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From Arrows to Bullets: Sustainable Hunting, Fishing, and Trapping

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From Arrows to Bullets:
Sustainable Hunting, Fishing, and Trapping



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Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of Bachelors Arts in
Environmental Policy

Fordham University
Professor Van Buren
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Abstract:

My thesis paper is on hunting, fishing, and trapping in the state of New York. In this thesis I will go over months of my own personal research and experience on the topic. I will provide information on wildlife populations and biodiversity, as I have recorded it over the last two years.

When discussing the topics of hunting, fishing, and trapping in New York State the focus of conversation is often on the moral wrongness and negative impacts on wildlife that these disciplines have. However, those who oppose hunting, fishing, and trapping not only overlook their environmental educational value, environmental research implications, and economical profitability, but they also suggest that the state of New York has little biodiversity and small wildlife population sizes, while the truth is actually quite the contrary. However, through my research, and those from other studies, I have observed that New York is neither deficient in its wildlife population sizes nor in biodiversity. That is not to say that these resources are expendable. They are resources that, just like any other, need to be properly regulated and protected. Sustainable hunting and fishing practices are something I feel I specialize in and have a great grasp for, which I will discuss.

My goal of this thesis is to further educate all on hunting, fishing, and trapping in the state of New York. Along with that, I will defend my own personal claim that there is no better advocate or participant in conservation and wildlife management than the outdoorsman. No one understands our wilderness better than the men and women who spend countless hours in it.

Introduction:

The great state of New York is abundant with wildlife, from the bullfrog that croaks at night, to the mighty whitetail deer that rules the forest; New York has a wonderful array of mammals, birds, reptiles, and fish. With such wildlife resources comes outdoor activities. There are such leisure's as hiking or bird watching, but neither of these gets criticized from environmental activists and the community at large. The outdoor activities I am most concerned about are hunting, fishing, and trapping.

Outdoorsmen get a bad reputation as being killers. Those who oppose the lifestyle say that outdoorsmen deplete populations, over fish, over hunt, and 'shoot first and ask questions later'. Environmental enthusiasts have deemed outdoorsmen to be the detriment to their cause and a burden on wildlife and fisheries. But what is lost in translation is that outdoorsmen and environmental activists are all on the same team. Hunting, fishing, and trapping are means by which biodiversity can be sustained and is a means for practical conservation. That is a key word that I cannot use enough: conservation.

There are a wide variety of game and fish to hunt or fish in the state of New York. Hunters have the ability to go after bear, whitetail deer, coyote, turkey, fox, squirrel, rabbits, various birds, and other mammals categorized as small game or furbearers. Hunting, fishing, and trapping has both pros and cons, I cannot deny that. But with that being said, there are ways by which both sides of the coin can be happy.

As I previously stated, outdoorsmen and environmental activists are on the same team. They are after the same goals, which are to sustain biodiversity, and keep this planet as wild as possible, and I truly believe that the state of New York does a great job of maintaining this

balance. So, why is it that people hunt, fish, and trap in the modern era? Though this question may have many answers, the reason that I hunt, fish, and trap and the reason why those in my inner circle of outdoorsmen do it is simple; we love nature, and nature is beautiful. We put forth whatever effort is necessary to be outdoors, because let's face it; with the concrete jungle ever pushing outwards, the outdoors is the closest thing to being with God and Heaven on earth. On top of that, from a personal standpoint, hunters hunt, fisherman fish, and trappers trap to put food on the table. With some aspect of sport, fun, and enjoyment, these outdoor activities are carried out to put food on the table. That is why we do it today just like our ancestors did it when man was that of a hunter-gatherer.

To expand on that, from an environmental and conservationist perspective, hunters bring balance to the ecosystem. It is not an act of playing God; hunters are nothing more than another predator like that of the wolf, coyote, or fox. When winter hits the north everything in the forest dies. The trees become bare and the grass becomes brown and lifeless; a northern ecosystem has trouble supporting bountiful herds of large and small mammals during the winter. That is why the natural time of year that harvest takes place is the fall. Whether it is hunting or farming, that surplus of life is harvested to maintain balance in the ecosystem. Why? It is because the ecosystem cannot support this surplus. This is where we get the phrase "the dead of winter". To close this point and to open many others in this thesis, there will be biodiversity across the nation come spring, summer, and fall because we hunt, fish, and trap (Ted Nugent ¹). With sustainable hunting, fishing, and trapping practices, we can sustain biodiversity and even improve it. Along with that comes the ultimate prize of education and awareness.

¹ Ted Nugent, "Why Hunt, Fish, and Trap", http://www.youtube.com/watch?v=aauk7Ub_JGQ

A huge problem in this country is that people think they know when they don't. Those who know the most about these various environmental problems are the ones who spend countless hours in the outdoors, i.e., hunters, fishermen, and trappers. They are the ultimate educators on the outdoors because they know their own ecosystems better than anyone. Hunting and fishing are wonderful activities to get kids active and intrigued about the environment and is a great tool in teaching them about the environment's importance and how to protect it through conservation. With technology ever increasing, it's a struggle to get kids off the couch and active, and aside from sports like football, basketball, and baseball, hunting and fishing are fun outdoor activities that also serve an educational purpose.

I am a firm believer in this idea of nature deficit disorder created by Richard Louv. As he states, "The future will belong to the nature-smart—those individuals, families, businesses, and political leaders who develop a deeper understanding of the transformative power of the natural world and who balance the virtual with the real. The more high-tech we become, the more nature we need (Richard Louv²)". I could not agree more: Hunting, fishing, and trapping are a means by which this can be taken care of and accomplished.

