The Biological, Social, Cultural, Political and Economic Aspects of Wolf Reintroduction in Idaho & Yellowstone National Park

Environmental Studies Capstone
Spring 2013
Wolf Pack Behavior

Pack Relationships

Wolves are highly social animals and generally live in family groups called packs, which range from 3 to 15 individuals depending upon the availability of food (Stenglein et al 2011). Packs are usually a group of related individuals, often a breeding pair and two or three years’ worth of their offspring, but occasionally siblings of the breeders and unrelated wolves will work into pack dynamics (Schullery 1996). Unrelated wolves working themselves into packs are relatively uncommon, but could potentially be associated with plentiful food sources or the dispersal of similarly aged pack members (Stenglein et al 2011). Typically if a pack member will disperse it will occur before they reach the age of 3 years, or before a permanent location within the pack hierarchy has been established.

Packs typically have a very intricate hierarchical structure within them, beginning with the alpha male and female (Stenglein et al 2011). Alphas are the leaders of the pack – they decide when the pack will hunt and change locations, they eat first when a prey animal has been killed, and they are the only breeding pair. The alpha male and female are commonly the oldest pack members unless they have siblings within the pack. They are generally chosen based upon size or ability to dominate other members of the pack, but it has been noted that occasionally smaller, smarter pack members will be chosen for the leadership role. Observations of pack hierarchy indicate that it is quite easy to distinguish which members are the alphas simply by body language (Stenglein et al 2011, Schullery 1996). Alpha animals will always have the ears and tail erect and other
members will approach with a lower body posture in an acknowledgement of the
leadership role.

The other two positions that are commonly filled within the pack are beta and
omega. The beta member is the second in command, is the second to eat prey, and
generally assumes the role of alpha if the pack leaders are killed (Stenglein et al 2011).
Beta members are also often placed in the role of babysitter for the alpha’s youngest
pups. However, the entire pack is involved in raising new offspring (Stenglein et al
2011, Halfpenny 2003). The omega members, on the other hand, are the lowest ranked
members of the pack. They are always the last to eat and are often marginalized by other
pack members. They tend to be the wolves with the most subservient personalities. This
shows in the way they carry themselves: tail between the legs and often low-to-the-
ground postures (Stenglein et al 2011). Pack members are constantly competing with one
another in order to move up the ranks and exert dominance over the lower members.
Although this behavior suggests that wolves fight constantly, it is less of a violent affair
since they are dependent upon each other for survival. Wolves have been shown to have
very strong bonds with each other and will almost never seriously injure pack members.

Pack members communicate with each other in a number of differing
vocalizations, similar to that of a domestic dog (Steinglein 2011, Halfpenny 2003).
These vocalizations include yips, whimpering, growling, barking, and most notably
howling. Wolves howl for a number of reasons, such as to let other packs know their
location, to locate pack members if they have wandered off, and as a method of pack
bonding.
**Wolf Predation Behavior**

*Prey Selection*

Wolves are very strategic killers because their target is almost always much larger than they are. They use techniques such as locating, observing, stalking, testing and maneuvering (Halfpenny 2003). Wolves will stalk their prey and try to get as close as possible without being seen, and then begin to chase a herd to test them and find the weakest animal to target. When wolves prey on elk, it is critical for them to avoid serious injury, which could occur if they were kicked (Halfpenny 2003). In order to asphyxiate prey, they often attempt to bite their neck. There is additional evidence that wolves must alter their hunting strategies based on the sex of their prey (male elk have large antlers that can be used for defense, in addition to the dangerous hooves) (Halfpenny 2003).

In Yellowstone, wolves primarily prey on elk because the risk is lower than that of hunting bison. Since 1995, fewer than 45 bison have been killed by wolves, likely because wolves are reluctant to attack such a large, well-defended animal (Halfpenny 2003). Bison killing can be an important resource for the wolves, especially during the fall when elk migration changes their prey base (Halfpenny 2003). When killing a bison, wolves are very careful to select the weakest bison. Only the occasional intrepid pack will take on a healthy bison.

Other prey species are less dangerous but the return per effort is less. In Yellowstone, as of 2003, it had been recorded that wolves had killed 27 deer, 8 pronghorn antelope, 1 bighorn sheep, 1 mountain goat, and 1 beaver (Halfpenny 2003). Predation on moose is also common and by 2013 the moose population had dropped to relatively low levels. This was widely attributed to wolf reintroduction. However, there
are other factors to consider, such as the depletion of willows by the high number of elk, habitat loss during the 1988 fires and drought conditions slowing the regeneration of willows (Mech 2012, Halfpenny 2003).

Wolves are also known to occasionally prey on livestock, which has become a very heated topic among livestock owners following wolf reintroduction (Bangs et al. 1998). Both direct predation of livestock by wolves and the displacement by wolves of other predators, causing more conflicts with humans and livestock, has been negatively viewed by many Western residents and has driven agencies such as the Defenders of Wildlife to compensate ranchers for their losses (Bangs et al. 1998).

**Surplus Killing**

Surplus killing is one reason that wolves have often been viewed as vicious killers. Surplus killing refers to wolves killing more prey than they actually consume (Halfpenny 2003). Wolves are known to begin a chase for excitement but then they switch into predation mode and kill more animals than they eat. Another reason for surplus killing is something called the fog of battle (Halfpenny 2003). This refers to the inability for wolves in a pack to be able to see what the others are doing, either because the vegetation is too tall, the ground is uneven, or simply because of the chaos of the hunt. These circumstances do not allow for a wolf to know when a kill has taken place and when the “fog” clears there can be more prey deaths than needed (Halfpenny 2003). Another cause of surplus killing is during the training of the young wolves, because, at times, more than one young can be successful (Halfpenny 2003). Even when surplus killing occurs, however, not all carcasses go to waste because wolves are known to come back to a carcass to continue feeding on it at a later time (Halfpenny 2003). Also, during
the winter, elk become nutritionally stressed and wolves must kill more than one animal to get the quantity and quality of nutrients that they need to survive (Halfpenny 2003).

**Wolf Territories**

One factor that defines the spatial distribution of wolf packs across a landscape is territory size. Each wolf pack typically retains access to its own territory, excluding “foreign” wolves (Schullery 1996). Territory size for wolves depends largely on prey density and habitat quality; therefore, wolf territory size can vary dramatically depending on location (Halfpenny 2003). On average, wolf territories are about 300 square miles, but they range from 35 to about 800 square miles in the Yellowstone area (Halfpenny 2003). Territories are marked by wolf pack patrols using scent marking (Halfpenny 2003). Since wolves are highly territorial and will often kill members of foreign packs if they come into contact, establishing territories is an important way to avoid such encounters and reduce wolf-wolf mortality (Mech 1977, Schullery 1996). Howling can also help enforce territories: it is often viewed as an “avoidance mechanism” to prevent inter-wolf pack aggression (Halfpenny 2003).

Another feature of wolf territories that helps to minimize conflict is the creation of buffers. Wolf territories tend to form a “mosaic” pattern of occupied and unoccupied habitat (Mech 1977). In between the territories of different wolf packs, there are “buffer zones” which belong to neither pack (Halfpenny 2003, Mech 1977). Wolves from either pack sometimes make use of the buffer zone, but for the most part these buffer zones are uninhabited by wolves (Mech 1977). A study of Minnesota wolf territories found that buffer zones take the form of a strip (about 2 km) around each territory (Mech 1977).
Wolf Classification

The gray wolf, *Canis lupus*, is the species of wolf found in the northwestern United States. It was historically classified into 24 subspecies by Goldman (in 1944), who used various morphological features in his treatment (Paquet and Carbyn 2003). Recent findings, however, have suggested that many fewer subspecies are actually distinct (perhaps 3-5) (Paquet and Carbyn 2003). Gray wolves were originally distributed across almost all of North America above 20° latitude. Extensive eradication efforts in the U.S. resulted in local extirpation of wolves in every state but Alaska and northern Minnesota (Paquet and Carbyn 2003). Critics of wolf reintroduction argued, based on Goldman’s analysis, that the Canadian and Northern Rocky Mountain gray wolf populations are taxonomically distinct, and therefore, that transporting Canadian wolves into the U.S. would be introducing an exotic subspecies. However, based on recent scientific findings, the Canadian and Northern Rocky Mountain wolves have been found to not be taxonomically distinct (Paquet and Carbyn 2003).

