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NOTES

IMPROVING THE EFFICACY OF *CITES* BY PROVIDING THE PROPER INCENTIVES TO PROTECT ENDANGERED SPECIES

INTRODUCTION

Species have been vanishing and coming into existence since the beginning of time. In the past few decades, however, the phenomenon of escalating species extinction has entered the forefront of ecological problems.¹ Increased demand for wildlife coupled with increased human intervention in the environment has brought about this threat to our natural environs and to our very existence.²

Trade in wildlife is the world's third largest illegal trade, behind drugs and firearms, and is worth an estimated five to ten billion dollars a year.³ In an effort to halt the pernicious effects of the illegal trade in endangered species, multiple nations, in 1973, created the Convention on International Trade in Endangered Species of Wild Fauna and Flora ("CITES").⁴ CITES entered into force on July 1, 1975, and currently includes 145 nations.⁵

CITES is arguably the most comprehensive international environmental agreement. Over the last quarter century, CITES has regulated the wildlife trade in the hopes of preserving the world's precious species. The

1. Author Colin Tudge adeptly summarizes the escalating problem as follows:

In scale, . . . the mass extinction that we are now perpetuating is comparable with those of the past; but in speed, the present turmoil far outstrips anything that has happened before. Because it is so much faster, there is no time for animals to adapt; the option of surviving by evolving into something else, which some creatures were able to do in the past, is not available. Because we have interrupted the landscape, too, reducing plains and forests to sequestered pockets, we have removed the option of migration, which in the past enabled many species to escape, for example, the worst of the Ice Ages.

COLIN TUDGE, *LAST ANIMALS AT THE ZOO* 241 (1992).

2. When more than half of all medicines today can be traced to wild organisms, and chemicals from plants are the sole or major ingredient in one-quarter of all prescriptions in the United States, the need and reliance placed upon the world's flora and fauna for human survival becomes painfully obvious. See Endangered Species Coalition, *The Endangered Species Act: a Commitment Worth Keeping*, in *TAKING SIDES: CLASHING VIEWS ON CONTROVERSIAL ENVIRONMENTAL ISSUES* 46, 50 (Theodore D. Golfarb ed., 1993).

3. See Julian Baum & Carl Goldstein, *Asia's Untamed Business*, *FAR E. ECON. REV.*, Aug. 19, 1993, at 22, 23.

4. The Convention on International Trade in Endangered Species of Wild Fauna and Flora, *opened for signature* Mar. 3, 1973, 27 U.S.T. 1087 [hereinafter CITES].

5. See *Convention on International Trade in Endangered Species of Wild Fauna and Flora: List of Parties* (visited Mar. 15, 1999) <<http://www.wcmc.org.uk/CITES/english/parties2.htm>>.

methodology of CITES includes a balancing of ecological and economic interests. Appendix I of the Convention lists the species most threatened with extinction and completely bans the international commercial trade of these species.⁶ Appendix II includes species threatened to a lesser extent and allows these species to enter regulated commercial trade.⁷ Finally, Appendix III includes any species that a party identifies as threatened within its borders and “requires the cooperation of other parties in the control of trade.”⁸

Despite CITES’ seemingly flexible three-tiered approach to species conservation, much debate in recent years has focused on the efficacy and desirability of the Appendix I trade ban. Opponents of the trade ban point to the Convention’s inability to protect some of the world’s most coveted species. The elephant, the rhino, the tiger, and over forty species of parrots are prime examples of CITES’ failed protection under its Appendix I trade ban. Critics of the trade ban further note the multitude of enforcement difficulties associated with the trade ban.

Two clashing ideologies have emerged from the debate. Leading western nations, such as the United States, support the preservationist no-trade ideology that sees trade as the ultimate evil. These nations look to improve the trade ban through greater enforcement, funding, and education. Other nations, led by the southern African nations of Zimbabwe, Botswana, Malawi, Namibia, Zambia, and South Africa, advocate a conservationist ideology that sees sustainable use trade as the ultimate protector of species and habitat.⁹ These nations point to the success of their sustainable use programs to conserve elephants, rhinos, and other animal populations. The two ideologies clash during the listing decision whether to ban trade completely under Appendix I or to allow regulated trade under Appendix II. This clash is precisely the conflict that occurred at the most recent biennial Conference of the Parties in 1997, where the southern African nations sought to move the African elephant to Appendix II and succeeded in obtaining the