² Richard Louv, Last Child in the Woods, <http://richardlouv.com/books/last-child/>



History of Hunting, Fishing, and Trapping:

The history of humans hunting dates back millions of years. Hunting is in our ancestral roots and is a key aspect of our historical evolution. The first stone tools are said to have been used roughly two and a half million years ago. As expected, early humans were hunters and gatherers, mainly gatherers. Though even with that being said, all the tools and ideas of modern day hunting were in place all those centuries ago. So, if you were to look at the overall history of mans evolution, humans were hunters and gatherers for the vast majority of our time here on earth (UCDavis⁴). We cannot escape it, we cannot deny it. We hunted and continue to hunt because it is in our blood; it is who we are.

³ A picture of a doe October 5, 2013, the picture was taken at the Kensico Dam from my tree stand perched fifteen feet high in a tall oak tree.

⁴ Part II, Human Natural History,
<http://www.des.ucdavis.edu/faculty/Richerson/BooksOnline/He3-95.pdf>

As studies have shown, humans began in Africa. This is where we began and honed our primitive survival skills, but from there we ventured outward to colder lands which presented a whole new set of challenges (UCDavis⁵).

With that being said I'd like to specifically discuss one area of the earth where ancient hunting methods are still being used today, and is home to a culture that defines who hunters, fishermen, and trappers truly are. That biome is the Arctic. The Arctic tundra is a biome like no other because it is the coldest of all the biomes. It is unique, deadly, and beautiful all at the same time. The plants, animals, and humans that call this biome home are second to none in their ability to survive this rough and barren location of our planet. In discussing history and moving into the modern era of hunting fishing and trapping, discussing the Arctic will allow for us to delve into the harsh life lived by the Inuit people who inhabit this area. Specifically, I am thinking about how they hunted and the methods they used to survive. They truly embody this idea of holding nature, the birds, the animals, and biodiversity on a sacred level.

The people of the modern day arctic, though scarce, are made up of native tribes. The largest groups of Eurasian people who inhabit the arctic include the Lapps, Samoyeds, Yakury, and Chukchi (Irving 1972:23: Krupnick 1993 (Moran 126)⁶). Nunamiut people are very unique; the meaning of their name is people of the land. They depend on meat; without meat they would all have died out by now. Their survival is depending upon the migration of the caribou. A caribou is a member of the deer family, and most resemble that of a reindeer. They

⁵ Ucdavis.edu 2

⁶ Morán, Emilio F. *Human Adaptability: An Introduction to Ecological Anthropology*. Boulder, CO: Westview, 2008.

are large grass eating herbivores that populate the arctic and are separated into two categories, resident or those who are included in the year round population, and the migratory population, which are cyclical in their coming and going in relationship to the given season. Because they are a semi-nomadic group due to their surrounding environment, each season brings with it different challenges and tasks. In the spring they wait for the caribou to migrate in March and April. Next comes summer, and this time of year they have to deal with the mass migration of black flies in the area due to the ever expansive swarms that form because of the permafrost. In the fall, the caribou begin to migrate like that of the early spring, except this time they are seen moving in September and October. Finally winter, the harshest time of the year, is when the arctic can experience seventy-two days of absolute darkness. Tareumiut, which means people of the sea, rely on the ocean as a means of survival. Seals and whales are the cornerstone of their existence. Even to this day, the idea of hunting by means of survival is still a prevalent thought in parts of the world. It is these tribes that we as hunters in the states get our passion for hunting and the idea of hunting with a purpose and not for sport.

Because the tundra has such a low net productivity, those who inhabit the lands are forced to adjust to the conditions by mainly being a very tight-knit community. If I could give the Inuit communities a motto that they would most likely live by it would be that "sharing is caring." It is essential that they all look out for one another. Along with that, they undoubtedly have to exploit resources as much as they can. Is this no different than a hunter in the Adirondacks going out to harvest a deer to provide meat for his family's freezer to allow them to have less of a burden when winter hits? I think not. Being that those native to the Arctic live in one of the last truly wild untouched locations on the planet, the environment and the

surrounding ecosystems are their livelihood. The little money that they make comes from the land. The Inuit rely heavily on a very tight communal bond. Sharing and “spreading the wealth” plays a huge role in their means of survival. For example, when a hunting party brings back a seal or multiple seals there is a very distinctive protocol that the community goes by in order to divide the meat as best as they can. “The seal-meat sharing system functioned as follows: every hunter had a number of sharing partners for each part of seal meat and blubber....Ideally, there were twelve and they were chosen by the hunter’s mother either shortly after birth or during his childhood. Whenever the hunter killed a seal, his wife cut up the animal and gave the appropriate parts to each one of his partners’ wives (Balikci 1970: 135 (Moran 143)⁷)”.

The cornerstone of the Inuit’s existence is their ability to hunt. Few cultures rival the Inuit’s in their ability to find and kill game. Like that of the Native American tribes of the modern day United States, the Inuit did not have access to guns and steel for some time. Traditional methods had to be mastered and practiced in order to survive. Though the seal and the caribou are at the top of the Inuit’s target list, they also pursued other game when available. Whales, walrus, polar bears, and numerous fish species, such as arctic char, trout, and salmon, were all on the dinner menu for the Inuit; though the ability to catch anyone of these food sources was a challenge in itself.

Some of the tools used to take down such game animals were spears, fishing rods, bow and arrows and knives. Due to the lack of resources, most Inuit tools were made out of stone or

⁷ Morán, Emilio F. *Human Adaptability: An Introduction to Ecological Anthropology*. Boulder, CO: Westview, 2008.

parts of animals. Bone, ivory, antlers, teeth, and horns were all parts of the animal that made for excellent cutlery equipment along with spear points (First People of Canada⁸).