One factor contributing to potential morphological differences between the historical Rocky Mountain wolves and the Canadian wolves is simply the difference in climate: mammal body size tends to increase in cooler climates to maximize metabolic efficiency and thermoregulatory potential (Gittleman 1985). Indeed, some dispersal of wolves from Canadian populations into the northern Rocky Mountains occurred before the formal wolf reintroduction process began in the 1990s (Bangs et al. 1988). In 1986, wolves migrated from Canada to successfully raise a litter of pups in Glacier National Park, Montana (Bangs et al. 1985).
Wolf Genetics and Minimum Viable Population

Genetics: The Impact of Eradication on Genetic Diversity

Genetic diversity of the reintroduced gray wolves in North America has been discovered to be low as a result of wolves’ extirpation in North America in the early 1900s. A recent genetic study found that 43% of original genetic diversity had been lost in the modern wolves as a result of the wolf eradication that took place in the United States (Leonard et al. 2005). In general, the extirpation of gray wolves in the U.S. resulted in a 50% loss of genetic diversity relative to the original wolf population (Leonard et al. 2005). Additionally, the reintroduced wolf in the western U.S. has recovered less than 1% of its original population size and exhibits severe genetic depletion (Leonard et al. 2005). A genetic sample from the historical (pre-eradication) wolf population had nine mtDNA haplotypes (distinct allele combinations), but only three of these haplotypes are present in modern North American wolves (Leonard et al. 2005), leading researchers to suggest that the mtDNA diversity has been cut in half by eradication. Leonard et al. (2005) call modern wolves “a depauperate subset of the historic population,” in terms of genetic diversity.

The loss of genetic diversity in wolves increases inbreeding, which negatively impacts their adaptability and viability. For example, the Isle Royale Wolves have been discovered to be experiencing genetic deterioration. One study shows that “58% (n = 36) of Isle Royale wolves exhibited some kind of congenital malformation in the lumbosacral region of the vertebral column and 33% exhibited a specific malformity, lumbosacral transitional vertebrae” (Räikkönen et al. 2009). Basically, limited genetic variation weakens immune systems, which become less capable of resisting diseases.
Inbreeding can also lead to skeletal deformities and the inability to withstand increased hunting pressure. If a top predator like a wolf becomes vulnerable to diseases or environmental changes, the population could go extinct unless the loss of genetic diversity is addressed.

**Minimum Viable Population for Reintroduced Wolves**

Minimum Viable Population (MVP) is the smallest number of individuals required to ensure a species’ persistence for a defined period of time (usually 100 years) (Hanski *et al.* 1996). Smaller populations are more vulnerable to extinction due to a number of factors, including inbreeding, natural disaster, or disease (Shaffer 1981). For wolves and many other species, MVP estimates focus on the entire wolf population in a region, rather than on the smaller sub-populations that are scattered in suitable habitat patches across the landscape (Harding and McNamara 2002). If these sub-populations are well connected by migration and gene flow, they bolster the overall size and resilience of the wolf population (Harding and McNamara 2002). Therefore, the viability of reintroduced wolves in the western United States is linked not just to population size, but also to connectivity among pack territories.

In 1987, the United States Fish and Wildlife Service (USFWS) set their initial recovery goal for reintroduced gray wolves at 300 individuals in the Northern Rocky Mountain (NRM) “core recovery area” surrounding Yellowstone National Park (Idaho, Montana and Wyoming) (Bergstrom *et al.* 2009, USFWS 1994). However, many scientists have suggested that a population in the low thousands would better support long-term survival for wolves because it would reduce the risk of inbreeding depression (USFWS 1994). Smaller populations might still be able to survive, but they face greater
extinction risks. Additionally, with such a small overall population size, high connectivity among sub-populations becomes crucial (USFWS 1994). Enough genetic exchange needs to occur to minimize the deleterious effects of inbreeding in wolf sub-populations (1994).

Scientists note that the reintroduced wolves will probably have a reasonable chance of survival, as long as connectivity is adequate and human-caused mortality is not excessive. Haight et al., using population modeling, concluded that “wolves can survive in disjunct populations provided that wolves can move between populations, human persecution is not excessive, and prey is abundant” (1998). Haight et al. also found that wolf population size stabilizes with a mortality rate of around 35% (1998). With higher mortality rates, genetic bottlenecks can occur, meaning that a high amount of the valuable genetic diversity in the wolf population will be lost along with the individuals that are killed (Bergstrom et al. 2009). This would also increase the risk of inbreeding. Another concern is that while short-term genetic losses will be low, over the long term “significant inbreeding depression” will occur in the reintroduced wolves without high levels of migration among sub-populations (VonHoldt et al. 2008).

Since there were few founding wolves reintroduced from Canada, the overall genetic diversity of the reintroduced wolf population is limited. Establishing high connectivity among the reintroduced wolf sub-populations is crucial in order to prevent the development of future genetic problems. Additionally, connectivity between the NRM wolves and Canadian populations could improve gene flow and bolster the genetic diversity of the reintroduced wolf populations, and this would require a higher wolf population than currently exists under the USFWS recovery goals (Bergstrom et al. 2009).
Finally, wolf populations need to be robust enough to survive not just under “normal” conditions, but also to withstand perturbations, diseases, and other fluctuations (Shaffer 1981). Currently there is not a defined answer as to the number of wolves that constitutes a viable population in the western U.S., but it does seem clear that a larger, more well-connected metapopulation will have a higher probability of survival in the long-term.

**Ecological Impacts of Wolf Reintroduction**

**Trophic Cascades**

The approximately 70 year absence of native wolves had many effects on Western ecosystems. Their reintroduction in turn also had impacts on the local ecosystem. Bringing wolves back to an ecosystem where they were previously abundant can be considered a conservation method that uses natural animal interactions to restore and maintain a healthy ecosystem. The reason that the interactions between wolves and other animals are able to maintain a healthy ecosystem can be explained by the concept of a trophic cascade.

Trophic cascades can be defined as the reciprocal changes that occur between different trophic levels, or levels in the food chain (Ripple and Beschta 2011). Wolves are considered top-level predators and their interactions with prey species from lower trophic levels (such as elk) can alter the local vegetation (Ripple and Beschta 2003). In the case of wolf reintroduction, the trophic cascade consists of three primary trophic level interactions: wolves, elk, and vegetation. These interactions have had an effect on the overall health of the riparian areas in the ecosystems that were absent of wolves for some time. Riparian areas make up a relatively small portion of terrestrial ecosystems, but
provide important ecosystem services that include buffering floods, preventing erosion, improving water quality, and providing crucial habitat for many species (Ripple and Beschta 2004). Therefore, if riparian areas are damaged through excessive browsing by ungulates, the ecosystem-level consequences can be severe (Ripple and Beschta 2004).

When the wolves were eliminated from the western United States, their absence had a very large impact on riparian areas (Ripple and Beschta 2004). Without the presence of these keystone predators, their prey, primarily elk, were able to increase their population size (Johnston 2007). With an increase in elk came an increase in browsing. A lot of this grazing occurred in riparian areas, which directly affected the health of these zones (Wolf and Cooper 2007). Ungulates, such as elk, browse woody plants such as cottonwoods, aspens, and willows. They tend to consume the young shoots of these plant species, resulting in a very slow recovery process for the browsed plants (Baker and Ducharme 2004). Eventually, woody plant populations in highly browsed areas went into decline, leaving the overall health of the area negatively impacted.

