

“White Gold”: The Ivory Trade Ban

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Abstract:

The poaching of elephants as a means of obtaining ivory has led to rapid declines in their populations. In 1989, the elephant was listed under Appendix I of CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora). Consequently, a ban on the trade of ivory was imposed in 1990. This paper discusses the effects and debate around the ban, concluding that the ban was the most realistic policy to implement in order to save the elephant.

Keywords:

CITES, open access, nonuse value, Appendix I, Appendix II, CAMPFIRE

Introduction

The trade in live animals and the parts of dead animals is estimated to be around \$5 billion annually, and nearly a third of this trade is illegal. This illegal trade is an important component of species loss and overexploitation of natural resources. The case of elephant ivory has gained more visibility than issues involving other wild animals. It has involved countless organizations over the past half century. The majestic size and high intelligence of the elephant, a favorite zoo and circus animal, have made it easy to publicize their plight and win sympathy for their preservation.

The main means of obtaining ivory for trade is through the poaching of elephants. Elephants generally live 70 years (MacKenzie, 2001), so little ivory is acquired from natural deaths. Thus, with the introduction of a market for ivory, came the poaching of elephants on a massive scale. The hunting of elephants for ivory really began in the 1970s, with the high availability of automatic weapons. The ivory trade existed well before this time, but to a much lesser extent. As the trade in ivory flourished, and prices reached about \$125 per pound, the status of the population of African and Asian elephants became a great concern to conservationists, the tourism industry, and some governments. Ivory was often referred to as “white gold”, and rightfully so – its value had in fact surpassed that of gold. The market for ivory was estimated to have been worth \$50-60 million annually (TED, 2005).

In this paper I will first briefly describe the conditions that led to the overexploitation of the elephant population through a short analysis of the open access market for elephants and their products, as well as their neglected non-market benefits. I will then discuss the consequences of the ivory trade ban. Next, I will explore the arguments in favor of, and against the ban, concluding that the arguments in favor of the ban are much more compelling. *The nonuse value of elephants is not accounted for in the market, which results in a below optimal elephant*

population. I argue that on the basis of the precautionary principle, the ivory trade ban as dictated by CITES is necessary to ensure the conservation of elephant populations. Finally, I will discuss the move to lift the ban.

The Open Access Market and Nonuse Value

In an open access market such as the market for ivory (which can also be thought of as the market for dead elephants), individuals race to extract the resource. The absence of well-defined property rights leads to a “tragedy of the commons” mentality - if one person does not extract a profitable unit, someone else will (Sunding, 2005). In other words, individuals act myopically, as if user cost is equal to zero. This can be illustrated in a two-period model with open access, as shown in Appendix I. The optimal amount of extraction, or in this case, killing of elephants, is X^* - where the marginal benefit in the first period is equal to the marginal benefit in the next period. However, with open access, elephants will be killed in the first period until marginal benefit is equal to zero (at X^{OA}), where no more benefit would be gained from the further killing of elephants.

Needless to say, this leads to an above optimal extraction rate ($X^* < X^{OA}$). In a study conducted by the World Wildlife Fund (WWF) and Conservation International (CI) in 1998, the sustainable level of ivory consumption was 50 metric tons annually, while the world had been consuming 770 metric tons per year. In the 1930s, African elephants numbered between 5 and 10 million. By 1979, this number had fallen to 1.3 million (Barzdo, Caldwell, and Martin, 1986). Their population today is 600,000. The population of Asian elephants suffered a similar fate. There are now no more than 35,000 to 40,000 left in the wild. Today, they are even more endangered than the African elephant (Kasnoff, 1996). The low cost of entry into the ivory market allowed elephant populations to plummet in this way. All individuals really need are guns (which were easily obtained due to their high availability following the war). At the peak

of the ivory trade, about 100,000 elephants were killed each year, producing 800 to 1,000 tons of ivory (The Why Files, 2005).