The Inuit possessed great ingenuity with what they had. As is said, waste was not an option, so every time an animal was killed, every ounce of it was put to use in some way. Much like our modern fishing bobbers, the Inuit would attach sealskin floats to harpoon heads, and much like that of a modern bow-fishing rig. The float kept the game close to the surface after the shot was taken. If the animal died then the Inuit had the ability to keep hunting and find the animal later. If the first shot didn't do it, then the float would allow the animal to stay in range and on the surface so that a second shot could be taken. The vast majority of harpoon heads were made out of ivory from walrus tusks or whalebone. This was a very sharp and strong material that was able to weather years of use and abuse. As we still do today, to catch fish the Inuit used common and modern fishing methods, but with traditional primitive handmade equipment. Fishing lines, nets, and three-pronged spears were all methods used to catch salmon, trout and arctic char (First People of Canada⁹). Fishing line was made out of sinew, which is broken down tendons of the legs of large animals like caribou. Hooks were crafted out of bone. And nets were woven out of hide and sinew. When it came to taking down fauna, large mammals were the ideal pray. Inuit hunting methods included the use of spears, bow and arrows, clubs and stone traps. All were extremely effective, and the Inuit were extremely skilled in the art of using these tools. For general everyday utilities, such as

⁸ "The Arctic People - Food / Hunting / Tools." *The Arctic People - Food / Hunting / Tools*
http://firstpeoplesofcanada.com/fp_groups/fp_inuit3.html

⁹ The First People of Canada 2

butchering meat, or just cutting in general, knives were used for everything, even the carving and cutting of snow and ice. A special knife that the Inuit used was called an 'ulu'. An 'ulu' was used for skinning animals, preparing the animal skins, and butchering (First People of Canada¹⁰). It was the Inuit's utility knife like that of a modern day Swiss Army knife. It was semi-circular in shape, with a handle. If I had to compare it to a blade of modern times, it most resembles that of a pizza dough cutter, but the 'ulu' was obviously much sharper and more durable.

A favorite weapon that was used by the Inuit for generations and is a very effective hunting tool was the bola. The bola is a throwing weapon made up of weighted objects and interconnected cord. Though there are various types of bolas used for hunting around the world, the Inuit made theirs out of bone and sinew. The objective when using a bola is to swing the weapon over one's head, much like that of a lasso. The bola would then be thrown at an animal's legs, tangling the animal up to the point where it could not run away. Once captured, the animal would be dispatched and the hunt would be a success. This weapon was most often seen when hunting caribou. Only those who were truly skilled hunters were able to throw a bola effectively, which is why it is not heard of being used very often. Though effective other hunting implements were used, to think about five Inuit hunters throwing spears at one caribou is definitely more effective than hoping a bola tangles its legs up long enough to kill it.

The Inuit had a number of different hunting techniques depending on what type of game animal they were after, but the one I wish talk about now is how they hunted on the ice.

¹⁰ First People of Canada 3

Hunting seals was a staple to Inuit survival. The seal, much like the caribou, provided many tools along with food for the Inuit people. Hunting various seal species on the ice not only took skill, but also luck. There are six different species of seal that inhabit the Arctic. The harp, hooded, ringed, bearded, spotted, and ribbon seals were all fair game to the Inuit people. Though the main three that were and are most abundant are the harp, ringed, and bearded seals. They were the main targets because of their natural tendencies. All three species live on the edge of the sea ice and bask on its edge during the daytime (Pagophilus.org 2001¹¹). This made them prime targets for the Inuit hunters.

The technique was simple: drill a hole, bait it, drop your line down it, and wait. Being the slowest and most passive form of hunting in the Inuit arsenal, a tribe member could wait for hours (maybe even days) without seeing anything. Another wintertime method was to stand over a hole and wait with a gaff or seal hook. Once the seal popped its head out, the hunter would gouge it and bring it onto land where he could kill it. This too is a timely process that could take hours, even days. In the spring came seal hunting season, and the Inuit would stack the ice behind make-shift blinds. The blinds were used as camouflage to get them into range to throw a spear at the seal.

The arctic as a biome is awesome in the truest sense of the word. It is riddled with death and danger around every turn, but with that brings great beauty, wonder, and awe. The Inuit people are like that of no other in their ability to adapt and survive. Whether the modern world is creeping in on them or not is irrelevant in my opinion because they are a people too rich and deep with traditional methods that will never truly die. They are the true masters of

¹¹ Wildlife: Seals, NSIDC, http://nsidc.org/cryosphere/seaice/environment/mammals_seals.html

adaptability and survival with a skill set that is emulated across North America by outdoorsmen everywhere. Though deadly and beautiful at the same time, there is no doubt that the Arctic demands respect and means of further exploration so that we can better learn how to maintain and sustain this vast and wonderful land that takes up a tenth of our planet's land mass. The only way to prevent further environmental change to this great biome, and the select few who have what it takes to survive in it, is to practice sustainable living practices and prevent further pollution of this planet. I bring up the Inuit for just that reason. Because they are forced by their surroundings to hunt, fish, and trap for survival, the environment and ecosystem means something to them. It is in this that I get my idea of sustainable hunting practices. Moving forward to our own turf, our own land, the Native Americans of Northern America provide us with the same principles, and love for nature that we see in the tundra.

Personal Research of NYC Watershed Properties and NY Predator Populations/Control:

When conducting my own personal research, my methods and approach was simple. I went hunting, fishing, and trapping which was of no great burden to me, considering I am an avid outdoorsman myself. I took an in-depth look at the biodiversity of the NYC Watershed reservoirs and their respective surrounding properties in Westchester, Putnam, and Dutchess Counties. Both the aquatic and terrestrial ecosystems are highly diverse and teeming with life. And, it astonishes me just how beautiful these pieces of property are. My basic thesis or thought going into this project was to see just how diverse these ecosystems are and to how I can aid in the efforts to keep these wildlife management areas thriving.

What are my credentials you ask? Why do I feel as though I can accomplish this better than anyone else? Well, my answer is simple. This is my backyard, this is where I grew up, and this is what my passion is in life. I am an outdoorsman and have been for my entire life. This isn't just a hobby for me; it's a true passion and a way of life that I feel very strongly about. I hunt, I fish, I herp. On a side note, just quickly for those of you who are unaware the act of herping or to herp is conducting amateur or professional expeditions where reptiles are studied. But anyway, back to the practicum report. The properties I have taken the closest look at are from south to north. First, I looked at the Kensico Dam Reservoir in Valhalla and White Plains, NY. This is a wonderful fishery and thriving woodland ecosystem, and I will discuss more about that later on in the paper. Next was the Cross River Reservoir, which spans from Cross River into Katonah, NY.



