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An Ivory-Tower Take on the Ivory Trade

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A COMMENT ON: KREMER, MICHAEL, AND CHARLES MORCOM. 2000. ELEPHANTS. *AMERICAN ECONOMIC REVIEW* 90(1): 212-234.

ABSTRACT, KEYWORDS, JEL CODES

THE MARCH 2000 ISSUE OF THE *AMERICAN ECONOMIC REVIEW* featured an article by Michael Kremer and Charles Morcom, titled simply, "Elephants." As one would expect in such a prestigious journal, the article is clever and the mathematics are sound. The paper, essentially, takes a species-extinction model of the kind pioneered by Colin Clark (1973) and introduces the wrinkle that the valuable good derived from certain species is storable, and hence subject to speculation. Kremer and Morcom focus on how the price of ivory affects the incentive to poach elephants and how government policies can be developed to address this problem. Despite an ostensible emphasis on policy, however, the 'state of the world' that is assumed throughout the paper is so far removed from the real world of elephant conservation that the authors' policy recommendations ring hollow. Indeed, they are effectively irrelevant. This comment reviews the shortcomings of Kremer and Morcom's article and briefly explains a more important institutional approach to elephant conservation.

Speaking to the *New York Times*, Kremer described the problem of elephant poaching.

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> If some people go out and poach a lot of elephants, and everyone thinks that the elephants are going to go extinct and there's not going to be any more ivory, that can induce speculation on ivory prices. . . . And that speculation on ivory prices can induce more people to go poach. So you get the possibility of self-reinforcing expectations (quoted in Postrel 2000, C2).

Under this scenario, Kremer and Morcom present two options for preventing extinction. First, if possible, governments should create credible threats to poachers that kick in once a species dips below a certain critical level, because "expectations of future government antipoaching enforcement will affect current poaching" (Kremer and Morcom 2000, 227). Credibility, however, is a problem in many parts of the world. The second option Kremer and Morcom would have governments pursue is to stockpile supplies of ivory, releasing it into the market at a rate that keeps prices low and, therefore, limits the incentives for poaching.

Kremer and Morcom make several egregious assumptions about the "world" their article describes. First, they assume that trade in ivory is legal; second, that elephant habitat is constant; third, that all elephants exist in a state of open-access; and forth, that state intervention is the only viable approach to conservation for its own sake. All four assumptions depart from the real world.

The UN sponsored Convention on International Trade in Endangered Species of Flora and Fauna (CITES) has banned any international trade in elephant ivory since 1989. Of course, the 160 nations that are a party to CITES have varying degrees of enforcement, but, in general, legal trade routes are well monitored. CITES has no domestic jurisdiction, so ivory may be sold internally, but the really lucrative markets are international. Thus, underground markets have developed, especially in Asia.

The parties to CITES have made some exceptions for one-off sales of stockpiled ivory, not to affect the price of ivory, but to help pay for conservation programs and community development. In the case of the first one-off sales allowed in 1998, Zimbabwe, Botswana, and Namibia spent years pushing for the opportunity. In South Africa's case, it took over ten years of trying before it was finally permitted a one-off sale in 2002. Even aside from what public choice theory has taught economists about how, in the real world, governments work, long delays (measured in years) in obtaining international sanction for any sale makes it unlikely that

Kremer and Morcom's second policy proposal—to stockpile and sell off ivory to fine tune the price—could work.

The Kremer-Morcom model holds habitat *constant*. Yet the greatest threat to elephants is not poaching, but habitat loss. The United Nations Environment Program predicts that because of rapid growth of human populations in Africa, throughout the elephant's range, habitat loss and degradation will be the major threats to elephant survival[1] (Barnes 1994, Infield 1990 as cited by UNEP 2003).

