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The Economics of Endangered Species Conservation

Some of the most significant threats to the continuation of wildlife and species conservation is loss of habitat, failure to adapt to environmental change, and human intervention. Of these reasons which lead to extinction, the most imminent problem that can be addressed economically is how humans can remove themselves from the equation. Hunting for food sustenance has been superseded with improvement in agriculture, and there is no necessity to hunt other than to procure less industrialized meat or for aesthetic and ornamental purposes. However, trophy hunting is not why animals are at risk of going extinct. The real threat to wildlife protection is poaching and exploitation of animals to fuel the ivory trade. Trophy hunting sustains conservation efforts by providing economic incentive to local agencies and governments to protect endangered animal habitats, fending off illegal poaching and regulating the ivory trade.

Legal trophy hunting provides revenue which is used to fund conservation efforts. In Africa, [“big game hunting is big business”](http://www.bbc.com/news/business-34017235) worth an estimated US$200 million annually for trophy hunting licenses alone where most hunting takes place on private game farms. Countries like South Africa have whole markets for big game hunt tourism worth up to $2 billion a year to the country's economy which includes animal products that can later change hands at auctions for millions. The figures are also based on “species fees” paid by hunters to game farmers and landowners to hunt a trophy animal, and daily rates charged by hunting outfitters to “cover expenses related to food and accommodation” (Africacheck.org). This money generated is used by nations and conservation agencies to fund wildlife preservation projects, hire more rangers to combat heavily armed poachers, and set up reserves dedicated to trophy hunting and protecting endangered species from being poached to extinction in order to generate more future revenue. Furthermore, this money often goes to the local community, landowners, and farmers who have more incentive to protect their land and the animals from poachers.

According to reports from National Geographic, the going rate for a 14-day, single hunt is about $80,000. The trophy hunts are also under strict regulation, limiting how many animals of a species can be hunted a year based on its level of endangerment; for example, only five elephants can be hunted a year and their trophy hunt “represent real money” to the economy. A portion of the fee is paid directly to community members to a fund for conservation projects to protect the area’s wildlife. As for the elephant trophies themselves, the client would take the tusks home or to auctions while the meat would all go to the local community. Trophy hunting is a strictly regulated and heavily prized industry that protects species populations, generates government revenue, funds conservation jobs, and provides for indigenous communities. Contrastingly, wildlife poaching has “negative side-effects that affect local communities, wildlife populations, and the environment. It is a crime fueled by a lucrative black-market trade of animal parts.” Species like the West African Black Rhinoceros and the Quagga (subspecies of plains zebras) have been poached, not hunted, to extinction. However, in areas where trophy hunting reserves and wildlife sanctuaries are not present, poaching is more lucrative than other jobs that are available in the region; a harsh reality faced by many individuals within the communities (Onegreenplanet.org). The economic incentive for poaching is high when the local economy has no other revenue to motivate protection of these species. Therefore, hunting is either regulated or handed over to the black market created because of a ban on ivory or any animal product.

The most common solution proposed is a complete international ban on the ivory trade. However, this would only stimulate the formation of a black market. For example, in 1989 the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) banned the international trade in ivory to protect elephants from excessive hunting activities. This ban created a rewarding black market in ivory which led to even larger amounts of elephant poaching. The illegalization of ivory and animal trade also removes any profit incentive for landowners to protect these species. Furthermore, in cases like the American Bison and North American Grey Wolf, not only were bans and complete prohibition inadequate, but many of them caused the animals to become endangered in the first place. This is because placing animals on protected species lists and entirely banning their hunt created value for the animal that was not as prominent before. The ban on trade of these animals created a greater demand, raising the price of their products and compelled poachers to make greater profits of the animals’ protected status. Therefore, by legalizing and regulating the sale of ivory and other animal goods, the black market will be greatly reduced and private landowners (who can manage the resource much more effectively and efficiently) will have an incentive to protect and even grow species populations (Mises Institute).

