Born to Hunt: A Battle of Apex Predators

The presence of grey wolves or Canis lupus in North America was greatly diminished in the 1920s due to excessive hunting and the belief that the species was no more than mere vermin (Beschta and Ripple 121). In recent years, with the help of the Endangered Species Act, the wolf population has rebounded and some organizations like the U.S Fish and Wildlife Service have elected to remove wolves from the protection of the endangered species category. While various restraints on wolf hunting are already in place, U.S. hunters are beginning to question their right to hunt the animal for sport as well as for practical motives. With question of legalized wolf hunting surfacing the economics of the issue begin to come into play, and the question of overpopulation begins to take form. On the other side of the debate are those who feel that the presence of apex predators, such as wolves, plays a vital role in the health of other animals, vegetation and plant life, and even water bodies such as rivers. Supporters of the aforementioned belief recognize the concept of trophic cascade, which states that when components of the upper portion of the food chain suffer, a trickledown effect can be witnessed, which harms the entire ecosystem. A depiction of trophic cascade can be found on the following page, this image was taken from the report of Robert L. Beschta, and William J. Ripple titled "Wolves, Trophic Cascades, and Rivers in the Olympic National Park, USA.".
Trophic Cascade Depicted

This image outlines how the presence of one species can affect the health of others (also known as tropic cascade). With the extricated wolves the population of elk will increase. A larger number of elk will decrease the amount of vegetative species, which will lead to stream erosion.

In a country in which the wild is rapidly dwindling—only 5% of the wilderness in America remains—it is time to consider if the current generation will get to experience nature and wildlife to the degree that their parents did (Wagner). The hunting of wolves in North America should continue to be restricted in order to preserve the structural integrity of ecosystems.

Wolves Effect on Other Animals

Most people are of the mindset that wolves cherry pick the healthiest of their prey and thus upset the balance of a herd of animals. According to various studies this trait is not present in wolves. In a study conducted by researchers Todd K. Fuller and Lloyd B. Keith the hunting habits of wolves located in northern Alberta, Canada was researched. The purpose of the study
was to analyze the dynamics of the wolf population and their influence on their prey; the moose of Alberta. Though the use of radio-collars the behaviors and actions of several wolf packs could be monitored and recorded. The findings from this study reveal that, contrary to popular belief “wolves killed disproportionately more young, old and probably debilitated moose (Alces alces), as well as more female calves”. By primarily culling animals that are located at the high and low portions of the age spectrum, wolves unsure that they have a food source, while simultaneously maintaining the healthily portion of their prey’s herd. Also by culling animals that are debilitated or possibly sick with a disease, wolves remove a potential threat to the herd. Even if wolves do not consume the disease ridden animal, the carcass is left for the buzzards. The actions of the buzzards, and ultimately the wolves, will prevent the spread of infectious diseases, and potentially save multiple animals. Further evidence of wolves hunting habits can be found in a book titled *The Wolf Almanac: a Celebration of Wolves and Their World* by Robert H. Busch. In this book Busch makes reference to several different studies that address wolves hunting habits. “In a 1992 study in Poland, 61 percent of the red deer and 94 percent of the wild boar killed by wolves were less than one year old. Studies in Yellowstone National Park have shown that the average age of cow elk taken by wolves there is fourteen years, with many older than twenty” (94). The latter study dictates that the average age of cow elk culled by wolves is at least fourteen years old. Given that the average life span of elk is only fifteen years old, wolves are primarily killing the animals that are already near the end of their lives. The hunting tendencies of wolves are more beneficial than the hunting habits of man, who targets large and healthy animals in the prime of their lives in an effort to rack up points for sport.

**Wolves Economic Impact (1)**

Speaking of hunting, the economic impact of new hunting laws must be taken into account as the industry and sport is so ingrained into American culture. Seeing as some hunters are able to
earn quite a large amount of money from the sales of deer hides and meat, not to even mention
the amount of money generated from the sales of hunting gear, hunting has become a part of the
economy found in America. With this knowledge in mind people may be against allowing a new
“apex predator” to flourish in their hunting grounds with laws that prohibit them (the hunters)
from trying to control this growing competitor (wolves). In a study about the reintroduction of
wolves in Scotland, a theoretical model is constructed in order to assess the economic impact of
wolves in the area, this model can be used to evaluate the how the presence of wolves in North
America would affect the sport of hunting. Much like in North America, the tactic of deer culling
is used in the area to limit the over population of the species. In Scotland there is a pressing need
to cull hinds or female deer, in an effort to accomplish the rules set in place by the Deer
Commission’s management objectives. The model presented in the study assumes that with the
growing presences of wolves, the deer population will be naturally controlled to the point where
a requirement to cull certain sections of the species is no longer necessary. “If we assume £200
profit per stag and £50 loss per hind, we estimate that in the presence of wolves an estate would
make £800yr−1 10km−2 from culling 40% of stags and not hinds, while without wolves it
would make £550yr−1 10km−2 from culling 40% of stags and 11% of hinds” (Nilsen., et al).
Although this model may potentially limit the number of total deer available for the hunters, the
game that could be considered worthy of the trophy rank—stags— would be rarer and thus more
valuable. With this model implemented in the States hunters would no longer have to settle for a
smaller less valuable deer, in an effort to cull hinds, because they would now be allowed to
pursue larger game. The system would also add more value to stags which would add a new
challenge to the sport of deer hunting.
**Wolves Economic Impact (2): Agriculture**

Another economic concern in relation to a growing wolf population is one of the agriculture industry which is so substantial in the United States. The impact wolves have on livestock plays a key role in the debate of legalized wolf hunting. In North America many farmers have been granted wolf hunting permits in order to protect their livestock. In order to assess the actual impact of wolves on livestock, a study was conducted from 1998 to 2001 in Arezzo, Tuscany. By evaluating the number of wolf attacks on livestock in the area and the number of attacks that actually resulted in the fatalities of sheep, goats and cattle, an accurate assessment of the wolves’ presence could be made. Contrary to popular belief the wolves demonstrated a minute impact on the livestock: “During the period 1998-2001, in the province of Arezzo, among the farms that were hit by predation, most (83%) were only slightly affected and reported an average of <1 attack per year. Only 6% of farms that were hit were considered chronically affected by predation, reporting 38% of total attacks and 37% of total losses” (Gazzola, et al 264). While the cultivating of sheep and goats is not that common in America, the cattle industry is quite expansive. It is unknown how these numbers will transfer to the States, but one could assume that the loss of cattle would be imminent.