6. See CITES, *supra* note 4, 27 U.S.T. at 1092.

7. See *id.*

8. *Id.*

9. This Note uses the term “conservationism” and variations thereof to refer specifically to the environmental approach opposite of preservationism. While some environmentalists refer to “conservationism” and “preservationism” interchangeably, this Note will use the terms in opposition to one another in order to refer to the two opposing ideologies. Conservationism implies *using* wildlife as a resource whose “value can be reaped in the future as well as in the present.” Ike C. Sugg, *Caught in the Act: Evaluating the Endangered Species Act, Its Effects on Man and Prospects for Reform*, 24 CUMB. L. REV. 1, 17 n.77 (1993). Such a notion goes to the heart of sustainable use. See *id.* Preservationism, in contrast, is a denial of use. See *id.* “[P]reservation implies that what is should remain so—unused, unmanaged and unvalued (if people are willing to pay only for use).” *Id.* Preservationism suggests that a wildlife resource should not be used consumptively by humans—even if such consumptive use were the most effective means of saving a species. See *id.*

split-listing of the African elephant.¹⁰

This Note explores the ineffectiveness of CITES' anti-use preservationism to protect the world's most endangered species and proposes the exigency for CITES to adopt sustainable use alternatives as a viable means of preserving species and habitat. Part I of this Note provides an overview of CITES, focusing on its history, purposes, and provisions. Part II analyzes the enforcement difficulties of CITES and the resulting inability to protect highly coveted species. Part III examines why over-exploitation of natural resources occurs and the relative merits of trade restrictions versus sustainable use management to curb species loss. Part IV proposes that CITES nations must recognize and implement sustainable use programs to protect endangered species and habitat.

I. OVERVIEW OF CITES

A. *History of CITES*

The International Union for the Conservation of Nature and Natural Resources drafted CITES in the late 1960s and early 1970s.¹¹ Concluded in March 1973, the Convention entered into force on July 1, 1975¹² and comprised 21 member nations.¹³ CITES requires biennial Conference of the Parties meetings where discussion and periodic revisions of the Convention take place.¹⁴ To date, 145 nations are parties to CITES and share the common goal of preserving endangered species through the regulation of international trade in wildlife.¹⁵

10. See *Summary Report on the 1997 CITES Conference* (visited Mar. 18, 1999) <<http://www.worldwildlife.org/new/traffic/aug97/cites.htm>>. Split-listing refers to placing the elephant populations of the southern African nations with sustainable use programs on Appendix II, while maintaining all other elephant populations on Appendix I.

11. See DAVID S. FAVRE, *INTERNATIONAL TRADE IN ENDANGERED SPECIES: A GUIDE TO CITES* 257 (1989).

12. See CITES, *supra* note 4, 27 U.S.T. at 1087.

13. See Shennie Patel, *The Convention on Trade in Endangered Species: Enforcement and the Last Unicorn*, 18 HOUS. J. INT'L L. 157, 161 (1995).

14. See CITES, *supra* note 4, 27 U.S.T. at 1104. Ten Conferences of the Parties have been convened since the inception of CITES and are listed as follows: Berne, Switzerland, November 1976; San Jose, Costa Rica, March 1979; New Delhi, India, February 1981; Gaborone, Botswana, April 1983; Buenos Aires, Argentina, April 1985; Ottawa, Canada, July 1987; Lausanne, Switzerland, October 1989; Kyoto, Japan, March 1992; Fort Lauderdale, United States of America, November 1994; Harare, Zimbabwe, June 1997. See *The Convention on International Trade in Endangered Species: Conference of the Parties* (visited Mar. 16, 1999) <<http://www.wcmc.org.uk/CITES/english/ecop.htm>>.