The main cause for poaching stems from its high demand and extremely limited legal supply. Many countries like China and the US have high demand for wildlife products such as rhino horn and ivory which forms a huge economy for the items on the black market, making the products worth thousands of dollars. Particularly, Rhinoceros horns, which currently costs around US[$60,000 per kilogram](http://www.bbc.com/news/magazine-32151983), is worth more than gold (youth4africanwildlife.org). The poached horns are often [illegally shipped to high demand countries](https://www.savetherhino.org/rhino_info/threats_to_rhino/poaching_for_traditional_chinese_medicine/supply_and_demand_the_illegal) and used for items such as medicinal tonics and powders. Buyers believe that ingesting Rhino horn concoctions can cure ailments like cancer and hangovers, even though there is little scientific justification for this claim as horns are made of keratin which is found in human fingernails and calcium deposits. The demand for these unconventional and unproven treatments is what has sparked the steady increase of poaching incidents, and the large cash rewards continue to entice many people to become involved in the illegal business. Because of this reason, another proposition as a solution to counter poaching is to cut down on demand; however, this is easier said than done.

Cutting down on supply by banning the trade only fuels the illicit ivory trade market. Likewise, any action taken to decrease supply to the ivory market would have adverse consequences that impair efforts to halt the illicit endangered species trade. Reducing supply would raise prices and decrease quantity, and because of this increase in price of ivory, poachers would have more incentive to turn an even bigger profit. With less supply, demand staying relatively the same would make ivory more valuable and sought after. This happens because demand for ivory and other animal products is inelastic. Therefore, burning or destroying stockpiles would only discourage ivory trade if demand were to also decrease with the supply reduction. The only viable option would then be to target demand and make it more elastic. Countries like China have an inelastic demand because of traditional beliefs and social norms while the West prizes it for the fact that there is an inelastic supply of it which makes it more valuable at auctions. From an economics standpoint, the solution to decreasing price of ivory while also decreasing supply is by making demand and supply more elastic; ideally, the outcome aimed for would be to have an elasticity of demand that is greater than the elasticity of supply. However, the current reality is that demand is tremendously more inelastic than supply around the world. With the promotion of trophy hunting, supply becomes more inelastic as they sell for the high price while matching the quantity which has less of an adverse effect when they generate less profit for poachers. At most, the increase in supply would drive prices down if elasticity is not as heavily affected.

Since demand remains inelastic, another proposition to further supply elasticity is by staining tusks and ivory. The idea behind this is that stained ivory would no longer be usable or tradable in the black market by poachers. This is a more humanitarian pathos that approaches morality rather than dealing with economics with the goal of protecting animals that have stained tusks and horns from being poached. Because of its new age appeal, animal rights groups have rallied around the idea of such projects. However, looking at the measures for the project to work, current technology and dye have not yet been compatible to adapt to requirements for this to be successful. The criteria listed for the stain are that it must be indelible or permanent, visible to the naked eye while not affecting animal vision and usage, permeate and penetrate all through the dentin of the tusks, and sustain new tusk growth. Furthermore, the stains would have to be administered quickly and intensively with growing animal populations (howitmightwork.com). As of now, this dye has yet to be fully developed. Moreover, this would only cut into the supply which further instigates the profit incentive to meet demands elsewhere.

Economically, trophy hunting is by far the most sustainable solution to appease the inelastic demand in the ivory trade. In Namibia, trophy hunting is the main method by which new wildlife conservancies are funded. African nations have taken advantage of the existing demand for trophy hunting and used the proceeds to fund animal conservations, and many of these national programs are almost fully dependent on this revenue from trophy hunting and auction sales to pay game guards, buy equipment, maintain habitat, etc. Legal trophy hunting introduces free-market regulations to ivory trade, controlling instead of criminalizing it. Sanctioned trophy hunting can counter poaching, which is highly destructive, organized, ruthless, and decimating animal populations. Trophy hunting offers a real-world solution to an ethically dubious problem. It also could solve the problem of loss of habitat, another key driver of species extinction, as farmers clearing animal habitat for farmland now receive revenue from trophy hunters which incentivizes them to sustain endangered populations while protecting their land from poachers. With how strict each trophy hunt is monitored and how much revenue the business model generates, killing one of an endangered species creates a lucrative, open economy that saves potentially millions more.

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