Kremer and Morcom also ignore the fact that, along with the positive value of their ivory, elephants have a negative value. Elephants trample crops, humans, and even dwellings. To the people living around them, elephants are a nuisance. So even if CITES, or the Kremer-Morcom credible threat/stockpile approach, were successful, there would still be a tremendous incentive for rural Africans to convert habitat into cropland and to support reductions in elephant populations.

The only way that rural communities will support large elephant populations is if they see *value* in those elephants. This is the reason why many southern African countries have initiated programs to devolve some control over wildlife, and wildlife revenues, to local communities. The most notable is the CAMPFIRE program in Zimbabwe. Despite government corruption, these programs have been more successful than the prohibition schemes attempted in countries like Kenya.

Zimbabwe and other Southern Africa countries, like Botswana, Namibia, and South Africa, have also ceded some management authority to private landowners as well, and the growth of private wildlife conservancies has been one the real conservation success stories in Africa—so much so that even Kenya has experimented with them (De Alessi 2000). Clearly, Kremer and Morcom's assumption that all elephants exist in a state of open access is way off base.

Kremer and Morcom do discuss "the case in which it becomes profitable to protect the resource as private property at a sufficiently high price" (214), but again, only from a state of open-access. And by focusing only on the consumption of ivory, they ignore other, private approaches to conservation. Elephants are charismatic species, as evidenced by the

[1] In fact, as unlikely as it may sound to the casual observer, African elephants are *not* in danger of extinction. Their numbers did decline rapidly in the 1980s, but in many Southern African countries, there are actually *too many* elephants. In Zimbabwe, for example, the International Union for the Conservation of Nature (IUCN), a respected authority, last published a census for elephants in 1998. They estimated the population between 60,000 and 80,000 elephants, while the carrying capacity in Zimbabwe is closer to 30,000 (IUCN 1998).

millions of dollars spent every year on photo-safaris in Africa, i.e., non-consumptive use, and donated to groups like the World Wide Fund for Nature (WWF). The people who spend their money this way are deeply concerned about elephants, not because their tusks make nice carvings, but because they are magnificent beasts. But Kremer and Morcom consider only the market value of ivory (indeterminable since there is no real market), and assume that only the state values non-consumptive use.

Kremer and Morcom attempt to play up the importance of their storability wrinkle angle by referring to the decline of the American bison. The near-extinction of the bison "followed an improvement in the tanning process for buffalo hides, which presumably increased their storability" (214). Elephants, Kremer and Morcom argue, face similar problems. Hides from bison and ivory from elephants can be stored, and so these species face an increased likelihood of extinction due to speculation that prices will increase as they near extinction. Storability surely played some role in the depletion of the bison (although the most famous anecdotes are of bison killed only for their tongue meat and otherwise left to rot), but the heart of the problem was that bison, like many elephants, were valuable but unowned. Such was the case until six individuals, who either saw commercial opportunities or simply wanted to save the species, privatized some of the bison in the 1870s. Today, virtually all plains bison in the United States are descended from these animals (Sugg 1999). With time, however, the only real profits from these animals came from zoos and other displays, and from their meat—leaving little to be explained by the storable-goods model.

The authors also try to fit rhinos to their model. When Zimbabwe undertook a program of de-horning its black rhinos[2], poachers still killed the de-horned animals. Kremer and Morcom attribute this behavior to poachers trying to raise the price of their stockpiles. But since it often takes days to track an individual rhino, it is far more likely that poachers simply wanted to make sure they did not waste their time tracking the same horn-less animal a second time (De Alessi 2000).

Until recent political upheavals in Zimbabwe, rhino numbers had been rising since the de-horning program was abandoned in favor of moving the remaining animals to private game reserves. The rhinos on these private conservancies are tracked every day by a protective scout, and

[2] The makeup of rhino horn is similar to a mass of hair, and a de-horned rhino takes about five years to return to form.

local communities are rewarded for turning in potential poachers—effectively eliminating poaching (De Alessi 2000).