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¹² A 22' inch Lake Trout caught on a live night crawler at the Kensico Reservoir in Valhalla, NY. The fish was caught at approximately 6:45 a.m.

Again, it is another diverse ecosystem that, even with extreme outside human pressure, has sustained and thrived over the years. Finally, my most northern property and ecosystem was the West Branch reservoir and its woods in Carmel, NY. What is so interesting to me is that each one of these wild life management areas is only about a half hour apart. In fact, Kensico and Cross River are only a hop, skip, and a jump from each other, yet all three support different aquatic ecosystems. Though the species of animals may be the same in each ecosystem, I found out that the population of each animal species is slightly different in each location.

In terms of the hours I've worked, I have been hunting, fishing, observing, and studying the fish, animals, and reptile species in and around these three reservoirs my whole life. But over the past three years I've done even one better. I have been recording catches, kills, and data for each outdoor recreational activity. This is not only to just improve my overall skills as an outdoorsman, but also to see just how these ecosystems are doing in terms of their population over the years. I have logged about ninety hours of data, but within the last three years I have spent more than a hundred or more days on these three wild life management areas' properties. I'd say I have a more than plentiful feel as to how they all work. The key to field research is time, and what I have found over the years is that you cannot understand how something works if you don't spend time with it. For example, you can't just meet a person and marry them. You have to develop a relationship with that person, and to be frank, I could marry anyone of these three properties; that is how well I know them and their inner workings.



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Some hands on work that I have done over the years to improve life quality in these ecosystems is basically to pick up the garbage. I am proud to be a part of clean ups, not with any particular organization, but on my own and with my friends and family on these properties. You would be amazed to see just how something as simple as trash pickup up can have a positive effect on an ecosystem.

My goal with this research was to gather enough data to be able to put together a piece on why, even with how close these three sites are, they hold three very different ecosystems with minimal to some cross over, and what I came up with is very interesting. Along with that, I hope that my practicum work can show other outdoor enthusiasts and environmentalists alike that just by doing the little things you can have a more than positive effect on an ecosystem, aquatic or terrestrial.

¹³ A 10 inch Yellow Perch caught at the Cross River Reservoir in Cross River, NY. The fish was caught on a 1/8th oz. white jig head tipped with a wax worm. The fish was caught at approximately 2:30 p.m.

So let's break down each respective area and go through the data step by step of what I found, starting with Kensico. The Kensico Dam Reservoir is located in White Plains and Valhalla, NY. In terms of sheer acreage, the property covers 2,145 acres including that of the reservoir itself. In terms of some geographical data, as provided by the New York Department of Environmental Conservation, the reservoir sits at an elevation of three hundred and forty five feet above sea level and has a max depth of a hundred and forty four feet, with an average depth of forty four feet. Now, if anyone out there is a fisherman, they can already understand that this is a massive body of water that has the capability of holding mass quantities and varieties of fish. The native species of fish that can be found here are largemouth bass, smallmouth bass, chain pickerel, yellow perch, bullhead catfish, redbreast sunfish, and common bluegill. This alone would be a balanced fishery, but what NYDEC has done is start a well-documented stocking program, where upwards of 1,400 trout are released in the reservoir. The three major species of trout are found here and in large numbers: brown, rainbow, and lake trout all thrive in this environment and work extremely well with the other species I have mentioned. That was a basic overview of the fish life found in Kensico. Along with that come the mammals and reptiles found in its surrounding woodlands. Muskrat, white tail deer, raccoons, gray squirrels, coyote, turkey, chipmunks, and numerous birds of prey can all be found here on any given day. Kensico also has a diverse array of reptilian life with a health population of eastern common water snakes, ringneck snakes, garter snakes, red-eared turtles, and a variety of salamanders.

In terms of statistical data, I have found that the catch rate per fish species vary year to year due to natural causes such as storms, water level, fishing pressure, and the time of year, but what is certain in all my data is that the fish are growing and multiplying at a fair rate. A perfect

example of this is the trout population. Every year fish ranging from eight to nine inches are released into the reservoir, but because of the size and depth of this reservoir, fish are regularly caught in the eight pound range, which means these fish are living for years. Switching gears to mammals, the deer population is through the roof in the woods surrounding Kensico. This is because I have found that the predation population is low in the area. There just aren't as many coyotes in the area to prey on reproducing female deer. So, we have seen a drastic rise in deer numbers.



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This is where I found my first significant difference in the three properties, aside from the varying fish species; at Cross River we see a lower number of deer and a higher population of coyotes. This isn't to say the deer population is not thriving, it's just that we are seeing more mature bucks at Cross River and fewer does that have the ability to reproduce because of the increased predation. So, what did we learn? Basically that Kensico has a higher doe to buck

¹⁴ Sunrise at the Cross River Reservoir at 6:45 a.m. in mid March

ratio, where as Cross River has a higher buck to doe ratio, and this can all be traced back to the number of coyotes per acre in the area.

This leads me into Cross River's overall ecosystem. At Cross River, you can find basically the same fish species as Kensico, except there are no Lake Trout because the water depth is not deep enough for a sustainable population. But along with that we see a thriving population of white and black crappie in this body of water. I found that Cross River has a higher aquatic plant life mixed in with a rocky and silt-like bottom. This has a tendency to produce an abundant supply of fish species such as yellow perch, crappie, bluegill and sunfish, but it doesn't allow for a wide spread population of fish which sit higher on the food chain. Like Kensico, Cross River has a high population of bass and trout, but what we see at Cross River, is that these fish tend to hold in the deeper parts of the reservoir. This is because of the yellow perch, crappie, bluegill and sunfish that tend to basically eat all the food in the more shallow areas of the water column.