Due to the interconnectivity of the ecosystem, once the riparian areas were affected, so was the overall health of the streams and rivers near these areas (Ripple and Beschta 2011). This is due to a decrease in stream and riverbank stabilization, increase in river water temperature, loss of habitat for organisms in these areas, as well as decline in water flow control (Ripple and Beschta 2004).

Researchers have found that the reintroduction of wolves has led to levels of increased predation on elk. This predation has helped lower elk population to a more appropriate level and has also decreased the amount of browsing done by these herbivores (Creel and Christianson 2009). Once the wolves were reintroduced, the
negative effects on the entire ecosystem began to be reversed (Ripple and Beschta 2007, 2011). This is because the elk that had been operating in the absence of a primary predator for approximately seventy years were finally subjected to the top down control imposed by wolf reintroduction. Wolf presence affected the behavior and abundance of elk (Switalski 2003). The predation on the elk allowed for their populations to decrease, which in turn decreased the amount of grazing on woody plants (Ripple 2003; Ripple 2011). These woody plants were then given a chance to better develop and increase in abundance. Thus, the reintroduction of wolves allowed for incomplete ecosystems that were lacking a native top predator (wolves) to return to a healthy state with natural trophic interactions (Ripple and Beschta 2007, 2011).

**Trophic Cascades: Alternate Explanations**

Although there are many supporters of this trophic cascade argument, others have contended that perhaps it is not the reintroduction of wolves alone that has allowed for a decrease in elk populations (Mech 2012). It is still not fully understood how much wolf reintroduction has impacted elk herds (Mech 2012). Other conditions are being researched in order to better explain why there are fewer elk in the western United States. Some of these factors that could affect elk populations include: drought, harsh winters, predation by other top-level predators (such as cougars, grizzly bears, etc.), as well as human hunting (Mech 2012). It may be possible that a combination of many factors has allowed for a decrease in elk numbers, rather than the decrease being due solely to the reintroduction of wolves to local ecosystems (Beyer et al. 2007). There are also other reasons that could account for the increase in woody plant abundance: for instance, a prolonged growing season for these woody plants in response to climate change (Despain
Areas that are seeing a prolonged growing season (such as Yellowstone National Park) are also observing more woody plants in the area (Despain 2005).

*Lateral Cascades*

In addition to their top-down impacts on vertical trophic cascades, wolves can also have lateral impacts, which are focused on other species occupying the same trophic level. For instance, the reintroduction of wolves has the ability to impact not just prey populations and behavior, but also the populations and behavior of other top predators (Forstenzer 1997). Wolves are now also affecting the distribution and numbers of mountain lions. Interactions with wolves have driven mountain lions closer to human territory (Forstenzer 1997). Similarly, there is evidence that the large cats are now preying more often on pets and livestock, since they have been pushed into marginal habitat through competition with wolves (Forstenzer 1997).

*Scavengers*

The reintroduction of wolves has the potential to impact populations of scavengers, as well, including sensitive species such as grizzly bears and bald eagles (Mech 2012). When wolves kill more prey animals than they consume, their presence can allow for increased scavenger populations by providing a more stable year-round supply of carcasses (Mech 2012). On the other hand, some have argued that wolf predation does not usually benefit scavengers because wolves consume much of the meat that would have otherwise been available to the scavengers if the animal had died of “natural causes” (Mech 2012). In this case, competition with wolves for food resources may negatively influence other endangered animal species such as the bald eagle, peregrine falcon, whooping crane and the grizzly bear (U.S Department of Interior 1994).
Coyotes: Mesopredator Release

Following the extirpation of wolves, coyote populations increased in a phenomenon known as “mesopredator release” (Berger and Conner 2008). Wolves are a keystone, top-level predator and their elimination enabled mid-level (mesopredators) such as coyotes to increase. This is because wolf removal freed coyotes from competition with wolves for larger prey and also protected them from direct aggression by wolves (Praugh et al. 2009). This imbalance in the trophic web can have drastic impacts on the ecology of an ecosystem. Coyotes are predators of young pronghorn, a species that is currently in decline (Berger and Conner 2008). Berger and Conner (2008) found that the mortality rate of neonatal pronghorn (due largely to coyotes) was 34% lower in areas occupied by wolves. Therefore, wolf reintroduction may enable the pronghorn population to begin increasing again, which would also impact the plant species foraged on by pronghorn and other predators that prey on pronghorn (Berger and Conner 2008). The top-down control of coyote populations by wolves, which tends to benefit species that are preyed on by coyotes, can have profound implications for the biodiversity of a region (Berger and Conner 2008).

Wolf-Elk Relations

Coevolution

Wolf reintroduction has raised concerns about the impact of wolf predation on the population levels of their main prey: elk. However, it is important to remember that wolves and elk historically coevolved in North American ecosystems until the (relatively recent) wolf extirpation allowed elk to exist without wolves for less than a century. Historically, there are estimated to have been 380,000 gray wolves in North America,
much more than are present today (Leonard et al. 2005). While large canids in general have been present in North America for the last 1-2 million years, gray wolves specifically have been preying on ungulates in the western United States and Canada for 300,000 years (Paquet and Carbyn 2003).

**Wolf Impacts on Elk Population**

Elk are the main food source for wolves year-round (Beschta 2003). In the early 1900s, there were about 4000 elk that lived in the Yellowstone National Park, along with an active wolf population (Mao et al. 2005). However, eradication had removed wolves from Yellowstone by the 1930’s, leaving the elk population without the regulation of its main predator. The population of elk in Yellowstone National Park started to increase: at its peak there were about 100,000 elk in the wild (Mao et al. 2005). Because of the rapid increase in the elk population, over-browsing caused them to gradually deplete their food resources: grasses, trees and woody shrubs.

After wolf restoration, most studies indicated that the elk population would decrease by 5-30% (Fortin et al. 2005, Mao et al. 2005). The elk population on the north range declined 50% from 19,045 in 1994 to 9,545 in 2005, as wolf population in this area increased to a high of 106 in 2004 (Barber-Meyer et al. 2008). The reintroduction of the wolf population has indeed had an impact on the elk population. The presence of wolves helps control the elk population and keeps it within the carrying capacity of the local ecosystems. Adult elk killed by wolves are generally old, with a mean age of 14 years (Barber-Meyer et al. 2008). Additionally, wolves can act as agents of natural selection on elk, weeding out weaker genes and promoting a healthier population overall.
Since wolf can influence elk movement and population size, many hunters have expressed the concern that wolf reintroduction will result in a reduction in the ability of hunters to harvest elk. In an ongoing University of Montana-MT FWP study they “tagged 66 elk calves in spring 2011 in the southern Bitterroot. They found that, in the following six months, of the 49 that died or lost their tags, 22 were killed by cougars, 11 by black bears, and two by wolves” (Barber-Meyer et al. 2008). Based on this result, it seems likely that wolves are not typically the primary cause of death for elk calves. Other native predators, in addition to wolves, can impact elk populations.

**Behavioral Impacts: The Ecology of Fear**

In addition to their direct impact on the elk population, wolves can influence elk habitat selection in what is known as the “ecology of fear” (Ripple and Beschta 2004). The term “ecology of fear” refers to nonlethal effects that predators have on prey populations through changes in prey behavior (Ripple and Beschta 2004). Wolf restoration has influenced elk movements: Daniel Fortin and his team concluded that “the movement patterns of elk [are] shaped by the distribution of wolves” (Fortin et al. 2005). Following wolf reintroduction, elk have shifted toward selection of less open habitats (Mao et al. 2005). The spatial distribution of wolf territories across the landscape can impact prey distributions, as well (Mech 1977). Because wolves tend to avoid the buffer zones between territories, prey will often congregate in the buffer zones rather than in the center of a wolf pack’s territory, in order to reduce predation risk. Therefore, buffer zones can act as important reservoirs for prey animals (Mech 1977). Overall, wolf restoration has a quantifiable impact on elk population, elk habitat selection and elk movement.