Another element that led to the demise of elephant populations was the disregard for their nonuse value. Elephants provide economic benefits outside of just the ivory from their tusks. Elephants serve as main attractions for tourists. As a prominent member of the “big five”, African elephants are crucial to the tourism sector. For instance, Kenya earns around \$50 million a year from tourists coming to see elephants (Kasloff, 1996). The disappearance of elephants could cause the collapse of ecotourism in many African countries; and for some countries, such as Zimbabwe, ecotourism is seen as a means out of extreme poverty (Hara, 1997).

Elephants are considered a keystone species – many other species are dependent on them. For instance, many animals rely on the waterholes elephants dig. Also, animals such as birds pick through elephant dung for nutrients, which also serves to replenish the soil. Some seeds are unable to germinate unless they have gone through an elephant’s digestive system (Kasloff, 1996). Additionally, the existence value of elephants is often unaccounted for.

Appendix II illustrates the consequence of ignoring the nonuse value of elephants. The difference between the social marginal cost curve (SMC) and the marginal cost curve (MC) is the non-market benefits provided by live elephants. This graph shows that harvesting rates are above optimal ($Q' > Q^*$).

The Demand for Ivory

The reason this open access market flourished so quickly was due to the growing demand for ivory. From 1979 to 1987, Hong Kong was the primary consumer of ivory. Japan followed as the second largest consumer, and Taiwan took third place (TED, 2005).

World Raw Ivory Consumption (%)

Country	1979	1981	1983	1985	1987
HONG KONG	37	48	40	22	36
JAPAN	28	32	20	24	22
EC	18	5	6	7	4
TAIWAN	2	2	3	4	20
MACAO	0	0	2	15	2
CHINA	1	1	2	1	10
INDIA	2	2	2	4	1

Source: TED (2005)

The demand for ivory was in full swing, and showing no sign of retreating.

CITES and the Ivory Trade Ban

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is an international agreement whose aim is to ensure that the international trade in wild plants and animals does not threaten their survival. Animals and plants are traded not only within countries, but between countries, so the effort to protect them requires international cooperation. CITES came into effect on July 1, 1975 and has 169 member countries. There are currently over 30,000 species given varying degrees of protection under CITES (CITES, 2005).

CITES classifies species that are in need of protection into three groups, depending on the degree of this need. Appendix I species are those threatened with extinction. Trade in these species is prohibited except under extraordinary circumstances. Appendix II includes species that are not threatened with extinction, but who face this threat if no action is taken. Finally, Appendix III species require an export permit issued by the Management Authority of that State. This permit ensures that the species was acquired by legal means, and that its shipment has minimized all damage to the species (CITES, 2005).

In 1977, the African elephant was recognized as a threatened species, and was consequently given the status of an Appendix II species. CITES instituted a system of ivory

export quotas, but the rising demand for ivory in the 1980s overcame this attempt to protect elephant populations. It was estimated that the elephant could be extinct by 2010. The pressure, mostly from Western nations and environmental groups, to ban all trade of ivory mounted. In 1989 the elephant was listed under Appendix I of CITES. Consequently, a ban in the trade of ivory was introduced. The ban took full effect by 1990 (Hara, 1997).