15. The current member nations of CITES are as follows, in order of joining CITES: United States of America, Nigeria, Switzerland, Tunisia, Sweden, Cyprus, Ecuador, Chile, Uruguay, Canada, Mauritius, Nepal, Peru, Costa Rica, South Africa, Brazil, Madagascar, Niger, Morocco, Ghana, Papua

B. Purpose of CITES

CITES' ideology appears in the Convention's preamble as follows:

The Contracting States,

RECOGNIZING that wild fauna and flora in their many beautiful and varied forms are an irreplaceable part of the natural systems of the earth which must be protected for this and the generations to come;

CONSCIOUS of the ever-growing value of wild fauna and flora from aesthetic, scientific, cultural, recreational and economic points of view;

RECOGNIZING that peoples and states are and should be the best protectors of their own wild fauna and flora;

RECOGNIZING, in addition, that international cooperation is essential for the protection of certain species of wild fauna and flora against over-exploitation through international trade;

CONVINCED of the urgency of taking appropriate measures to this end.¹⁶

CITES seeks to protect endangered species from over-exploitation resulting from the international trade in wildlife. The preamble, however, reveals that the Convention's purpose attempts to strike a balance between species preservation and the competing economic and recreational demands placed upon wildlife. Paragraph one of the preamble suggests a preservationist approach: that species should be protected for their aesthetic

New Guinea, Germany, Pakistan, Finland, India, Zaire, Norway, Australia, United Kingdom of Great Britain and Northern Ireland, Iran, Paraguay, Seychelles, Guyana, Denmark, Senegal, Nicaragua, Gambia, Malaysia, Venezuela, Botswana, Egypt, Monaco, France, Panama, Togo, Kenya, Jordan, Indonesia, Sri Lanka, Bahamas, Bolivia, Italy, Guatemala, Tanzania, Liechtenstein, Israel, Japan, Central African Republic, Rwanda, Suriname, Zambia, Portugal, China, Argentina, Liberia, Mozambique, Zimbabwe, Cameroon, Belize, Philippines, Colombia, Guinea, Bangladesh, Austria, Malawi, Sudan, Saint Lucia, Thailand, Congo, Belgium, Algeria, Luxembourg, Trinidad, Benin, Netherlands, Honduras, Hungary, Afghanistan, Somalia, Spain, Singapore, Dominican Republic, El Salvador, Burundi, Saint Vincent, Chad, Gabon, Ethiopia, Malta, New Zealand, Vanuatu, Burkina Faso, Poland, United Arab Emirates, Cuba, Brunei Darussalam, Guinea-Bissau, Namibia, Bulgaria, Mexico, Uganda, Russian Federation, Djibouti, Equatorial Guinea, Estonia, Slovakia, Czech Republic, Greece, Barbados, Republic of Korea, Vietnam, Saint Kitts & Nevis, Mali, Romania, Eritrea, Sierra Leone, Côte d'Ivoire, Comoros, Dominica, Belarus, Mongolia, Saudi Arabia, Georgia, Turkey, Latvia, Swaziland, Jamaica, Yemen, Myanmar, Cambodia, Antigua and Barbuda, Uzbekistan, Fiji, Mauritania, and Azerbaijan. See *Convention on International Trade in Endangered Species of Wild Fauna and Flora: List of Parties*, *supra* note 5.

16. See CITES, *supra* note 4, 27 U.S.T. at 1090.

and ecological importance.¹⁷ Paragraphs three and four suggest a conservationist approach: that the protection of species relies upon the efforts of individual peoples and nations in cooperation with the international community.¹⁸ Paragraph two merges the preservationist and conservationist approaches as it suggests a balancing of ecological concerns and economic interests.¹⁹

The provisions of CITES further reveal a balancing of the competing ideologies. Species listed in Appendix I of the Convention are completely banned from commercial trade.²⁰ Appendix I embodies the preservationist notion that trade is the foremost threat to an endangered species' continued existence, and that eliminating the trade will preserve the species. Conversely, species listed in Appendix II are permitted to enter commercial trade as long as such trade complies with the regulations of the Convention.²¹ Appendix II, therefore, adopts the conservationist approach by allowing a sustainable level of commercial trade in endangered species.

C. Provisions of CITES

CITES groups species threatened with extinction into one of three appendices.²² The three levels of protection correlate to the imminence of extinction for a given species.²³ Appendix I includes "all species threatened with extinction which are or may be affected by trade."²⁴ Trade in Appendix I species is "subject to particularly strict regulation."²⁵ Appendix I species are prohibited from commercial trade and can be traded non-commercially only if both the importing and exporting nations satisfy several strict requirements for the issuance of import and export permits.²⁶

17. See Catharine L. Krieps, Comment, *Sustainable Use of Endangered Species Under CITES: Is It a Sustainable Alternative?*, 17 U. PA. J. INT'L ECON. L. 461, 469 (1996).