**Wolves Effect on Vegetation and Plant Life (1)**

While the cattle industry is alive and kicking in North America, as previously mentioned the amount of wilderness left is dwindling. In an attempt to preserve and rebuild the remaining wilderness, a strong case can be made for wolves that positively impact the health of trees. Wolves positively impact trees because of their ability to limit the overgrazing of vegetation and plant life that is attributed to other animals such as elk and deer. In a 2003 study, researchers William J. Ripple and Robert L. Beschta studied the heights of the cottonwood and willow species of trees using photographic analysis to compare the heights before and after the
reintroduction of wolves to Yellowstone National Park in 1995. To accomplish this feat they focused on a set location near Soda Butte Creek. The site was perfect because it is located inside the park and prior to 1995, no wolves could be found in its proximity. Their findings revealed that in 1991 the cottonwoods near Soda Butte Creek were <1 meter tall and that the willows near the same creek in 1993 were also <1 meter tall. Shockingly in 2002 (after wolf reintroduction in 1995) the heights of both species improved with willows reaching between 1-2 meters and cottonwoods jumping to between 2-3 meters (304. Wolves’ distinctive trait to prohibit over grazing allows saplings and other forms of plant life to flourish, which ultimately leads to strong and healthy trees.

**Wolves Effect on Vegetation and Plant Life (2)**

Wolves do not only exhibit a positive effect on the health of trees, but also on vegetation. In the aforementioned case of Yellowstone National Park, wolves have only recently been reintroduced due to preservation methods implemented by the Endangered Species Act. However, wolves who originally fled to Minnesota during the 1920s began migrating to Wisconsin in the 1970s and have been growing there ever since. Also different from Yellowstone the primary prey for the wolves in this region is not elk, but white-tailed deer. To examine the impact wolves have on vegetation, a team of researchers investigated the amount of vegetation cover and the species richness of forbs and shrubs in wolf occupied territory or high wolf areas (8-10 years of species presence) and low wolf areas (0-3 years of species presence) inside the Chequamegon-Nicolet National Forest which is located in Wisconsin. Their findings revealed that in high wolf areas the cover of forbs was 70% higher than low wolf areas and (at the 10-m2 scale) the species richness was 43% higher. In a similar way the shrubs and seedlings located in high wolf areas when grouped together displayed a 84% higher rating of cover than low wolf areas. Solely shrubs located in high wolf areas managed to boast a 39% higher species
richness (Callan et al, 842). These numbers make a clear case for the presence of wolves in North America. If the region ever hopes to return it’s wilderness to a fraction of its former splendor, wolves must be properly incorporated and allowed to flourish.

**Wolves Effect on Water Bodies**

Interestingly enough, wolves also effect the health of the water bodies located inside their domain. Water bodies are so crucial because they not only sustain local animals, but also supply humans with access to fresh water which is a coveted and invaluable resource. In a study published in 2008 the impact of the extirpation of wolves in Olympic National Park USA is examined. Wolves have ceased to exist inside the park since the 1920’s due to extensive hunting in the early twentieth century. Since their disappearance, the park has experienced a dramatic impact on the rivers located inside the park. Due to the lack of wolves the elk population has surged, resulting in an increase in the foraging of riparian areas. The extensive over foraging has led to increased amounts of riverbank erosion and channel widening thus causing river braiding which is a prime example of trophic cascade. River braiding means larger amounts of sediment being deposited in the rivers and other complications that may negatively impact the environment when large loads of wood are present in the rivers. To analyze the amount of river braiding inside the park the researchers compared the channel morphology of the rivers from inside the park (the Hoh, Queets, and the East Fork Quinault rivers), with the rivers located outside the park not experiencing the effects of overgrazed vegetation. The rivers outside the park included the Clearwater and the lower Quinault. The results show that the channels located inside Olympic National Park experienced an average braiding of 37%, which far outweighed the 2% experienced by the rivers outside the park where wolves were present. Furthermore the average channel width/wetted ratio inside the park was 3.0 m/m, which was double the average found outside the park (Beschta and Ripple 123). A chart displaying the results from Beschta and
Ripples work in "Wolves, Trophic Cascades, and Rivers in the Olympic National Park, USA." can be seen below.

It is clear that the presence of wolves in North America plays a vital role not only in the food chain but also in the health of humans. The concept of trophic cascade is very real and until humans recognize that *fundamental principle of nature* and learn how to respect it, the wilderness found throughout America can only continue to diminish. While the economic impact of the hunting and agriculture industry must be taken into account and a foreseeable loss of profit may be emanate, the structural integrity of nature is more important than a loss of funds. The hunting of wolves in North America should continue to be restricted in order to preserve the structural integrity of the ecosystem. The health of other animals, vegetation and plant life, and even water bodies are at stake here. It is time to recognize that the actions of humans have serious implications for the planet as a whole, and that the continued persecution of one apex species may lead to the deterioration of another.
Works Cited