Cultur – Alli Parrish, Katy Stewart, Stevie Alletag

The history of the wolf in Idaho has been intertwined with the history of the people who have inhabited the land. Thus, it is no surprise that the issue of wolf reintroduction is not merely an ecological issue, but a cultural one as well. The problems people have with the wolf and wolf reintroduction are highly colored by their perceptions of the wolf and how the differing opinions of various subcultures in Idaho clash. Where do these differing perceptions come from? We identify three distinct subcultures that have been highly influential in the wolf reintroduction debate and focus on the extremes within each group: the Native Americans, in particular the Nez Perce tribe; the environmentalists and conservationists; and the hunters and ranchers.

While the entire cultural relationship between Native Americans and wolves is too substantial to address within the scope of this paper, it is useful to focus on three main points in order to get a general sense of the importance of wolves within their culture. First, wolves serve a spiritual and religious function within traditional Native American culture. Second, wolves are seen as a metaphor for both humankind and for the plight of Native Americans within the last few centuries. Third, the Native American perspective on wolves is greatly affected by their perspectives on the environment and the role of humans within nature in general.

Across the nation, Native American societies that rely more on hunting tend to portray wolves more favorably within their mythologies when compared to similar societies that focus more on subsistence agriculture (Amy, “Meaning”). Within the traditional Nez Perce Native American mythology specifically, their mythology establishes the importance of animals, especially wolves, within their culture. In their
creation story, the Sky Chief created a wolf-man, and then created a woman from the wolf-man's tail (Leeming). Thus, members of the Nez Perce tribe tend to think of themselves as the equals, descendants and kin of wolves. Because of this deep cultural tie to wolves, it is only logical that the Nez Perce Native Americans would experience a sense of great loss with the extirpation of wolves, and seek active involvement in wolf reintroduction.

Even beyond the idea of wolves being the ancestors of humans, wolves often serve as metaphors for humans, especially within traditional mythologies. Wolves often portray both good and evil in Native American stories; they are considered loving and affectionate, but also vindictive and aggressive, depending on the situation (Amy, “Wolf”). By telling stories that highlight this dichotomy between good and evil, wolves serve as vehicles for teaching values and morals within Native American society, and thus act as a metaphor for humans. Furthermore, the timing of the extirpation of the wolf also coincided with conflicts between Native Americans and Euro-American settlers. This has caused Native Americans to identify with the plight of wolves, and to see wolves as a metaphor for their own people (Nijhuis). Jaime Pinkham states, “When this new way of life came across the frontier, (settlers) wanted to tame the so-called wilderness...The way of doing that was to get rid of all the obstacles and the threats to their way of life, and two of those obstacles happened to be wolves and Indian people” (Nijhuis). This further intensifies Native Americans' interests in wolf reintroduction, to help bring back wolf populations means to simultaneously boost the status and power of Native Americans.
Underlying these cultural interactions between Native Americans and wolves is the worldview with which Native Americans approach their relationship to the environment in general. Specifically, Native Americans tend to have a non-dualistic view of nature; they do not conceptualize themselves as inherently separate from their environment. The Nez Perce tribe, for example, demonstrates this idea with their creation story mentioned above. By understanding their heritage as inextricably linked with other animal species, they avoid conceptualizing their relationship to other animal species—and the environment in general—as one of superiority, dominance or exploitation. Furthermore, the Nez Perce tribe continually aims to conserve nature for several generations to come, which further informs their philosophy regarding nature (Cheater).

In contrast to the Native American non-dualistic view of nature, the Christian and Euro-American view is highly based on the divide between civilization and wilderness, the divide between humans and nature. In 1995, William Cronon, a prominent American environmental historian, published his infamous piece “The Trouble with Wilderness.” According to Cronon, the American concept of “wilderness” started out with a negative connotation either because of its usage to describe the landscape as a “savage” place or in biblical terms “to refer to places on the margins of civilization where it is all too easy to lose oneself in moral confusion and despair.” In the 19th century, the tone of the word “wilderness” started to shift as conservation of natural landscapes became an important issue for people such as Henry David Thoreau. By the early 20th century, Cronon says, “Satan’s home had become God’s Own Temple.” Nature, in essence, is a cultural creation
and the way Americans generally see wilderness separates themselves from the natural world, regardless of whether the value is demonic or God-like (Cronon 1995).

Even beyond Christian ideals, to many Euro-Americans the wolf was a symbol of wilderness and fear. In fairy tales such as “Little Red Riding Hood” and “The Wolf and the Seven Little Children,” wolves were fearsome and deceitful creatures that stalked and killed children, ultimately only to be defeated by the strength and cunning of humans. However, there were also people who had, as Cronon addressed, divine views of wilderness and thus the wolf was a positive symbol of the pristine and magnificent wilderness. To many conservationists, the wolf was not only that, but a creature that embodied many attributes humans find most appealing: valuing the pack (or family), courage, playfulness, and daring.

Cronon’s article addressed the “trouble” with such a view of nature, and many current environmentalists see this viewpoint troublesome as well. The extremists that idealize the wolf by making it out to seem human or even god-like, often times ignore some of the sides of wolves that many find disturbing like feeding and hunting. Even though this conceptualization of the wolf is for the sake of its protection, it is based on the old Euro-American view that civilization and nature are separate—that nature or wilderness is the place where people are not. This creates a view of nature that separates humans from the natural world rather than recognizing our place within it. Though this sometimes leads to the protection of the natural world, it also leads to exploitation. Regardless, the dialectical view of humans and nature does not allow for people to accept their own place within the natural environment, let alone a wolf’s.
Contrasting the views of the former cultural groups are the ranchers and hunters. One viewpoint that hunters have toward the wolf is that they view them as competitors for game. A reason for this is their fear of having to compete with the wolf, and thus, since hunting has been a way of life for them, they disagree with wolf reintroduction (Washburn). Another reason why hunters dislike wolves is that hunting has become more difficult for them; they state that they are unable to see elk herds that were once there. The last viewpoint that hunters take is that of a libertarian attitude. Since the wolf reintroduction has been funded and supported by the government, they totally disagree with this action; the northwest has been this way for centuries (Bartholdt). However, they discard their fear of competition by hunting the wolf (Bartholdt). By participating in wolf hunting seasons, they will be able to reduce the number of wolves, leaving more elk for the hunters. (Washburn)

The main reason behind ranchers’ disagreement with wolves is their fear of them; they fear that they will lose their livestock because of wolf attacks, which then translates into a decline in their income (Brancaccio). However, this fear should be somewhat limited because the Defenders of Wildlife are reimbursing ranchers for their loss. Another reason why ranchers fear wolves is because they are unable to let their livestock graze on public lands. This prevents their preferred gazing patterns (Brancaccio). Even though ranchers disagree with the wolves, they are here and should try to coexist with them by using different practices.

The different methods that ranchers can use involve limiting attractions for wolves on their ranges. One way this can be done is by using burn pits for dead livestock. Another way they can coexist with wolves is to use guard dogs. This prevents
the wolves from attacking their livestock. A third method that can be used is to establish different types of fences, such as fladry. The purpose of this temporary fence is to create a barrier between the wolves and the livestock. A forth technique they can use is to be more aware of their herds and surroundings. A way to do so is to check for different illnesses among their livestock that can potentially attract wolves (Stone).