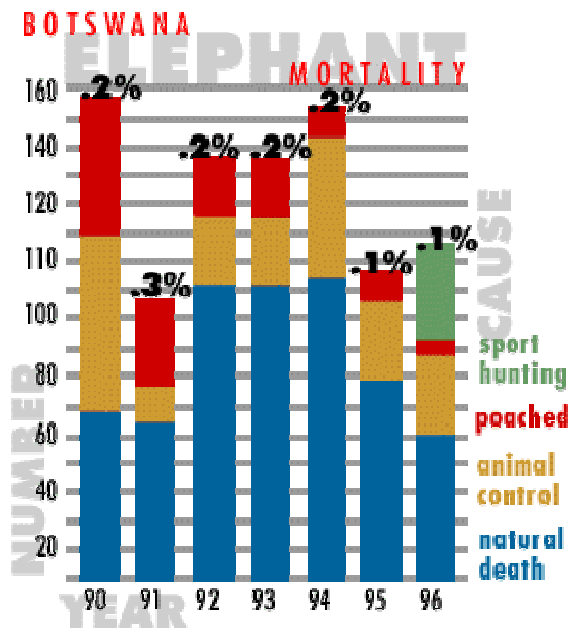
This ban was not welcomed by all members. Many Southern African countries who participated in the production of ivory, but had stable elephant populations opposed the ban. These countries did not want to be punished for the poor management practices of others. CITES considered a proposal that would distinguish between herds from areas with dwindling elephant populations, and those from areas with high populations. This was rejected as unenforceable, and unrealistic. Arguments in favor of the complete ban contended that it was almost impossible to distinguish between legal and illegal ivory. In addition, if there were any sort of market for ivory, illegal ivory could easily be placed into the legal ivory trade (Hara, 1997).

Effects of the Trade Ban

The ivory trade ban has had varying effects. These effects depend on the type of state involved. Bennett (1997) describes three types of states: producer, entrepôt, and consumer. These states have different motives for compliance. Governments in producer states are less inclined to put pressures on poachers because they gain economically from the killing of elephants. Botswana and Kenya are good examples of producer countries. They were disadvantaged by the trade ban because not only did they lose economically speaking, but elephant populations grew beyond carrying capacity. Entrepôt states are those that hoard and store ivory until conservation efforts are relaxed. Both producer and entrepôt countries cater to the demands of consumer states.

The total number of elephants across Africa is between 300,000 and 600,000, which is half what it was projected to be 40 years ago and less than one percent of their original population. However, since the ivory trade ban, many elephant populations have been able to thrive. In fact, the overpopulation of elephants is becoming a great concern in many regions, especially regions where populations have risen beyond carrying capacity or where they are in direct competition with farmers and domestic herds (African Wildlife Foundation, 2005).

In Botswana, the ban has dramatically increased the elephant population, which is currently between 54,700 and 60,935. Poaching in Botswana is at a historic low, which has led to a 25 percent increase in the population. Before trade was banned, Botswana had thriving markets for consumptive elephant products. It also had stable populations (Bennett, 1997).



Source: The Why Files (2005)

National parks and game reserves are the main places where elephants are under official protection. This form of land use faces much competition in Southern Africa where agriculture is the main form of economic activity in rural areas. In Malawi, parks and game reserves comprise 20 percent of the land mass (Hara, 1997). With a population growth rate of 3.5 percent

per year (Barzdo and Caldwell, 1985), the pressure to move into these protected areas is mounting. This pressure may cause land to be converted to livestock ranges because while it is somewhat simple to put aside land for conservation in developed nations, it is a different situation in the developing world. Jon Hutton (The Why Files, 2005) of Africa Resources Trust (a Zimbabwe conservation and development organization) argues that, “In Zimbabwe, if wild land doesn’t produce for people, it will be used for agriculture or cattle. Crops give survival – elephants don’t.” At the same time, elephants are encroaching on communal areas, where they cause damage to crops and to the area in general. As water and other resources in protected areas become scarce, more and more elephants are moving into communal areas, posing competition for resources among rural peoples. Most of the agriculture in these communal areas consists of subsistence farming, so elephants are viewed as pests and are not well tolerated. In fact, the damage elephants are causing to many agricultural communities is disastrous.

Many of the Southern African countries have instituted programs for regulated hunting, in an attempt to lessen the damage done by extremely high elephant populations. Zimbabwe, for example, instituted CAMPFIRE (The Communal Area Management Programme for Indigenous Resources). This program works with locals to manage elephant populations sustainably so as to gain through both direct use values, and nonuse values (TED, 2005).