An even greater rhino success story exists in South Africa, where the Natal Parks Board reintroduced white rhinos to its parklands, then set out to commercialize the species by selling them to private land owners "as a 'draw-card' species for both hunting and non-consumptive tourism" ('t Sas-Rolfes 1998, 3). As a result, the Southern white rhino is the strongest rhino population in the world. Once again, the 'storability' of rhino horn had little to do with this conservation success.

The private approach, ignored by Kremer and Morcom, also offers the greatest hope for elephant conservation—an approach that depends not in devaluing the animals under an open-access regime, but in making them *more* valuable under differing types of private ownership regimes (see Simmons and Kreuter 1989). Kremer and Morcom simply ignore institutional change, and the evolution of property rights, as discussed by Anderson and Hill (1975 and 2001).

Kremer and Morcom state that "It is expensive to protect elephants as private property" (p. 214), but expensive for whom? For Kremer and Morcom, it is state "expenditures on game wardens, helicopters, and other antipoaching efforts" that matter (227). But why consider only state expenditures, especially in poor, developing countries?

In Zimbabwe tremendous resources were allocated to creating and improving wildlife habitat through a simple change in the law that allowed landowners and communal villages to manage wildlife as if it were their own. The law maintained the state as the ultimate management authority, but in practice, game animals were devolved to property owners (Child 1995). Very quickly, much agricultural land was converted back to wildlife habitat. Under a strict regulatory, no-take regime, protecting elephants is expensive for the state. Allowing wildlife to be privately protected incurs little cost to the state.

The work of Terry Anderson and P. J. Hill (1975 and 2000) is especially encouraging in this regard. They looked at the evolution of property rights in the American West, and how a number of innovative solutions to the problem of how to protect cattle grew out of private ownership. In the frontier American West, no one could initially imagine how privately owned cattle could be monitored and protected, but left to their own devices, cattlemen developed a complex system of brands and cattlemen's organizations to sort out ownership on the range. Then outside entrepreneurs developed barbed wire as an inexpensive way to fence in cattle. One can only imagine what an expensive and ineffectual mess would have resulted if

the West were still an open range with a government bureaucracy devoted to keeping the price of cattle low enough to discourage widespread depletion. Why promote such a program for elephants?

Kremer and Morcom also indirectly take on endangered species protection in the United States. Their anti-poaching model "provides a potential justification for laws which mandate protection of endangered species with little or no regard to cost" (Kremer and Morcom 2000, 215), which is exactly the approach taken by the U.S. Endangered Species Act (ESA). Paying little regard to cost is a suspect approach to begin with, but it becomes wholly counterproductive when those costs are borne by the private sector. The U.S. ESA prevents the usage of private land when federally listed endangered species are present. This creates a perverse incentive, which has led landowners to engage in preemptive habitat destruction to avoid the potentially devastating financial impact of the ESA. For example, owners of forests that could evolve into endangered red-cockaded woodpecker habitat (the woodpeckers prefer old-growth trees) tend to cut their trees ahead of schedule to avoid attracting the birds (Lueck and Michael 2003). Taking a similar approach to 'protecting' species in Africa is likely to be just as counterproductive as it has been in the United States.

Programs like CITES and the U.S. ESA rely on devaluing species, while the devolution model (creation of private property rights) relies on just the opposite. Prohibitions have never really worked, and even if they could be made to work, there would still be no positive conservation incentives. As noted by Virginia Postrel, in the *New York Times*, the real policy innovations for protecting elephants will come when economists and others start to recognize the importance if institutions and "how the structure of property rights might be changed to encourage people to protect elephants" (Postrel 2000, C2).

The exclusive focus on state intervention, as opposed to private action, is the ultimate failure of the Kremer-Morcom approach. To propose 'credible' government threats, or to task a government bureaucracy with keeping ivory prices low, is to indulge the vice of letting neat model-bound ideas pass as policy discourse. A far more valuable article would have explored the kinds of institutional arrangements that have resulted in species conservation, and how those institutions might be applied and adapted to the elephant case.

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