Members from each of these cultures have had profound impacts on wolf reintroduction in the American northwest. The ways in which they perceive and think about wolves have informed their actions, and will always be a factor in any engagement with the issue of wolf reintroduction.
Culture Works Cited
The issue of wolf reintroduction has incited impassioned responses from people of varying backgrounds, social classes, economic statuses, and other ideologies. Given the fact that wolves mean different things to different people at different places on the social spectrum in the United States, it is important to examine the social issues themselves; often, the wolf debate is merely a forum where people express their disagreements with others on a specific issue that represents various interests. In this section, we focus on the image of the wolf in current popular culture and media reports, the misunderstandings about wolves in early wildlife management that have contributed to current social tensions regarding wolves, as well as current attitudes toward wolves internationally and in regions outside of the Western United States.

The Wolf in the Media

The language we use influences the way we perceive the world and our attitudes toward everything in it. In the article by Silvia Dingwall, “Ravenous Wolves and Cuddly Bears: Predators in Everyday Language,” she describes this process as the “theory of experience,” and how it is more about how people are able to remember things and distinguish concepts by the association of them from our language. This concept is used by the media to persuade their audience to a certain side.

This can be related to the issue of wolves as the media has been known to show the two extreme sides of the issue. The anti-wolf groups used harsh and aggressive language to create fear in their audience in hopes of people joining their side. They use the terms blood thirsty, ravenous beasts, or addicted to hunting to project a negative image of the wolf. “Do you care about the serious plight of our defenseless Native
Wildlife? How long are you willing to sit back and allow this senseless slaughter to continue?” This quote was found in the fact section of the “Save Elk” website. They spin the idea of wolves hunting their natural prey into an image of slaughter of the innocent. To someone who doesn’t know much about wolves, this quote can incite fear or hatred of the wolf.

It is not just the anti-wolf groups that manipulate words to help their side of the debate. “Pro-wolfers” use words to create a connection between the wolves and humans in two different ways. For one, they try to show how eliminating wolves caused degradation to the land; they argue that bringing them back would be correcting that mistake and would be seen as doing something good to help the earth and its inhabitants. Another way they try to create a connection is through personification of the wolves. On the website “Living with Wolves,” sponsored by wolf advocates Jim and Jamie Dutcher, a profile exists for each wolf in a particular pack. It is very similar to a sports roster; under each picture there is a description of the specific wolf. The characteristics that are used are often the ones that are valued in humans. Jim and Jamie Dutcher try to draw similarities between humans and wolves to show that they are not monsters and deserve to live amongst us.

Differences in attitudes engendered towards wolves also depend upon the location from which reports are published. In local news, reporters are prone to write about wolves in a more negative light. Often, representatives of local news sources interact with ranchers who are affected by wolves, and they have to live with the experience of wolves being at their back doors. In Carter Niemeyer’s book, Wolfer, he is accused by a reporter in a ranching community of “ruining a perfectly good story” about wolves and the way
they are understood by members of the community “by stating the facts” (178). This goes to prove that the reporter seems to be less concerned with the facts and more concerned with maintaining readership of the community by reflecting their opinions and sentiments about the wolf. Local reporters don’t necessarily care if the story is true as long as they gain more support for their side. The national media, however, provides a more positive perspective of wolves and their place in the landscape. With the growing trend of environmental awareness, people see the wolf issue as a chance to restore natural balance to a place where nature has been conquered. Along with the trend of being environmentally friendly, observers of the wolf issue at the national level want to seize this opportunity to clear the guilt of the government’s previous irresponsible management of wolves.

Social Tensions in the Wolf Debate

In the Western United States, often symbolized by and recognized for its open spaces and traditional, rural cultures, wolves have historically represented tense social realities. These tensions are manifested in discussion and implementation of wildlife management, often coming to a head on issues related to supposed wolf depredation upon livestock. The anxiety is indicative of other conflicts, such as those found in the divergent beliefs of environmentalists and adherents to the wise use movement. “Wise users” are a group of “conservatives committed to scaling back government environmental rules” (Minott) in relation to the use of private property. Further, “the Wise Use agenda,” agreed upon at the 1996 summit held by the group “calls for opening up public lands to more grazing, mining, logging, and oil exploration. Other proposals would turn over millions of acres of federal BLM land to the states and re-write the Endangered Species Act to
force the government to pay landowners for preserving rare plants and animals” (Minott).
The general aim of the wise use movement, then, is to generate income through the use of
natural resources. The history of Democrats in D.C. vetoing bills proposed by wise users
has resulted in general resistance to federal regulations among traditional westerners.

For environmentalists and agents of the federal government who seek to conserve
natural resources, the return of the wolf to the West in general and the Greater
Yellowstone Ecosystem in particular symbolizes the rehabilitation of an otherwise wholly
intact ecosystem (Wilson 455, McNamee 13). Robust biodiversity allows for resistance to
environmental catastrophe and suggests the possibility of numerous ecosystem services
(Heller and Zaveleta). The role of top predators, such as wolves, in a robust ecosystem is
crucial. For wise users and others with traditional, Old West values, on the other hand,
the presence of wolves represents a tangible threat to their livelihoods. Much of this fear
is based upon evidence documented (though never verified) between 1890 and 1930
about extensive depredation by wolves (Gipson et al. 811). These uncorroborated reports
have problematically influenced wildlife management policies and general attitudes
toward wolves in the West since.

Beginning in the late 1800s, reports regarding wolf behavior often focused
primarily on accounts of “famous wolves” that were supposed to have made numerous
attacks on livestock. In “Famous North American Wolves and the Credibility of Early
Wildlife Literature,” Philip Gipson, Warren Ballard, and Ronald Nowak review the
details regarding wolf behavior featured in these early reports; the authors examine the
remaining evidence of these wolves in the context of those stories. They determine the
ages of certain notorious wolves by examining pelts and skulls held in museums and
private collections. They then compare the age determined with the stories that reflect the
timespan of the wolves’ supposed activities; in most cases, the authors found that the
famous wolves in question “did not live long enough to have caused purported damage to
livestock and game animals” (Gipson et al. 808). The authors note that reports of surplus
kills of livestock represent improbable and misrepresentative information about wolves,
“greatly exceeding any other reports of surplus killing in the recent literature” (Gipson et
al. 813). Therefore, early wolf management and general understandings of wolves in the
West were misinformed. The fears and hostilities exhibited towards wolves in this early
literature continue to sustain a tradition of distorted perceptions. Further, the reports made
about wolf depredation in the literature reviewed by Gipson et al. were skewed by the
interests of those—ranchers and farmers—who wrote most of the reports that influenced
wildlife management (808).

Gipson et al. found that “the notoriety of 29 famous wolves” was connected to
documents published or endorsed by the U.S. Biological Survey (811). In 1915, the U.S.
Biological Survey received federal funds to manage predatory animals in livestock-
producing states. During the years leading up to and following the establishment of the
Biological Survey, these fears were figuring in many people’s understanding of the wolf,
so in order “to generate and maintain funding for their programs,” the Survey
embellished reports about marginal incidences of wolves engaging in surplus killing,
thereby inflating the public’s perception of the severity of threat posed by all wolves
(Mech and Boitani 294). These events illuminate the fact that issues surrounding wolves
and wildlife management in the West are largely colored by the perception members of
conflicting interest groups have regarding the relative influence of their rivals.
In his article, “The Wolf in Yellowstone: Science, Symbol or Politics? Deconstructing the Conflict between Environmentalism and Wise Use,” Matthew Wilson argues that the debate about wolves is actually a “conflict between the advocates of two social movements—environmentalism and wise use—struggling to impose their own preferences for land use in the American West” (453). Wilson goes on to suggest that the core values contested by both of these groups brings into question the structure of “(1) differential access to social power, (2) conflicting ideas about private property, and (3) divergent beliefs about humankind’s proper relationship with the natural environment” (454) in the Western social and cultural landscape. Wolves are considered by members of the wise use movement to be an impediment to engaging with public lands in the Greater Yellowstone Ecosystem for “the economic benefit of local people…Despite empirical evidence that these industries are actually declining in relative importance to the local economy, this belief structure remains part of a strong shared sense of rural identity in the region” (Wilson 455). The lifestyles and careers of rural people in the West, then, are already threatened by economic decline; the reintroduction of wolves to the region represents another imposition on the values and ideals of the iconic Old West.

