



The Economist Debate Series  
**Freedom and its Digital Discontents**  
 Second Debate Feb 26th–Mar 7th 2008

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**OPINION**

## Trade bans and conservation

### Call of the wild

Mar 6th 2008 | LONDON AND SAN FRANCISCO  
 From The Economist print edition

AFP



#### Is the prohibition of trade saving wildlife, or endangering it?

TWIN dragons sit high above the bustle of Grant Street, marking the ceremonial entrance to San Francisco's Chinatown. Up a steep hill, the cheap souvenirs give way to more exotic wares: antique figures carved in the Japanese *netsuke* style, statues of monkeys and roosters, delicate earrings and necklaces. They are ivory. There are lots of them. And they shouldn't be there.

In 1989 the signatories of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) agreed to ban trade in ivory. Last year CITES, which now has 172 member countries, extended this ban for a further nine years, having sanctioned but two sales from stocks, of which only one has taken place. A stroll in Chinatown suggests that trade is thriving nonetheless. A forthcoming report by researchers for Care for the Wild, a British animal-welfare and conservation charity, says that around half the ivory in this market comes from illegally killed elephants. Other studies reveal similar stories elsewhere in the West.

A sharp increase in ivory seizures in recent years also points to a flourishing trade. Meanwhile, rising wealth in Asia is raising the returns from poaching. Prices have leapt from \$200 a kilo in 2004 to \$850-900. New ivory is appearing: you can encase your mobile phone in it if you like. Some scientists think poaching may be as prevalent as it was before the original ban.

#### Citing CITES

The ivory ban is frequently held up as a prime exhibit for CITES, which many conservationists consider a highly successful agreement. Elephant numbers, according to figures from the International Union for the Conservation of Nature, have been rising by 4% a year in the well-protected populations of southern and east Africa, but in central and west Africa no one knows what is going on. Some countries, such as Botswana, home to a quarter of the African total, and South Africa, now have so many elephants that they would like to shoot more of them (and have asked CITES, without success, for permission to sell more ivory).

The only certainty is that the official figures do not reflect the extent of poaching. A huge haul of ivory in 2002, the result of the slaughter of between 3,000 and 6,500 beasts, probably came largely from elephants in Zambia. Yet Zambia had reported the illegal killing of only 135 animals in the previous ten years. Suppose, says Samuel Wasser of the University of Washington, in Seattle, that customs officers capture one-tenth of what is poached (a guess, but a fair guess). That implies that 7.8% of Africa's elephants are killed every year, compared with 7% before the ban. This is a continent-wide average: while pachyderm populations in Botswana and South Africa are booming, elephants elsewhere are faring badly.

In all, CITES bans trade in nearly 1,000 animal and plant species; trade in many more is limited by permits. In testimony to America's House of Representatives on March 5th, William Clark, chairman of the Interpol working group on wildlife crime, said that there were clear signs that illegal trade was increasing. More frequent seizures, of larger volume, have been occurring, even though enforcement capacity has not changed much. The increased seizures, said Mr Clark, reflect larger, more frequent shipments by the sophisticated criminal gangs now involved in the trade.

If trade is on the rise, then the efficacy of trade bans as a conservation measure is at least debatable. To be sure, some bans have worked. Exports of wild birds from four of the five leading bird-exporting countries fell by more than two-thirds between the late 1980s and the late 1990s as a result of CITES-related trade measures, including an American import ban. Tanzania went from exporting 38,000 birds in 1989 to ten a decade later. When trade in most big cats was outlawed, volumes dropped, from 450,000 skins in 1980 to about 45,000 in 1999.

The temporary ban on the trade in the vicuña, a relative of the llama, and its wool is another success. The population had dwindled to 12,000 by the 1960s from maybe 2m at the time of the Spanish conquest of Latin America. Four South American countries imposed a trade ban in 1967; a CITES ban followed in 1975. Later CITES allowed trade in sheared wool on a permit basis. The population has risen to more than 250,000. The ban lasted long enough to give vicuñas time to recover, but not so long that illegal trade became entrenched.

## **Horns and stripes**

However, for other species a ban has merely spawned a thriving illegal trade. After trade in all five species of rhino was banned, the black rhino became extinct in at least 18 African countries. The global rhino population has fallen from 75,000 in the early 1970s to around 11,000 today, and some species are on the verge of extinction. Tigers have fared no better. John Hutton, the director of the World Conservation Monitoring Centre, an arm of the United Nations Environment Programme, says that the 30-year trade ban, "hasn't made a blind bit of difference and the strategy is a failure."

By its nature, the scale of illegal wildlife trade is impossible to know precisely. Legal trade, according to one estimate, was worth around €240 billion (\$300 billion) in 2005, most of it accounted for by timber and fisheries (see table). Illegal trade is big business too.

One guess puts the value of illegal caviar trade at many times that of legal commerce—itsself worth €244m.