18. *See id.*

19. *See id.*

20. *See infra* text accompanying notes 22-26.

21. *See infra* text accompanying notes 27-29.

22. *See* CITES, *supra* note 4, 27 U.S.T. at 1092.

23. *See id.* *See generally* Michael J. BEAN & MELANIE J. ROWLAND, *THE EVOLUTION OF NATURAL WILDLIFE LAW* 495-96 (1977) (stating that the three levels of protection correspond to the vulnerability of the species).

24. CITES, *supra* note 4, 27 U.S.T. at 1092. Included in Appendix I are "all rhinos, sea turtles, great apes, great whales, most large cats, and over 600 other endangered species." SARAH FITZGERALD, *INTERNATIONAL WILDLIFE TRADE: WHOSE BUSINESS IS IT?* 321 (1989).

25. CITES, *supra* note 4, 27 U.S.T. at 1092.

26. *See id.* at 1093. The Scientific Authorities of both nations to the trade transaction must first indicate that the trade "will not prove detrimental to the survival of the species." *Id.* An export permit further requires the Management Authority's approval that the traded "specimen was not obtained in contravention of the laws of that State," and that the living specimen will be "prepared and shipped as

Appendix II includes “all species which although not necessarily now threatened with extinction may become so unless trade in specimens of such species is subject to strict regulation in order to avoid utilization incompatible with their survival.”²⁷ In contrast to Appendix I, Appendix II species may be traded for commercial purposes provided that the species was obtained legally in the export State and “such export will not be detrimental to the survival of that species.”²⁸ Appendix II further provides for the regulation of species similar in appearance to other threatened species in order to effectively control the trade of the threatened species.²⁹

Appendix III includes all species that any member nation identifies as threatened within its borders and requires the “cooperation of other parties in the control of trade.”³⁰ The purpose of Appendix III is to facilitate a party’s regulation of native species by requiring export permits from the listing country and a “certificate of origin when the specimen is exported from other countries.”³¹

Listing a species in its proper appendix is fundamental to the effectiveness of the CITES. Unfortunately, the Convention, as written, failed to outline specific guidelines for the listing and down-listing of species. At the First Conference of the Parties, held in Berne, Switzerland, in 1976, the parties established a set of listing criteria known as the Berne Criteria.³² The Berne Criteria, however, provided only a rough guide to listing and suffered

to minimize the risk of injury, damage to health or cruel treatment.” *Id.* The Scientific Authority of the importing nation must be satisfied that the “proposed recipient of a living specimen is suitably equipped to house and care for it,” and that the “specimen is not to be used for primarily commercial purposes.” *Id.* at 1093-94.

27. *Id.* at 1092. Appendix II includes more than 2,300 animal species and over 24,000 plant species. See FITZGERALD, *supra* note 24, at 322.

28. CITES, *supra* note 4, 27 U.S.T. at 1095. Unlike Appendix I, Appendix II only requires an export permit. *See id.*

29. *See id.* at 1092. This provision prevents wildlife traders from illegally circumventing Appendix II by marking threatened species as non-threatened look-alike species. “Appendix II covers all parrots, cats, crocodilians, boas, orchids, and cacti not already listed on Appendix I. This helps custom officers know that any shipments containing these species should be checked. Of the 24,000-plus plants on Appendix II, over 20,000 are orchid species, and 1,500 are cacti. Most of these are listed for look-alike reasons.” FITZGERALD, *supra* note 24, at 322. (citation omitted).

30. CITES, *supra* note 4, 27 U.S.T. at 1092.

31. FITZGERALD, *supra* note 24, at 322. “Canada, for example, lists the walrus in Appendix III because the government regulates trade in the species and wants other countries to refuse imports of walrus from Canada unless they have proper export permits.” *Id.*

32. See John L. Garrison, *The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and the Debate Over Sustainable Use*, 12 PACE ENVTL. L. REV. 301, 312 (1994). The “Berne Criteria” refer to the following two separate resolutions passed by the parties: Conf. 1.1, Criteria for the Addition of Species and Other Taxa to Appendices I and II and for the Transfer of Species and Other Taxa from Appendix II to Appendix I; Conf. 1.2, Criteria for the Deletion of Species and Other Taxa From Appendix I and Appendix II. *See id.* at 306 n.13.