When trade was banned, Botswana lost about 53 percent of its potential direct use values. This loss is hardly compensated for with the increased non-consumptive benefits. Similar situations prevail in many Southern African countries, where the ban has made tourism the only way to receive use value from elephants. All-in-all, the ivory ban has been retrogressive for Southern African countries (Bennett, 1997).

The effects of the ban seem to be devastating economically for Southern African countries. The need for economic incentives for conservation is extremely important, especially

in areas where elephant populations are accruing high costs in damage. It is argued that Southern Africa as a whole generally aims to maintain or increase the economic value of wildlife as an incentive for conservation. One of the tools for doing this is ecotourism, which can provide a source of income, employment, and development. For example, tourism brings in \$424 million per year in foreign exchange in Kenya. In Zimbabwe, tourism brings in \$100 million every year. Ivory, in comparison, brings in only \$4 million a year (Hara, 1997).

Arguments Supporting and Opposing the Ban

History

Historically speaking, trade bans on threatened species have not always worked. In 1987, the rhino was listed under Appendix I of CITES, and domestic and international trade in rhino products was prohibited. The demand for rhino products did not diminish though, and there are only five species of rhinos today, all of them endangered (TED, 2005). According to Kreuter (1993), “The adoption of an international ivory trade ban is particularly ironic in view of the total failure of a similar trade ban on rhino horn to reduce the demise of the black rhino.”

Prices

One of the most debated arguments against the ivory trade ban is that the ban will only cause prices for ivory to skyrocket, removing incentives for long-term sustainable management, and will actually encourage poaching. Furthermore, demand will remain unaffected by the ban and a black market for ivory will be established. This view argues that because of this effect on prices, the killing of elephants may not decrease to the extent desired, if it does diminish at all (IDEA, 2005). It is difficult to halt the poaching of elephants when one elephant can yield \$3,600, while the average worker’s wage is \$1,000 a year (Bennett, 1997). Although this makes sense theoretically, the results of the ban prove otherwise.

The demand for ivory has actually been shrinking, perhaps in part due to a moral barrier created by the ban. In addition, prices have actually fallen below their pre-1989 level. Removing the ban would only re-introduce the interest in ivory, open up its market, and raise prices. Furthermore, the killing of elephants has indeed dropped dramatically (IDEA, 2005). The average annual number of elephants poached in Kenya has declined from 3,500 in the early 1980s, to around 50 in 1993. The ban has closed the market for ivory, and prices have in fact decreased from \$125 to \$5 per pound (TED, 2005). Environmental organizations and conservation education programs have, of course, also contributed to the loss of consumer interest in purchasing ivory. Campaigns to save high profile species such as the elephant are a form of visible or shirt-sleeve environmentalism that creates good publicity for zoos, parks, private companies, governments, and non-governmental organizations alike.

Ivory Revenues for Conservation

Opponents of the ban argue that revenues from the sale of ivory could be used for elephant conservation efforts. However, according to Bulte and van Kooten (1999), this idea “may be relatively unimportant because economic theory dictates that government proceeds should be invested in the economy to obtain the greatest marginal gain in social welfare, which might not necessarily be to protect elephants.”

A Second Best Policy?

Opponents of the ban suggest that prohibiting the trade in ivory is not the first best policy. The optimal solution would “maximize revenues from the consumptive use of this resource while at the same time maintain a stable population to maximize the non-consumptive use and to protect the ecosystem” (Bennett, 1997).

A trade ban on ivory *is* a second-best policy. Appendix III illustrates this point. Here, D represents the demand for ivory, and S represents the supply for ivory. The killing of elephants reduces the welfare of those interested in non-consumptive benefits. This causes the S -curve, the marginal cost curve, to shift back to the social marginal cost curve (S'). It is optimal to have restricted trade, so that Q^* elephants are killed. A trade ban, where $Q = 0$, is suboptimal because at this point a dead elephant is worth more than one that is allowed to live (Bulte and van Kooten, 1999).

