

• Where would you say that most people acquire their negative perceptions of wolves from?

• As people are exposed to your program do you find that they actively seek out more information about wolf conservation? If so, how do you accommodate that?

• Is there a script that employees follow when presenting the interpretive program? If so, what sort of information is included and why?

• Have you found that your program has made an impact on the perceptions of the surrounding community towards wolves?

• Have you discovered that certain negative environmental behaviours are better suited to intervention than others?
• What behaviours/actions that promote wolf conservation do you actively encourage in your interpretive program or elsewhere?

• What education-related actions do you take to promote wolf conservation beyond the Centre? School visits would be one example, are there any others?

• Do you feel that the environment in which you present an educational session has any effect on how the information is received?

• Do you use different educational approaches to reach specific demographics?

• How do you feel the photography walk impacts participants?

• What role do you feel photography plays in the overall visitor experience?

• What sort of training do you provide for your staff?

• Since it’s less likely that someone with negative attitudes towards wolves will visit the Centre, do you enact any strategies to seek those people out?

• Would you be willing to share any stories of visitors that stand out for you who were affected by your interpretive program or by their experience at the Centre in general?

• Are there any factors outside of the interpretive program that you feel contribute to the Centre’s conservation message for visitors?

• Has your interpretive program ever had any unintended outcomes? If so what were they?

• What are your visions for the Centre’s future?