from indefiniteness and vagueness.³³ Several southern African nations were dissatisfied with the unscientific basis for listing decisions and began a push for the adoption of new listing criteria at the 1992 Conference of the Parties in Kyoto, Japan.³⁴ The southern African nations did not succeed in their 1992 bid, but did succeed finally in passing the Fort Lauderdale Criteria at the 1994 Conference of the Parties in Fort Lauderdale, Florida.³⁵ The Fort Lauderdale criteria brought greater clarity and objectivity to the listing process by establishing numerical standards for the listing of species.³⁶ The new criteria tie listing to scientific data rather than to the sympathies of the parties. Consequently, proponents of sustainable use management view the Fort Lauderdale Criteria as a success.³⁷

Using the Fort Lauderdale Criteria as a guide, the parties may add and remove species from Appendix I or II by a two-thirds majority vote of the parties attending the biennial conference.³⁸ In addition, CITES allows a party to take a “reservation” with respect to any species listed in the three appendices.³⁹ A “reservation” effectively exempts the nation from the Convention’s regulation of that species.⁴⁰ The nation then is free to trade with nonparty countries or with member parties claiming the same reservation.⁴¹ The reservation provision was intended to protect nations whose industries

33. See Kevin Eldridge, Recent Development, *Whale for Sale?: New Developments in the Convention on International Trade in Endangered Species of Wild Fauna and Flora*, 24 GA. J. INT’L & COMP. L. 549, 559 (1995).

34. See *id.* at 559 n.54. The southern African nations comprised Botswana, Malawi, Zambia, Zimbabwe, and South Africa. See *id.* at n.54. These nations’ strong disapproval of the Berne Criteria grew out of the movement of the African elephant from Appendix II to Appendix I in 1989. See *id.* See also *infra* text accompanying notes 142-43.

35. See Eldridge, *supra* note 33, at 559-60. The Fort Lauderdale Criteria was adopted in Resolution Conf. 9.24, Criteria for Amendment of Appendices I and II. For a copy of Conf. 9.24, see *Convention on International Trade in Endangered Species of Wild Fauna and Flora* (visited Mar. 18, 1999) <<http://www.wcmc.org.uk/CITES/english/eresol921.htm#924>>.

36. See Eldridge, *supra* note 33, at 560. In Annex 5 of the resolution Conf. 9.24, the Fort Lauderdale Criteria provide in part, the following numerical standards:

[A] species should be placed on Appendix I when one of the following requirements is met or is likely to be met within five years: (a) a species’ area of distribution is less than 10,000 square kilometers; (b) the population of a species is less than 5,000 mature individuals, or when a geographically distinct group in the population (a sub-population) drops below 500 mature individuals; or (c) a species’ population decreases by at least 50% within five years or two generations, whichever is longer.

Eldridge, *supra* note 33, at 560 n.58.

37. See *id.* at 560.

38. See CITES, *supra* note 4, art. XV, para. 2, 27 U.S.T. at 1110.

39. See *id.* art. XXIII, 27 U.S.T. at 1116. Any party may take such “reservation” upon joining CITES or upon amendment of the appendices concerning that species. See *id.*

40. See *id.*

41. See FAVRE, *supra* note 11, at 323.

relied heavily on certain wildlife trade.⁴² The provision, however, creates a significant loophole that can frustrate the efficacy of an Appendix I trade ban.⁴³

Like many international agreements, CITES relies on the individual parties for enforcement. Each country is responsible for implementing and enforcing national legislation in accordance with CITES.⁴⁴ In addition, the Convention requires each party to establish Management and Scientific Authorities responsible for granting export, re-export, and import permits as required by CITES' provisions.⁴⁵ The Scientific Authority plays a substantial role in implementing CITES because it must determine when the export of any species "should be limited in order to maintain that species throughout its range at a level consistent with its role in the ecosystem in which it occurs and well above the level at which that species might become eligible for inclusion in Appendix I."⁴⁶ In practice, establishing an effective Scientific Authority requires significant funding and thus, proves exceptionally difficult for lesser developed countries to implement.⁴⁷

II. DEFICIENCIES OF CITES

A. *Enforcement Problems with CITES*

As one might expect, an international environmental agreement with 145 signatory nations faces a number of enforcement difficulties. The first major obstacle to effective enforcement of the Convention is the pervasive inadequacy of national legislation. Article VIII establishes that each member nation is responsible for enforcement of the Convention's provisions within

42. *See id.*

43. *See id.* at 323-24. For a discussion of laundered elephant tusks, see RAYMOND BONNER, AT THE HAND OF MAN 96 (1993).