The next interesting bit of information that I collected takes me to my most northern property, that being the West Branch Reservoir in Carmel, NY. Now as I previously stated, all of the same mammal species can be found at all three locations but in different quantities. What I found that was very surprising also left me with one unanswered question. Why was the turkey population at such a high at West Branch and not the other two sites? West branch is in Putnam County which has fewer hunting regulations than the other two sites, and has a similar predator population level as Cross River. So, the buck to doe ratio factored in with the predator population is the same as Cross River, yet I found an astonishing increase in the population of turkey in the area. The best answer I could come up with is that the turkey population on the

other two sites either is less or more spread out. Turkeys are social birds that stick together for the most part. This, along with other environmental factors, led me to believe that the population sizes were not so different but that the socialization of birds was higher at West Branch than the other two sites. More birds were roosting in the same location at West Branch than at Cross River and Kensico. This led to another finding; I believe a coyote's diet at West Branch must consist of more turkey than deer because the grouping size of the birds was larger in this area. I can simply find this to be true because there is strength in numbers, so more birds would equal more eyes to watch out for predators. Birds in the other location do not have to worry about this as much because the predators are more concerned with deer than they are with turkeys.

So, that is just some insight as to the inner workings of three very similar yet different ecosystems. Though there were no true environmental problems I tackled, the two that stand out to me the most are pollution control and population control. Pollution in these areas is simple. For the most part it's just basic everyday garbage that people have left behind. So, a simple cleanup does wonders on these locations. There is no concern to me or the public about toxic waste and illegal dumping because, although it is a very real possibility, these waterways are heavily monitored by Environmental Law Enforcement because it is our drinking water. Where I feel I made the biggest difference is with population control. Having the ability to reduce deer population and/or predator population through selective harvest is a great way to help sustain and aid in the continuation of these thriving ecosystems. In the water, some population control is letting the big fish go and obviously keeping with regulations in the number of fish I keep for consumption. Allowing large fish to swim free and allowing fish to go that have not yet reached sexual maturity is another great way to preserve these excellent fisheries.

Finally, this is a topic that I know and love, and the continued success of these ecosystems is very important to me. Knowing that I am helping and making a difference is without a doubt extremely rewarding. Though I have put in countless hours to acquire this knowledge, it doesn't take much to develop a love for nature and the outdoors. My research has shown me that these ecosystems thrive because of outdoorsmen they are thriving because we hunt and fish. So, I encourage everyone to get out there and get active in the outdoors. The key to fixing this planet is by raising environmental awareness and IQ not only in adults, but in our nation's youth. My message to environmentalist is to keep it simple. I feel I have obtained more knowledge than many others out there just simply by being outside. If we want to save the planet we need to do it one step at a time. And the first step is getting everyone to care at a micro-level, and hunting and fishing is a great way to do that.

Moving forward to the idea of predators and predator control is not only a controversial topic to hunters and trappers, but to the environmental activist community as a whole. The control or management of predator populations in the United States has been an ongoing topic for hunter, farmers, and wildlife biologists for decades. Historically speaking, predator control has been centered on the idea of total eradication. Though in recent years this has shown to also be the wrong way to manage what some might call a problem. Although I will get into my thoughts later on, quickly speaking I am all for the management of predators in a humane manner. I recognize the fact that we as humans do have to ability to balance prey and predator herds for the benefit of the ecosystem as a whole.

Across the country, the accepted means of dealing with predators is no longer total annihilation, but the management of predator populations at levels above extinction and below

maximum biological carrying capacity. This basically means that wildlife agencies feel it is best to keep predator numbers relatively small, but also allowing them to reproduce at a below average rate. It is well known that these top predators are needed to keep ecological food webs in balance. With that being said, there is a fine line between controlling and decimating a species. I feel the way things are now, ethics aside, it is a fair means of controlling populations.

Among those who practice the art of wildlife management, predator control has always been a touchy topic, a hot topic so to speak. Traditionally speaking, hunters and farmers have always felt threatened by predators. This traditional and closed-minded mind set led to the coining of the phrase “the only good predator is a dead one.” This has proven to be wrong. I will say it now and say it numerous times: I am for predator management, but both extremes are very wrong. We cannot kill every walking wolf, coyote, cougar, and bobcat in North America just like we cannot let every wolf, coyote, cougar, and bobcat roam free while we harvest prey from them like deer. A balance has to be met.

Although I am a hunter, I feel as though some of my outdoorsmen counterparts have a skewed image of predators. They are threatened by them because they feel as though they are putting their deer season in danger. While this may be true, it is still a closed minded view that I do not agree with. Regardless of changes in policies and philosophical ethics toward predators, they have and always will be treated differently than any other species. State wildlife agencies have always felt that predator control is a different animal than any other policies made in regarding to wildlife management. We as hunters do recognize that we cannot let our emotions get the best of us, but in contrast the general public needs to open their eyes as well.



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Top predators play a key ecological role in all environments. The issue comes into play when state wildlife agencies have the desire to maximize herds for hunters, especially such species as elk, moose, caribou and deer. They all weigh heavily on the minds of policy makers in state wildlife agencies. I appreciate this immensely. Without these animals, we have no hunting season and meat would never fill our freezers for the winter. But we also need to give credit where credit is due. The ecological benefits of predators are what shape an ecosystem. Predators maintain those herds so that the large grazers such as deer do not become a major problem and become over populated as well. An example of this is the eastern end of Long Island. Deer herds

¹⁵ This is a 50lbs. male coyote taken down in Highland Mills, NY with a 12 gauge shotgun at 9 in the morning. It was October 24, 2012. I called the coyote over a large rock formation using a distressed rabbit called. The coyote was shot and killed at 30 yards.

are way too large for hunters to manage on their own. Deer in this area have no natural threat; the top carnivore of Long Island is the fox, and foxes seldom prey on deer. The only time this would be the case is if a fox got a crack at a fresh born spring fawn. The deer have had detrimental effects on farmland and in suburban areas. Why? It is because deer have no form of natural control. Predators provide health and balance in any ecosystem.