Environmentalists—though their opinions appear to be motivated by informed science—are not exempt from misinformed ideas about wolves. Regardless of the sides that individuals take on the wolf debate, Alistair Bath’s survey of public knowledge about wolves and receptivity to the plan to reintroduce wolves into the GYE in “The Public and Wolf Reintroduction in Yellowstone National Park” suggests that all groups that weigh in on the wolf debate “could benefit from [learning] more [accurate] information about the wolf” (302). The tensions which animate the debate about the wolf’s place in the Western
landscape are, finally, manifestations of political and cultural conflicts. The wolf will remain an inflammatory symbol until members of each group that weighs in on the issue are given a forum in which to resolve their tensions and differences.

**The West and the Rest: How the Wolf is Perceived Abroad**

The state of Montana has dealt with wolves for slightly longer than the rest of the West. Initially, wolf reintroduction was planned for Montana, but it was discovered that an existing wolf population had already migrated to the state from Canada and a pack of about sixty wolves was established there (“Wolves of the World”). Ranchers and hunters in Montana have voiced many of the same concerns and complaints as those in Idaho; however, surveys have indicated that a majority of residents in Montana are in favor of the existence of wolves in their state and are even against a trapping or hunting season for wolves (Essen, “FWP ignored public comment”).

Some states, such as Oregon and Washington, did not reintroduce wolves and did not have any established wolf packs before the reintroduction of wolves in Idaho. Wolves have only very recently begun migrating to Washington and Oregon (“Frequently Asked Questions”). In the western two-thirds of Washington, wolves are considered endangered, and the wolf conservation effort is headed by the federal government. In the eastern third of Washington, federal law considers wolves to be recovered, and the state is in charge of managing wolves. However, according to Washington state law, wolves are endangered throughout the state (“Frequently Asked Questions”). Overall, 74% of Washingtonians surveyed said they were could accept wolves that migrated to the state from Idaho, and some wolf advocates in Washington and Oregon argue that de-listing wolves in Idaho
may prevent wolves from further establishing packs in neighboring states (Marcotty, “Groups sue”).

While the majority of people in Washington support the presence of wolves in the state, many people in more rural areas (where wolves currently reside) tend to be more against wolves (“Wolves of the World”). A recent bill was introduced by a senator in eastern Washington to have wolves moved from eastern Washington to other parts of the state so that everyone could enjoy them equally (the senator was extremely anti-wolf and the bill was a sarcastic statement. The senator called the rest of Washington “hypocritical” for rejecting his bill) (Warner, “Wolves and Public Opinion”). This indicates that, like in Idaho, some people in neighboring states feel that wolves were the idea of environmental romanticists from far away, rather than something, which was favored by the people who live in the affected areas.

Nationwide, attitudes about wolves vary. The state of Minnesota is especially interesting to consider because it is the only state in the continental US that never fully extirpated its wolves. Wolves were declared endangered in 1974 but have been considered biologically recovered (by the federal government’s standards) for over a decade. They were not actually delisted until 2012, however, and in that same year there was a hunting season for wolves in Minnesota (“Wolves of the World”). Overall, Minnesota does not seem to have the same animosity toward wolves as many other states. Surveys actually show that the majority of Minnesotans are opposed to a wolf hunting season (“Wolves of the World”). The Minnesota Department of Natural Resources describes the general attitude of Minnesotans toward wolves in the following way:

Minnesotans clearly value wolves. Public opinion surveys and attitudes demonstrated during development of the state's wolf
management plan show people view the animal as ecologically important, scientifically fascinating, aesthetically attractive, recreationally appealing and significant for future generations. Only a small minority fear and dislike wolves or believe Minnesota would be a more desirable place without this apex predator.

Many European and Asian countries, where wolves have historically roamed, share with the United States a history of negative attitudes toward wolves. In 300 B.C., the Irish bred wolfhounds specifically for the purpose of killing wolves, and by the second half of the nineteenth century, wolves were completely absent from Denmark, Ireland, and Great Britain (Dinger, “Throwing Canis”). The Japanese lifted a ban on the hunting of wolves in 1868, leading to the extinction of both species of wolf endemic to Japan (Dinger, “Throwing Canis”). In his book *The Return of the Wolf to Yellowstone*, Thomas McNamee describes public attitudes toward wolves in various regions in Italy; he notes that in some parts of the country, wolves are considered an occupational hazard. However, in areas where livestock herders have not learned to deal with wolves, attitudes are more negative.

There may be hope for wolf advocates in the younger generation: A WWF study of the attitudes of children toward carnivores in Europe gave the following insight: Teenagers in rural areas of Spain where wolves are present were among some of the biggest *supporters* of wolf conservation. Overall positive attitudes towards wolves were recorded for teenagers across the UK. Also, although UK teenagers believed the presence of wolves in their country was desirable and important, they were more afraid of walking in woods with wolves than teenagers in Spain who lived in areas inhabited by wolves. In this case, fear of wolves was actually lessened in areas inhabited by wolves. Higher levels of knowledge about wolves correlated with less fear of wolves in the regions studied.
Social Works Cited


Wolves and wolf reintroduction is a controversial topic within every realm of society, social, cultural, political, biological and economical. It is hard to separate emotions from facts, especially for this particular issue. As such, it is important to gain as much knowledge as possible in order to form a well-educated opinion of the issue. Here, we focus on the political and economic side of wolf reintroduction.

It was not until the late sixties, after the presence of wolves was almost wholly eliminated, that the plight of wolves in North America began to improve and concerns surfaced regarding the ecological and symbolical importance of wolves in the West (PBS Nature). As a result of rising concerns, the grey wolf (*Canis lupis*) was one of the first animals protected under the 1973 Endangered Species Act (ESA), but its status has fluctuated since the wolf reintroduction process began in 1994. Reintroduced species are managed differently than other endangered species under the 10j rule of the ESA.

Section 10(j) of the ESA classified reintroduced wolf populations as “nonessential, experimental populations,” meaning that wolves do not have to be protected exclusively as endangered and that states can play a role in wolf management in ways agreed upon with the Fish and Wildlife Service (FWS) (Idaho Fish and Game). The 10(j) rule acted as a sort of compromise in the widely contested reintroduction of wolves to the American West. In a way, reintroduction was favorable to natural recolonization for ranching interests because it allowed wolf kills under certain circumstances and wolves did not have the full protective status under the ESA.
In 2005, FWS made revisions to the 10(j) rule and turned over some management authority to the states of Montana and Idaho via a Memorandum of Agreement that contained provisions allowing Idaho and Montana to use the newly revised 10(j) rule. The 2005 revised 10(j) Rule has some significant differences from the initial 10(j) Rule, including:

- When dealing with wolf-livestock conflicts, wildlife managers no longer have to first exhaust reasonable non-lethal methods before resorting to killing wolves.
- Wolves can be killed for having “unacceptable impacts” on wild ungulates like deer and elk if it can be shown that wolves are the primary cause of a wild ungulate population not meeting management objectives.
- The wolf does not need to be actually “in the act” of attacking livestock in order for a private citizen to kill a wolf. Instead, the standard has been lowered so that a citizen can kill a wolf if it is “attacking (actually biting, wounding or grasping) or in the act of chasing, molesting or harassing that would indicate to a reasonable person that such biting, wounding, grasping, or killing is likely to occur at any moment,” which is a much more vague standard that can be subject to many different interpretations.
- The 2005 revised 10(j) Rule allows a citizen to kill a wolf on private land whether the attack or potential attack is on livestock or dogs, whereas previously it only applied to livestock.
- The rule was expanded to include not just private land, but public land as well so long as the livestock producer is grazing livestock there with a current federal land-use permit (Defenders of Wildlife).