However, restricted trade is hard to enforce in practice. If a management regime could provide strict enforcement so that illegal killing of elephants was not permitted, this would be optimal. A regime such as this is not realistic though. Restricted trade may camouflage illegal trade, which hardly solves the problem. A second-best policy, a trade ban, is in order (Bulte and van Kooten, 1999).

The Move to Lift the Ban

Zimbabwe, Botswana, and Namibia have put pressure on lifting the ban in order to sell stockpiles of ivory which have accumulated from the natural deaths of elephants, confiscated illegal ivory, and from the killing of elephants for safety purposes. The total value of these stocks is around \$8 million. Elephant populations in these countries are high, and elephants are now competing with the rural people for resources. The Southern African Development Community (SADC), made up of 12 countries, supports the lift of the ban (TRAFFIC, 2000).

Many are skeptical of the altruistic or disinterested intentions of the ban. When it was passed in 1990, it was western media sources, which imposed “western” values on the rest of the world, that were responsible for its wide acceptance. These critics feel the ban represents yet another instance of neo-classical, hegemonic dictation of rules and values. The views of rural Africans, for example, were not taken into account even though they are the people who are

forced to compete with elephants for scarce resources. Ban opponents believe humanistic, economic considerations should trump animal welfare and conservation. There is also skepticism as to whether elephants even qualified to be protected under Appendix I status. To qualify for the status of “endangered”, the species must currently be threatened with extinction. For African elephants, their population should number about 2,000 to qualify. In 1989, there were at least 10 populations exceeding this number. The CITES endangerment criterion was not met. Furthermore, of the 76 countries voting for the ban, only 20% of them housed elephants, while of the 11 countries voting against the ban, 73% had elephants. Some of these countries may of course consume elephant products, even if they do not have herds themselves (Kreuter, 1993).

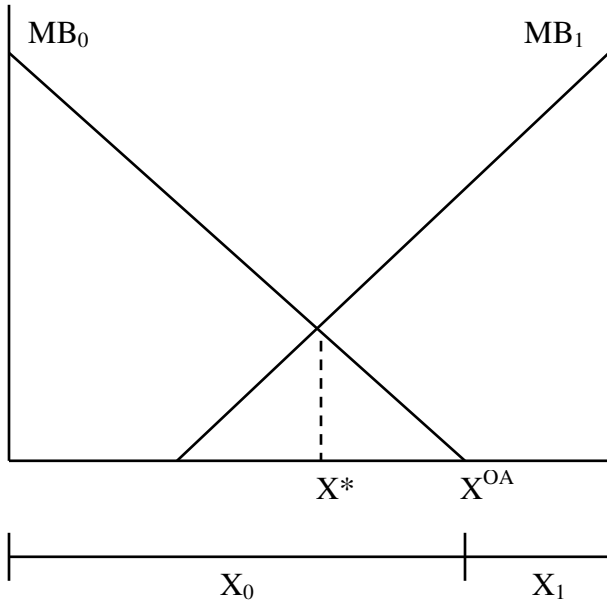
CITES met again in 1997 to face a proposal that would allow Zimbabwe, Namibia, and Botswana to export their existing stockpiles of ivory to Japan. These countries house thirty percent of all elephants in Africa. On June 19, 1997, the measure was passed, allowing these countries to lower the status of elephants from Appendix I to Appendix II. In addition, if these countries met certain conditions they would be permitted to resume trade in ivory with Japan in 1999. These conditions included: 1) the enforcement of measures to ensure that illegal poaching does not increase in other parts of Africa, 2) the maintenance of a reporting and monitoring system for poaching and trade, and 3) the identification of management and trade control deficiencies by the CITES Expert Panel. If these conditions are not met, then elephants will resume the status of an Appendix I species in these countries (TRAFFIC, 2000).