Through my own in the field research throughout the state of New York, I have come to my own relative conclusion as to how we in New York should manage predator populations. First let me explain the current situation. The top two predators in New York are the black bear and the coyote. Yes, we do have bobcats, and some will say they have crossed paths with a cougar before, but neither one plays a substantial role in deer herds like that of the black bear and coyote. And, to be even more specific, the black bear also does not have any major impact on deer populations, so this just leaves us with my personal favorite northeastern game to hunt: the coyote. Coyotes are cunning and beautiful in my opinion, and will test the skills of any hunter. Depending on where you are in the state, populations will vary. In the area where I hunt, Orange County and the greater region that is the Catskill Mountain range, coyotes are in abundance. Some would venture to say there are too many, but I feel as though their population is just about right in relation to deer population.



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Out West, the hot topic in wildlife management is the wolf. Although I do have an opinion on this, my opinion is irrelevant since I live and hunt in the Northeast so I can only speak on my situation, which is the coyote. Contrary to popular belief, the Eastern Coyote is actually not a carnivore, but more of an opportunistic omnivore. This means that they prefer to take the path of least resistance, eating basically the easiest meal. If that means hunt to kill, then so be it; the coyote is an excellent stalker. But more importantly, this means that coyotes more or less would rather scavenge than exert energy to catch prey. Coyote diets are diverse throughout the year. Their diets include white-tailed deer, rabbits, small mammals such as mice and voles, raccoons, groundhogs, birds, insects and even sometimes plants. The coyote goes through

¹⁶ This is my cousin Michael and I preparing for a night hunt in Orange County, NY. Predators in NY such as coyotes and fox do most of their foraging under the cover of darkness. We left the house at 10 p.m. and returned at 2 a.m.

seasonal cycles of what their palate is feeling. “Researchers from the SUNY College of Environmental Science and Forestry examined animal carcasses visited by radio-collared coyotes during the winter and summer of 2008-09. During the winter, only 3% of the animals had been killed by coyotes. The remainder was scavenged by coyotes after being killed by vehicles and other injuries. The adult deer that were killed by coyotes had severe preexisting injuries and were likely to die from other causes in the absence of coyote predation. In the summer, 55% of the carcasses visited by radio-collared coyotes were fawns, 24% were woodchucks, 18% were turkeys, and 4% were goose and cottontail. Not all radio-collared coyotes killed fawns, and kill rates of fawns varied widely among individual coyotes. Fawns up to about 20 days old were vulnerable to coyote predation, but predation dropped sharply after mid-June (NYSDEC¹⁷)”. This proves that coyotes are not actually looking to hunt and kill deer.

To be clear, in no way am I defending the coyote, and that I don’t believe they should be allowed to populate and run rampant. That is not what I am saying at all, what I am saying is that with a vast array of information, we can make the best possible choices to manage this predator in the great state of New York. Currently regulations state that from October 1st until March 15th coyotes may be harvested day or night with legal hunting implements. This does not mean that a coyote can be shot with a gun in areas that do not allow guns to be used. For example, in Westchester County, the use of a rifle is illegal. That means coyotes, deer, and bear may only be taken with a bow.

So what is the best way to manage coyote populations in New York? Well, my answer is simple. I love the current regulations that we have. My only change would be to extend the

¹⁷ Eastern Coyote, Department of Environmental, <http://www.dec.ny.gov/animals/9359.html>

hunting season to be year round for coyote. This would allow for spring time born pups to be managed. With that, a daily harvest limit of two should be implemented as well so that hunters could not get out of hand. Through my own research, I have found that in late spring and early summer coyote populations are at an all time high, so by extending the hunting season to a year round state, it will encourage hunters to get out into the field in times when they would normally not be. This also aids into my argument for raising environmental literacy. With environmental literacy raise we can have a broader more accepted discussion on environmental issues such as predator control, where everyone is well informed of all the facts. Then and only then can the best policies can be made.



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¹⁸ This here is another coyote taken with a shotgun in mid November or 2013. The coyote was a female and weighed 40 lbs, which is large for females. Again the coyote was called in using a rabbit distress call.

“We reached the old wolf in time to watch a fierce green fire dying in her eyes. I realized then, and have known ever since, that there was something new to me in those eyes - something known only to her and to the mountain. I was young then, and full of trigger-itch; I thought that because fewer wolves meant more deer, that no wolves would mean hunters' paradise. But after seeing the green fire die, I sensed that neither the wolf nor the mountain agreed with such a view (Aldo Leopold¹⁹)”, this epidermises that of practical predator control. It is all about balance. Too many predators will yes result in a great decline of game animals such as deer, but with no predators at all there then because an overpopulation of grazers. A balance has to be met in order for an ecosystem to run as efficient as it possibly can. Along with that, Leopold brings up a very deep statement that I feel truly epidermises how we should understand conservation as humans. Humans intervene in various wild ecosystems all the time. Save the whale, save the buffalo, eradicate the wolf, whatever it may be the question has to be raised, do us as humans know enough to intervene. This thought is brought up by Leopold's idea of, “only the mountains know”. Only the mountains can tell the true story of the wild. They have been around the longest and have heard all of what the environment has to say. The moral of the story is before humans go in to try and change things for better or for worse, extensive knowledge must be obtained to the highest degree before one can go in and change things in an instant. Though we may not know everything, humans should find out as much as they can. That is the essence of Aldo Leopold's main point in his article, “Think Like a Mountain”. “We all strive for safety, prosperity, comfort, long life, and dullness. The deer strives with his supple legs, the cowman with trap and poison, the statesman with pen, the most of us with machines, votes, and dollars,

¹⁹ Aldo Leopold, Thinking Like a Mountain, A Sand County Almanac 1949

but it all comes to the same thing: peace in our time (Aldo Leopold²⁰). This idea of the circle of life and how we are all connected is how conservation is done in an ethical and respectable manor.