The 10(j) rule was not the only obstacle in the political realm. A major challenge hindering the success of wolf reintroduction policies is that wolf reintroduction policy debates act as a “surrogate to larger and more controversial problems” (Nie, 314-316). Essentially, broad socioeconomic conflicts between different interest groups are embedded in the argument for (and against) wolf reintroduction. Different interest groups, of course, have different value structures that help form their attitudes regarding wolf reintroduction. As a result, there is “no clear set of possible [policy] solutions that involve stakeholders who have radically different frames for understanding the problem”
(Kiasatpour and Whitfield, 194). This issue is accentuated in the contested debate over federal or state management of wolves, and how it relates to ideals of the American West.

Eliminating wolves in the first half of the 20th century was justified in the reasoning that wolf populations were responsible for livestock death/depletion, effectively threatening the livelihoods of Western settlers. The U.S Federal Government supported wolf eradication because the wolf was perceived as a threat to the rancher and the values of the Old West—rural agricultural communities and maximization of land and resource use (Kiasatpour and Whitfield 2008, 195). The values of the Old West, and the rhetorical and symbolic positioning of the wolf as a threat to these values, continues to be an issue of contention surrounding the issue of wolf reintroduction in the American West.

For many whose ancestors eliminated the wolf threat, reintroduction of wolves is a symbol that their occupational heritage (opposed to wolves) is no longer respected by those disconnected from their livelihoods (Barton).

For the rancher, farmer, or hunter (and their political representative), wolf reintroduction is typically viewed as the imposition of threats to economic progress and the livelihood and liberty of the “Old Westerner” (farmer, rancher, American ruralite). Industrial agriculture, a growing service economy and “New Westerner” (environmentalist, urban elite, etc) values have diminished the federal concern for the Old Westerner (Clarke, 120; McBeth and Shanahan). Ideologically-based rhetoric “that escalates conflict and polarizes cultures in the West” creates a disconnect between the ranchers and the state and urbanites and the federal government (who are perceived to make policies that are disconnected from the interests of the ruralite) (McBeth and Shanahan, 324). When the Western state—many of which have a longstanding
libertarian interest—is in charge of creating management plans, they are typically more aligned with the interests of ranchers, hunters etc. that share some degree of hostility toward federalism. Ranchers believe that keeping the wolf out of the West is a symbolic stand for control; however, as wolves are now a part of the West, state management is desirable to symbolize state authority and avoid a host of federal regulations (Egan 1994).

Since state management plans were approved in Idaho and Montana (since 2004) and Wyoming (since 2012), wolves have been delisted multiple times (in 2008, 2009, and 2011 for Idaho and 2012 for Wyoming) from the endangered species list, giving the State(s) management control over wolf populations (Idaho Fish and Game; U.S Fish and Wildlife Service). However, state management often fails (in the perspective of some interest groups), and wolves have also been periodically relisted to ensure federal management in periods between delistings. By 2012, the entire Northern Rocky Mountain Distinct Population Segment was delisted and wolves were managed under State authority in MT, ID, WY, eastern one-third of Washington (WA) and Oregon (OR), and a small part of north central Utah (UT).

Federal and state governments were not the only ones who played a role in wolf reintroduction. The Native American government in Idaho actually took over management of the wolves in Central Idaho, because the state was very slack on getting the process going. However, there is also another sector that has been beneficial to the process of wolf reintroduction. Throughout the entire process of wolf reintroduction, there has been a huge involvement and contribution from various conservation groups. One of the reasons why it was successful was because people from all over the nation supported it. Interestingly enough, a study done by the U.S. Fish and Game on American
attitudes and wolves found that support for the cause was actually greater the farther
away people lived demographically. Additionally, by helping to create a grass roots
approach within the movement, involvement became extremely focused at the local
community level. These organizations became a channel to gather support for the issue
and to focus energy in bringing people together to fight for a common belief, in this case,
for or against wolf reintroduction. However, these contributions can be documented
along a spectrum ranging from extreme opposition to the issue to those that give
unlimited support for the continued success of wolf reintroduction. Environmental
grassroots nonprofit attitudes still currently involved in some way with wolf
reintroduction depend greatly on the social interest that they represent and the foundation
on which they depend on for success, i.e the public influence that makes up their
financial sector.

Grass roots organizations therefore, were the foundation of most of the public
support for wolf reintroduction, as described by Thomas McNamee in his book The
Return of the Wolf to Yellowstone. His involvement with the nonprofit organization the
Greater Yellowstone Coalition was directly responsible for much of guiding the
reintroduction of wolves back into Yellowstone (McNamee, 106). Other grass roots
conservation groups involved in helping gain support for wolf reintroduction include, the
Idaho Conservation League, the Defenders of Wildlife, Sierra Club, and the Wilderness
Society. Working together, these organizations formed a strong base for increasing public
awareness and support for wolf reintroduction. On the other side of the spectrum,
McNamee mentions the frustration of certain environmental groups’ inability to
cohesively get along, a social issue known as fractionalization (Dunlap& Murtig, 10).
Disagreements frequently arise between different parties within a new social idea and this causes groups to break off and form diverse coalitions for focusing on specific ideas and policy changes at a local level.

The effectiveness of a compensation program for ranchers and farmers who had their cattle killed by wolves was one of the ideas brought about by the Defenders of Wildlife organization. Finding middle ground with the livestock industry was what helped to foster better relations with the conservation group (Niemeyer 205). This approach was by far much more helpful for building stronger communication and trust between opposing interest groups than the wedge that was driven between the Idaho Anti-Wolf coalition and staunch pro wolf supporters.

Therefore, the most logical place to find a solution is through various interest groups working together to bring opinions to the table and find a compromising solution, such as the Defenders of Wildlife compensation program and allowing ranchers to have the ability to kill wolves on their property should they find them attacking their livestock (Stone presentation).

Main things determining the success of wolf reintroduction in the long run will be the ability of these organizations to communicate with one another and having access to accurate information. Being educated about wolves and their impacts on their surroundings comes from an ability to have a logical approach in finding the middle ground and being aware of all the different sides that will make the claim that their point of view is the best and only one. Being pragmatic and realistic about wolf reintroduction is what will determine the continued success of this conservation story.

Cost Benefit Analysis
Closely associated with politics, is the economic value that wolves may or may not have. When it comes to the reintroduction of wolves in the West, it is important to look at a variety of views to determine if there is a net benefit or cost associated with the issue. When dealing with a cost-benefit analysis, one should look at the connection wolves have to the surrounding environment and also to the people within that environment; this can include tourists, ranchers and locals in areas where wolves are reintroduced.

One of the most publicized problems of reintroduced wolves, is the effect they have on ranching communities and livestock populations. Because of the seriousness of this issue, a compensation plan has been put into place to help ranchers cope with the economic loss of livestock due to wolf predation. While looking at the monetary costs of livestock compensation for wolf kills, it is necessary to first understand the number of livestock actually being killed by wolves. Between 2005-2007, 666 sheep were killed due to wolf predation, and from 2006-2007, only 59 cattle deaths were attributed to wolves. (Northern Rockies Wolves). Keep in mind, the cost of compensation also takes into account the amount of money being paid to the individuals who are required to investigate suspected wolf kills. From 1995 to 2004, the estimated compensation for a wolf kill was $69 per wolf per year in areas that were classified as “wilderness-rich areas”, such as Central Idaho. These are areas where wolves were likely to have less interaction with livestock. In the more livestock rich areas, such as the Yellowstone area, the compensation was estimated to be about $160 per wolf per year (Haney, et al.). The organization Defenders of Wildlife established a $100,000 compensation program to reimburse ranchers for wolf depredation on livestock in the “Yellowstone Wolf
Recovery” area, which includes Wyoming, Idaho and Montana (Mader). In 2004 and 2005, payments to ranchers due to wolf predation on livestock averaged about $63,818 for the two years.