The point is not that bans never work. They can, especially in the short term or when species are in dire danger. But their longer-term success depends on three factors. First, they must be coupled with a reduction in demand for the banned products. If a ban helps to shift people's tastes, so much the better. Second, they must not undermine incentives to conserve endangered species in the wild. Third, they have to be supported by governments and citizens in the countries where these species live. If these conditions are not met, bans are unlikely either to reduce trade or to maintain endangered species. They may even make matters worse.

Take demand first. Trade in cat and seal skins, and in parrots, has fallen because consumer campaigns destroyed demand at the same time as trade bans cut the legal supply. That was true of ivory for a time, at least in the West, but rising Asian wealth has been pushing demand up again. Trade is reduced most when demand is sensitive to price: cat and seal skins and parrots fall into this class. Demand is also influenced by fashion (for example, for fake fur). Sometimes, close substitutes are available—such as birds bred in captivity.

For tigers and rhinos, demand has proved more resilient. The trade ban has served to increase the price of horn, but demand has stayed strong—and so, therefore, has the incentive to poach. The resulting illegal trade has proved hard to combat.

Second, consider incentives to conserve. Bans may cut out legal wildlife trade, but some economists say they undermine efforts to conserve animals and plants in the wild and may even create incentives to get rid of them. If people have no economic interest in maintaining wild animals or their habitat, the attraction of converting the land to some other use, such as agriculture, increases. Cornelis van Kooten, an economist at the University of Victoria in British Columbia, points out that the North American bison was doomed because the land it lived on became more valuable for rearing cattle.

In a more modern example, Kenya banned hunting for sport and other consumptive uses of wildlife in the late 1970s. But the competition for land between a rising human population and animals, which can be a danger to crops, life and limb, is intense. Kenya's wild-animal population has fallen by about 70% in the past 30 years, says Michael Norton-Griffiths, an economist in Nairobi.

A recent European Union ban on the import of wild birds has had a similar effect. Ostensibly a veterinary measure to prevent the spread of avian influenza, the ban has bankrupted an Argentine plan to conserve the blue-fronted amazon, a parrot, through sustainable use. "It went from a well policed, sustainably managed operation, to one where there was no incentive to conserve the birds at all," says John Caldwell, who manages CITES's trade database in Britain. As a result, habitat may be stripped out for commercial crops.

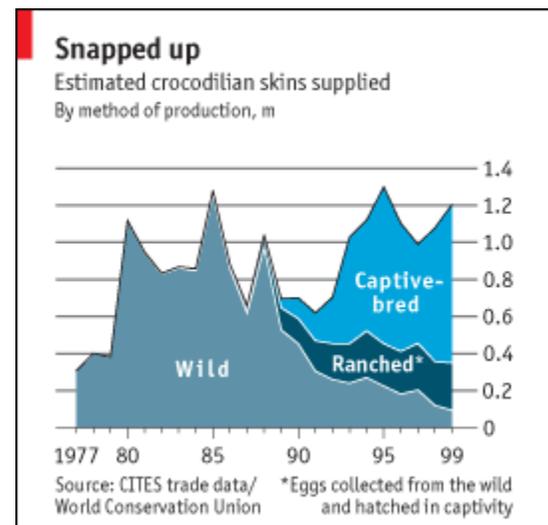
<b>Bill of sale</b>	
Legal global wildlife trade, 2005	
Commodity	Estimated value (€m)
<b>Live animals</b>	
Primates	75
Cage birds	38
Birds of prey	5
Reptiles (inc. snakes and turtles)	31
Ornamental fish	257
<b>Animal products for clothing or ornaments</b>	
Mammal furs and fur products	4,000
Reptile skins	255
Ornamental corals and shells	85
Natural pearls	57
<b>Animal products for food (excl. fish)</b>	
Game meat	365
Frogs legs	40
Edible snails	60
<b>Plant products</b>	
Medicinal plants*	1,000
Ornamental plants	11,000
<b>Fisheries food products (excl. aquaculture)</b>	
	68,600
<b>Timber</b>	<b>154,000</b>
<b>Total</b>	<b>239,500</b>
Source: TRAFFIC	
*2004 estimate	

In addition to removing incentives to conserve, bans also remove a source of income with which to manage conservation. Partly for this reason, some countries have asked CITES for permission to sell elephant ivory, rhino horn or tiger bone (which is available from some captive-bred tiger populations in China). Apart from allowing the two one-off ivory sales and some trophy hunting of elephants, CITES has firmly rebuffed these requests.

One official argument against trade is that a legitimate source of specimens can act as cover for illegal sales. True, but technological advances are likely to make it easier to distinguish legal and illegal goods (see [article](#)). Another is that sales would cut prices and hence stimulate demand. True again, but lower prices would also reduce the incentive to poach. Sales would also improve the incentives for landowners or governments to keep wildlife. Studies based on seizures show no evidence of an effect on illegal trade, says Steven Broad, director of TRAFFIC, a British group that monitors wildlife trade.