Conservation and Education:

When it comes to the preservation of land and the education of this worlds vast wilderness no one is in the same class as the forefather of modern day conservation and game management than the great Aldo Leopold and his work “A Sand County Almanac”. Leopold’s work is without a doubt the cornerstone of how we think of conservation today. The world of the hunter, fisherman, trapper, and outdoorsman should be shaped around his views of ethical land management and sustainable hunting practices.

As I have said Aldo Leopold is revered as the father and founder of modern day ethical wildlife management in the United States along with how forestry is ran today. He was not only a conservationist, forester, philosopher, educator, and writer, but a outdoorsman as well.

Growing up he loved to hunt and fish (Aldo Leopold Foundation²¹)

In 1887, Aldo Leopold was born in Burlington, Iowa where he was raised. Here in his youth, Aldo Leopold developed an interest the wild landscape that surrounded him, and the animals that lived in it. During his time as a child he would spend hours on end observing, sketching, and writing about his surroundings. When it came time to get an education, naturally his choice was to enroll in the Yale Forestry School where he graduated in 1909. Not long after

²⁰ Leopold, Thinking Like a Mountain 2

²¹ The Aldo Leopold Foundation, http://www.aldoleopold.org/AldoLeopold/leopold_bio.shtml

he became a member of the U.S. Forest Service, which had just been established. From there he was given his first posted and stationed in Arizona and New Mexico. It was there out West where he truly bloomed as the father of modern day conservation (Aldo Leopold Foundation²²).

Leopold's most notable work, "A Sand County Almanac", is "the bible" of practical and ethic land and game management. It is undoubtedly his most notable work and one that will help those in conservation for years to come. I know that my own research was done in a very Leopold type manor in how I went about my findings. "A Sand County Almanac" is broken down into three parts all focusing on different things but ultimately promoting the same point. We are but just another creature in this great circle of life. We must respect the land and all who inhabit it. If we are to be a productive working member of the greater ecosystem we must learn to appreciate and respect the world around us.

Part one of "A Sand County Almanac", is a compilation of observations really. It is a year's worth of writing broken down month by month. Each month Leopold would tell the tale of something just a little different, for example in March he observed the great migrant return of geese and how they foraged for food and became situated again after being south for so many months. The Second part would consist of stencches and drawings of various animals and ecosystems across the United States as Leopold observed them. My favorite aspect of the second part is his writings of Arizona and New Mexico. This is where we get probably the most famous of all his writings, which would be his piece titled "Thinking Like a Mountain". Here he depicts the great and wild scene of Arizona's White Mountain plateau. This is where he witnesses the green fire die in the eyes of a mother wolf as he pumped round after round into it graphic yes but

²² The Aldo Leopold Foundation 2

important. It taught Leopold one thing and that is what this paper is all about. It taught him humility and respect for nature. The third and final part of “A Sand County Almanac” is his view on ethics and the culture of hunting and fishing.

Leopold describes the popularity of outdoor recreation. He talks about it in its many aspect: hunting, fishing, trapping, hiking, and various nature observing, and for the vast majority of outdoor enthusiast this just that recreation or a hobby with no personal economic gain. He describes the importance of “trophy” fish and animals and their important role in not only the natural world, but in our world as well. It is the drive and that x factor that keeps a hunter waking up every morning at 5 in the morning. With that he talks about every outdoorsman’s love of solitude. The idea of being alone and at peace in some of the most beautiful natural landscapes on earth is greater than any trophy. Though, Leopold says that with increase human pressure even this is becoming hard to find. He says that it is those who use the land recreationally have just as an important role in conservation as though who make a profit from nature. We are all in this together and are all connected (A Sand County Almanac²³). Aldo Leopold was very big on the idea of the outdoors as a culture and lifestyle. He says that we are culturally connected to nature in some way whether it’s through our national heritage, our own ecological awareness, or simple a curiosity for the wild we can and do all connect to nature (A Sand County Almanac).

A point that Leopold makes that I back whole heartily is that modern day hunters and fisherman have a tendency to get to wrapped up in technology. What I find so beautiful about Leopold’s work is how pure it is. To become a more ethical, sustainable, and all around better

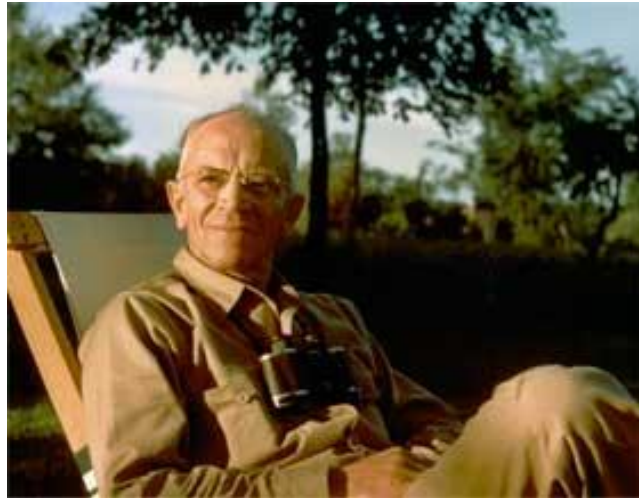
²³ David Lahti, Reflections on the Great Literature: Aldo Leopold’s “A Sand County Almanac”, 2005

outdoorsman the phone, wind direction tool, the fancy optics; though great tools definitely take away from the most purest element of hunting and fishing, fair chase. Let's be honest humans are nothing more than another predator. I feel that since we are sentient beings with a conscious and with superior thoughts that we should use our knowledge and channel it through a more simplistic means of taking down game. With that being said, some things have to be clarified, I am not saying that using camouflage is unethical, no not at all, what I am saying is unethical is using technologies during hunting and fishing that take away the element of failure and mysticism. Leopold was a manager of the land and appreciated it like nobody else. He said that we came from the wild. It should be important to us, but it is disappearing and not enough of us care (A Sand County Almanac²⁴).