Another quantitative cost largely discussed is the amount of money originally put into the reintroduction of wolves; this includes travel expenses, worker cost, education costs and equipment costs. In Yellowstone, the estimated cost of reintroduction is between $200,000 and $1 million (Mader). According to Ed Bangs, the cost of achieving wolf recovery through natural dispersal from 1994 to 2025 is estimated at about $10-15 million. This cost includes all of the above-mentioned aspects, as well as the cost of transporting the wolves themselves (Bangs). This quantitative cost has two pertinent arguments associated with it. The first being that money spent on wolves is reducing government money that could potentially be spent on other state problems; essentially, “unnecessary” wolf recovery is using up government funds. The second argument presented is in support of government money being spent to recover the wolves; it basically says that the money spent on the recovery plan will in the long-term be returned to the government though visitors in wolf viewing areas (i.e. National Parks). Another point being made in favor of spending government money for this project is the idea that bringing the wolves back will recreate a completely intact, ultimately sustainable ecosystem (Duffeild, et al.).

On the contrary, wolf reintroduction has many monetary benefits. One of these is encompassed by the term Ecotourism, which is defined as tourism in an often threatened, natural environment area that supports conservation efforts and allows for observing wildlife (Google). When wolves started to be reintroduced into Yellowstone and
surrounding states, studies looked at the beneficial impacts on tourism to areas with high population of wolves. Since wolves were returned to Yellowstone National Park in 1995, visitors to the park have increased. In 2005, about 94,000 visitors from outside the three states surrounding the park (Montana, Wyoming and Idaho) came to the park specifically to see or hear wolves (Defenders of Wildlife). The estimated total economic impact of wolf recovery in the three states outside Yellowstone is about $58 million; while inside the three states it is about $35.5 million.

Another quantifiable benefit is the increase in residents to the areas where wolves were reintroduced. Although this is not largely talked about, it is a benefit nonetheless, one that actually helps to improve the local economy. There are about 22,000 people in the Greater Yellowstone area; this includes about 18 million acres of federal, state, Native American, and private lands. It was found that over the years leading up to wolf reintroduction the population of people in Idaho, Montana and Wyoming went from 1,750,000 in 1970 to approximately 2,250,000 in 1990 (US Fish and Wildlife Service). All the states are rich in outdoor recreation opportunities, and residents of the region value outdoor recreation highly. The value of residential housing has steadily increased over the past two decades from about 20% in the 1970’s to 30% in 1990’s, one can only predict that this increase has continued into the 2000’s and will continue in the future. More people are choosing to live in this area since wolves have been reintroduced because they feel that living in an area with wolves, and a fully intact ecosystem, leads to a higher “quality of life”. With the increase in residents, the local economy is boosted tremendously. (US Fish and Wildlife Service).
When looking at the costs and benefits of a specific issue, like wolf reintroduction, many rarely take into account the factors that are not easily quantified in monetary terms. Despite this overlook, these factors are extremely important, especially within the realm of wolf reintroduction. Often the costs and benefits that are hard to quantify are those that fit under two realms, social and ecological.

Nonquantifiable costs and benefits can be split into three different categories: direct-use, indirect-use or passive-use. Direct-use are those that refer to consumptive or nonconsumptive benefits, such as photography or hunting. On the contrary, indirect-use factors generally refer to ecological functions that lead to benefits, for example, ecosystem services. Finally, passive-use aspects refer to the attachment of value we place on landscapes, ecosystems or species independent of actual use (Weiss, 299).

Specifically, the benefits can also be characterized by their extrinsic or intrinsic value to wolves. Extrinsic refers to the value that wolves provide to humans, while intrinsic often refers to the value that wolves have in and of themselves (Weiss, 299-300).

**Nonquantifiable Benefits (Extrinsic)**

- The knowledge and comfort that people receive from knowing wolves roam free in their native habitat.
- Increased partnerships between stakeholder groups who may otherwise be adversaries.
- Wolves reduce disease in ungulate populations.
- Wolves provide food for 12+ scavenger species & buffer the effects of climate change.
- Wolves reduce predation on livestock by preying on other livestock predators such as coyotes and mountain lions.
- Wolf presence can reinitiate antipredator responses in ungulates.
- Release plants from herbivory pressure as ungulates decline in number of change foraging patterns.
- Wolves induce trophic cascades, which benefit riparian vegetation and stream quality.
- Reintroduction has increased education about the natural world and predators in general.
Nonquantifiable Benefits (Intrinsic)

- Increased ability for species to flourish genetically.
- Increase in hunting prowess of wolves & their feeding efficiency.
- Enhancement of pup survivorship due to more pack members to watch over pups.
- Transmission of “cultural knowledge” behaviors passed down from generations in pups.

Nonquantifiable Costs

- The angst people may feel from knowing wolves roam free in close proximity to their homes, families and domesticated animals.
- The sorrow over losing livestock animals due to predation.
- The threat reintroduced wolves may pose toward hunters and ranchers livelihoods through potential losses of game and livestock.
- The anxiety one may feel because of the potential of wolves to transmit disease to people or domestic animals.

Current Status in Idaho

According to the 2012 Final Idaho Wolf Progress Report, put together by a member of the Nez Perce Tribe and three employees of Idaho Department of Fish and Game, there were 683 wolves in Idaho as of December 2012. Of these 683 wolves, there were 117 packs within the state at the end of the year, and another 23 packs that traveled in and out of Idaho’s borders to either Montana, Wyoming or Washington. Of these 117 packs, a minimum of 66 produced litters, and 35 of these 66 qualified as breeding pairs. Ultimately a minimum of
187 pups were produced in 2012 (Holyan, Husseman and Struthers). The above map shows the location of all wolf packs in the Northern Rocky Mountain Region. The dark gray shaded areas show areas that are managed by the National Park Service, and the bold black outline shows the Northern Rocky Mountain Distinct Population Segment boundary.

The *Wolf Management Update – January 2013*, created by Idaho Department of Fish and Game lays out the regulations for wolf harvest for the 2012-2013 season. According to this document, the season was formatted similar to 2011-2012, which states that harvest limits are applied to only six of the thirteen wolf hunting zones in Idaho, but there is no statewide harvest limit. The hunting season for ’12-’13 opened on July 1, 2012 on private land in the Panhandle zone, and in all other zones on August 30, 2012. Two of the zones closed on January 31, 2013, three closed on March 31, 2013, and four zones are still open until June 30, 2013. The preceding dates are for hunting; trapping seasons are much more stringent, with most only being open from November 15, 2012 – March 31, 2013. Seven of the thirteen zones are never open for trapping. The trapping season was expanded to include two more units than the previous year’s season. Hunters were allowed to purchase up to five wolf hunting tags per calendar year (a total of 10 for the season) that could be used in seven of the thirteen zones, but only two hunting tags per calendar year (a total of 4 for the season) in the remaining six zones. As of April 25, 2013, 317 wolves had been harvested from both hunting and trapping, compared to the 379 harvested up to this same date the previous year (Idaho Department of Fish and Game). In order to maintain a minimum viable population, it is important for the Fish and
Wildlife Service to establish hunting and trapping quotas and strictly enforce them so no more wolves are taken than the quotas allow.
Political/Economic Works Cited


Google. Ecotourism Definition.