Conclusion

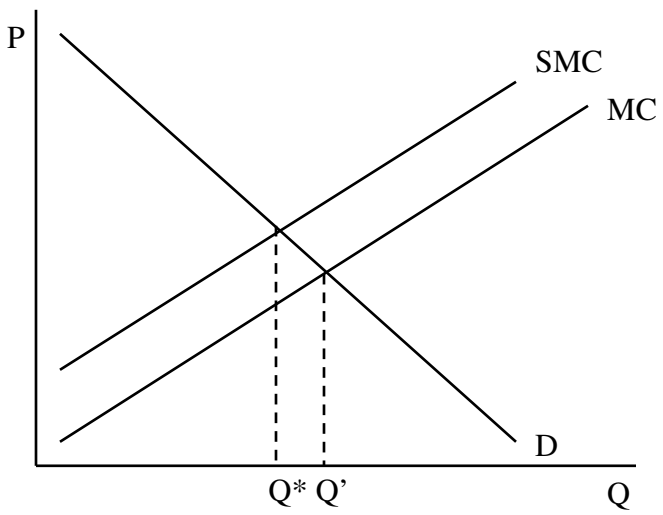
The ivory trade ban has had differing effects throughout the world. Although the ban admittedly had many negative effects, it has helped save the elephant population. Had this policy never been instituted, African and Asian elephants may be extinct today. In light of the

precautionary principle, the ban of ivory was not only warranted by necessary in order to save the elephant populations. The continuous poaching of elephants involves irreversibility – once elephants have been completely killed off, they will not come back. Because irreversibility is involved, it is especially important to protect elephant populations at any means necessary. Elephants are a valuable part of the ecosystem, and the trade ban on ivory has allowed them to survive.

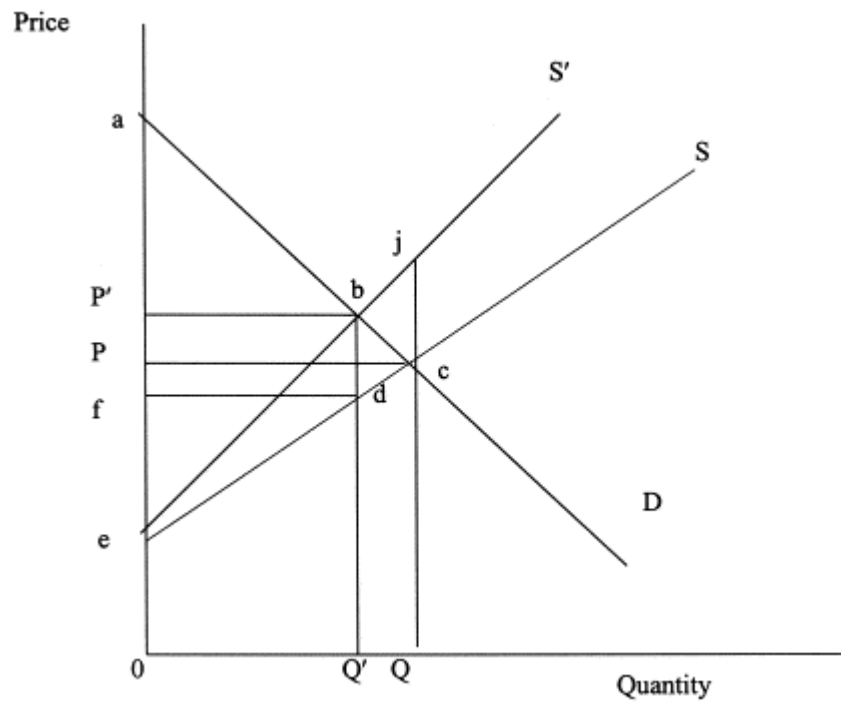
Appendix I
Two Period Model With Open Access



Appendix II
Market for Ivory (Dead Elephants)



Appendix III



Source: E.H. Bulte, G.C. van Kooten

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