Leopold's land ethic is one that I hold to the highest standard. It is an ethic that among all else hits all the aspects of a good moral and ethical sportsman's conscious. According to Leopold ethics have grown more comprehensive and complete. This obviously has come with years of trial and error and research. Relating his idea of ethics and its complexities to that of Darwin's expanding circle idea, Leopold understands and wants us to understand that through ecology and evolution we learn that humans are part of the natural community. Humans, contrary to popular belief are still a species of animal. The land and all who live in it are members of the same community, and as with any community ethical action plays a vital role. "We should teach that the land is an ecological unit, an energy circuit. In sum, although we must consider economic expediency in all of our actions, we also must consider (for it is right to do so) our moral

²⁴ Lahti, Reflections on the Great Literature 2

obligations with respect to the stability, integrity, and beauty of the natural community of which we are a part (A Sand County Almanac²⁵)”.



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Conclusion:

Hunting, fishing and trapping are not the evils of the natural world. Over harvesting and the underutilization of education is. In a joint effort from those who are pro-hunting, fishing, and trapping and those who are against it the world can become a better more sustainable place. Through hunting and fishing we get what I like to call a cleansing of the soul, this idea that you are at peace and are free. There are ways in which hunters, fisherman, and trappers can become better at conservation, but there are those on the other side that can also become better. The basic idea of oneness is the key to saving the natural world through ethical hunting, practicing fair chase, and hold all that walks and swims to that of a sacred standard. Through the thoughts and eyes of Aldo Leopold it can be done. “We abuse land because we see

²⁵ Lahti, Reflections on the Great Literature 3

²⁶ The Aldo Leopold Foundation 3

it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect (Aldo Leopold²⁷)”.

This thesis on hunting, fishing, and trapping in the state of New York has not only help me become a better outdoorsman, but a better steward of conservation and protecting the wild spaces that I hold so near and dear to me. the months and years I have spent in the woods, on the rivers, and walking the lake shores has all resulted in the paper you see before you. For those still in question of whether or not biodiversity can be found in New York, and asking the question does New York have a thriving ecosystem; the answer is most definitely yes. My hope is that through the lifestyle of the outdoorsman that the next generation can learn and become more aware of their natural surroundings. As Robert Louv argues in “Last Child in the Woods”, we need to raise environmental in his country, but even more importantly in our nation’s youth. They are the future, and they hold the key to saving our wild spaces from extinction.

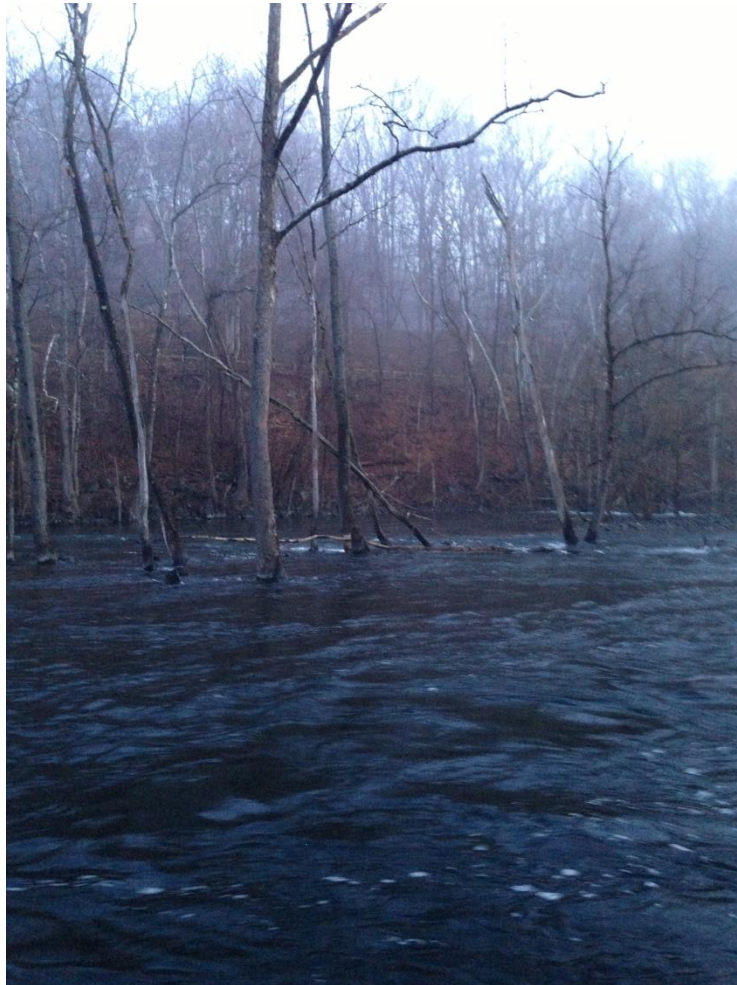
In discussing the topics of hunting, fishing, and trapping in New York State and the United States as a whole, the focus has been and will continue to be shed in a negative light, but this need not be the case. These disciplines and outdoor “activities” are second to none in the act of raising awareness of our environment and the problems within it.

The fact of the matter is hunting, fishing, and trapping are a means to put food on the table, and are a means by which one can enjoy nature. Being outside is not only liberating for the mind and body but also the soul.

The overall goal of this thesis was to further educate all on hunting, fishing, and trapping in the state of New York. This paper allowed me the ability to teach those who are unaware of

²⁷ Aldo Leopold

our ancestral root that has always coincided with the land and its animals in this state and in this country as a whole. No one understands our wilderness better than the men and women who spend countless hours in it. Biodiversity is rich in the state of New York, it is just a matter of getting off the couch and going out to find it, and hunting, fishing, and trapping is a great if not the best way to enjoy that.



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²⁸ This is the Croton River Gorge in Croton on Hudson, NY opening day of the New York trout season April 1, 2013. This was taken in the morning at 6:20 a.m. and we ended up with three rainbow trout and a brown trout that day.

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