44. *See* CITES, *supra* note 4, art. VIII, 27 U.S.T. at 1101.

1. The Parties shall take appropriate measures to enforce the provisions of the present Convention and to prohibit trade in specimens in violation thereof. These shall include measures:

(a) to penalize trade in, or possession of, such specimens, or both; and

(b) to provide for the confiscation or return to the State of export of such specimens.

Id. art. VIII, para. 1 at 1101. Essentially, CITES mandates that member countries "police their own ports of entry and exit, report on trade, and punish violators." FITZGERALD, *supra* note 24, at 15. CITES, however, has an administrative body, the CITES Secretariat, that "is responsible for monitoring its implementation and can bring international pressure to bear on violators by reviewing their infractions and highlighting other compliance problems." *Id.*

45. *See* CITES, *supra* note 4, art. IX, 27 U.S.T. at 1103.

46. *Id.* art. IV, para. 3, 27 U.S.T. at 1095.

47. *See* John B. Heppes & Eric J. McFadden, *The Convention on International Trade in Endangered Species of Wild Fauna and Flora: Improving the Prospects for Preserving Our Biological Heritage*, 5 B.U. INT'L L.J. 229, 238 (1987).

the nation's borders.⁴⁸ Thus, the effectiveness of the overall Convention is determined by the level of national legislation enforcing the Convention's provisions.⁴⁹ When one considers the difficulty encountered by the United States in maintaining adequate funding, personnel, and training to conduct inspections of international shipments, it is no wonder that lesser-developed nations experience infinitely greater difficulties in enforcing the Convention.⁵⁰ The second great obstacle to the enforcement of CITES lies in the ineffective communication between the member nations.⁵¹ One communication problem is the inadequate reporting of international wildlife transactions.⁵² When the parties fail to submit accurate and detailed reports of wildlife transactions, the Secretariat cannot monitor the level of compliance with the Convention.⁵³ Another significant communication problem is the wide variance in each country's national laws enforcing the Convention.⁵⁴ Because each party is responsible for its own enforcement of CITES⁵⁵, national laws differ drastically in their procedures and substantive penalties for noncompliance.⁵⁶ The resulting confusion and procedural loopholes ultimately lead to the illegal circumvention of CITES.

B. CITES' Inability to Protect Highly Coveted Appendix I Species

While the growing membership and support of CITES largely has been viewed as a great triumph toward the international preservation of

48. See CITES, *supra* note 4, 27 U.S.T. at 1101.

49. See Patel, *supra* note 13, at 187. At the Ninth Conference of the Parties in November 1994, the Secretariat revealed that 27 out of 81 member nations surveyed had severely inadequate national legislation. See *id.* at 186 n.191. Moreover, only 15 of the 81 nations surveyed met CITES requirements for implementation. See *id.*

50. See Heppes & McFadden, *supra* note 47, at 237-40. See also Meena Alagappan, Comment, *The United States' Enforcement of the Convention on International Trade in Endangered Species of Wild Fauna and Flora*, 10 NW. J. INT'L L. & BUS. 541 (1990) (discussing the difficulties and deficiencies of the United States' enforcement of CITES). As of 1989, the United States only staffed "60 specially trained port inspectors to check the 90,000-plus shipments of wildlife and wildlife products that enter and leave the country annually, an overload that enables many illicit items to slip through." FITZGERALD, *supra* note 24, at 23.