Instead of banning trade outright, CITES has sometimes permitted breeding programmes providing an alternative, legal source of animal products. These have been hugely successful in reducing uncontrolled exploitation, for example of crocodilians. The trade in their skins is now largely supplied from alligators, caimans and crocodiles bred in captivity, although a quarter are either ranched or come from the wild (see chart).

How far this could be taken is hard to say. The costs of rearing a tiger in captivity reach thousands of dollars. Killing one in the wild is far cheaper. And for some species, such as tigers and bears, there is anecdotal evidence of a strong consumer preference for wild products. However, no one has yet tried to replace these with products from animals bred in captivity.



There is another economic snag. Although captive breeding of parrots, salmon, deer and crocodiles may save wild populations from over-exploitation, it may leave them undervalued. Captive breeding can erode incentives to conserve species in the wild. If they are to be conserved, money needs to be spent. It is the reinvestment of resource rents, says James MacGregor, of the International Institute for Environment and Development in London, that is important for the sustainable use of a species.

## Paws for thought

The third lot of factors affecting the success of trade bans is the effectiveness of government and social institutions. National enforcement of CITES trade bans, says Heather Sohl of the British arm of WWF, an environmental charity, is vital for them to work. Frequently, however, governments have not kept their promises. Why should this be?

The obvious economic explanation is that the over-exploitation of animals and plants is an example of the "tragedy of the commons". If no one owns the wildlife or the land on which it lives, the behaviour that is individually rational—poaching, clearing land and so forth—may be collective folly. Trade ban or no trade ban, without enforceable property rights, the underlying tragedy remains.

Timothy Swanson, a professor in resource economics at University College, London, argues that

the tragedy lies not in the commons itself but in governments' failure to control access to wildlife and the land it occupies. The reason lies in their "opportunity costs, alternative development priorities, governance problems and resources". He illustrates this in a recent paper in the *International Review of Environmental and Resource Economics*, about the losses of elephants before the CITES trade ban.

When the African elephant's decline was at its worst in the 1980s, four countries were responsible for most of the losses: Sudan, Tanzania, Zaire and Zambia. Other governments, says Mr Swanson, had invested in retaining elephants, through the provision of land and resources for management. The bad four countries had a deliberate policy of retaining open access, in order that elephants be removed. They lost 750,000 elephants in a decade; 30 countries had no aggregate gains or losses and in several populations increased.

Governments, he says, can protect and develop natural resources, such as tin mines and tea plantations. The reason they fail to do so for wildlife and forests is better viewed as a consequence of social choice than of imperfect property rights. There are plenty of examples of successful commons, from Swiss grazing pastures and Japanese forests to fisheries in Maine and Fiji. The problem with wildlife is a lack of social structure or formal rules that govern access and use. If governments do not provide them, wildlife will suffer.

## Breeding obvious

In essence, there are two sorts of possible response to the question of how to conserve endangered species—apart, that is, from doing nothing. One is a command-and-control mechanism: trade bans are examples of these. They can work, but they tend to be inefficient because they fail to take into account the response of human beings to economic incentives. The alternative is to try and harness the incentives that command-and-control ignores. Economic incentives may include removing subsidies for conversion to agricultural land, differential land-use taxes, conservation subsidies, individual transferable quotas and communal property rights. They are all part of a growing economic toolkit for encouraging conservation while minimising the cost of doing so.

Admittedly, markets may not solve every problem. Richard Damania, an economist with the World Bank, says that the reason for saving the snow leopard, say, has nothing to do with market values but reflects intrinsic values, in a similar way to opposition to slavery. Nevertheless, market mechanisms are likely to be useful means to moral ends.

Although CITES arose at a time when command-and-control environmental legislation was popular, parts of the organisation do want to change. Juan Carlos Vasquez, its legal and trade-policy officer, says that policy interventions that do not take into account the underlying causes of wildlife loss have a high risk of failure. "Bans are popular and easy to adopt by enacting legislation, but they do not work everywhere." Mr Broad says that if trade in a species is banned as a last resort, it is a "failure of the system": governments should have intervened earlier using CITES regulatory measures or other incentives.

More successes, such as the temporary ban on trading vicuña products (and its lifting), are needed. Signs of CITES's evolution are evident in its decision to allow some species to be traded under permit, for example in one-off ivory sales.

Such changes will be fought tooth and nail. Trade makes conservationists nervous and animal-welfare charities suspicious. Barbara Maas, who heads Care for the Wild, dismisses the idea that wildlife trade can be used to support conservation as a "fundamentally anthropocentric world view". In Kenya attempts to amend legislation to allow for the wider consumptive use of wildlife

were subject to heavy lobbying by international animal-welfare charities. (One lobby group is said to have threatened to undermine Kenya's tourist trade.)

Similarly, attempts to allocate money to CITES for economic studies of wildlife use and conservation have faced "strong resistance", say people close to the organisation, partly due to pressure from international lobbies. The biggest problem with economic studies, says Mr MacGregor, is that "questions will be asked about the use of funding for a lot of conservation work that is founded on faith." CITES could become a much more powerful tool for conservation. The question is whether it will be allowed to do so.

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