51. See Patel, *supra* note 13, at 188-89.

52. See *id.*

53. See *id.* Such reports would greatly aid the assessment of the strengths and weaknesses of the Convention. See *id.*

54. See *id.*

55. See *supra* text accompanying note 44.

56. See Patel, *supra* note 13, at 188. The lack of uniformity in national legislation inevitably leads to noncompliance with CITES as "wildlife officials are unable to distinguish between procedural compliance and illegal circumvention." *Id.* A prime example of illegal circumvention occurs when the illegal trade of a product is shifted from a country imposing severe penalties to another country with less severe or non-existent penalties for the same activity. See *id.*

endangered wildlife, beneath the surface lies the Convention's disturbing inability to protect some of the world's most coveted and endearing species. The elephant, the rhino, the tiger, and over forty species of parrots have experienced precipitous declines in numbers despite receiving maximum protection under Appendix I. CITES' inability to protect these species through its trade ban directly calls into question the efficacy of its command-and-control prescription for saving endangered species.

1. *The African Elephant*

The fate of the elephant over the last quarter century is surely one of the most publicized and tragic events in wildlife protection.⁵⁷ In 1979, an estimated 1,300,000 African elephants roamed free; by 1989 the number fell to 609,000.⁵⁸ In response to the sharp decline in elephant populations,

57. For recent articles discussing the plight of the African elephant despite CITES protection, see generally John L. Garrison, Comment, *The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and the Debate Over Sustainable Use*, 12 PACE ENVTL. L. REV. 301 (1994); Andrew J. Heimert, Note, *How the Elephant Lost His Tusks*, 104 YALE L.J. 1473 (1995); and Bill Padgett, Note, *The African Elephant, Africa, and CITES: The Next Step*, 2 IND. J. GLOBAL LEGAL STUD. 529 (1995).

58. See David Concar & Mary Cole, *Conservation and the Ivory Tower*, NEW SCIENTIST, Feb. 29, 1992, at 29, 30. Other statistics reveal that from 1979 to 1989, Central Africa's elephant populations dropped from 497,400 to 274,800 and East Africa's from 546,650 to 154,720. See Randy T. Simmons & Urs P. Kreuter, *Herd Mentality: Banning Ivory Sales Is No Way to Save the Elephant*, POL'Y REV., Fall 1989, at 46. In Kenya alone, despite the ban on elephant hunting, the elephant population fell from 65,000 in 1979 to 19,000 in 1989. See *id.* These statistics revealed that "[h]alf of the continent's elephants were being killed every eight to ten years, and the losses in East Africa reached 17 percent per year." JONATHAN S. ADAMS & THOMAS O. MCSHANE, *THE MYTH OF WILD AFRICA* 63 (1992). During this 10 year interval, the price of ivory increased fivefold due in great part to the increased demand for ivory from the strengthened Japanese economy. See *id.* at 62. "Middlemen, mostly based in Hong Kong, paid Africans only 10 to 30 percent of the price for raw ivory; even so, the money—a fortune in most of rural Africa—provided a tremendous incentive to hunt elephants." *Id.* In fact, during the 1980s, the amount of ivory leaving Africa annually grew to about 900 metric tons—a figure vastly in excess of the approximately 200 metric tons leaving Africa annually during the 1950s. See *id.* at 63. As more and more large, male elephants were killed for their larger tusks, the "tusks being exported became smaller and smaller, meaning that increasing numbers of younger elephants had to be killed to supply the same amount of ivory." *Id.*

It is also important to mention that the veracity of both the 1979 and 1989 census figures for the African elephant rests on very rough approximations. See *id.* at 71. "Elephants . . . inhabit such a vast area that making an accurate count is economically and technically impossible. Any estimate of the number of elephants in Africa is no more than a guess." *Id.* at 71. In addition, authors Adams and McShane point out that elephant census figures are "magnets for money" for environmental management programs and groups. See *id.* "The elephants' doom is money in these groups' pockets." *Id.* at 76. Thus, the lure of money from censuses tends to overestimate decreases in elephant populations, and underestimate increases in populations. See *id.* at 71. A prime example of the import attached to inexact census data occurred in Malawi after the 1989 census data were released. During the 1989 census, one of the census takers consistently erred in his aerial counting and overestimated the number of elephants in Malawi's Kasungu National Park by nearly 1,500 elephants. See *id.* at 75. The 1979 census data published a figure of 4,000 to 4,500 elephants for Malawi. See *id.* The error was

CITES, in 1989, moved the African elephant from Appendix II to Appendix I.⁵⁹ Despite the Appendix I ban on international trade in ivory, the demand for ivory continues to be met by the black market traffic in ivory.⁶⁰ The two primary threats to the elephant's continued existence are poaching and habitat destruction.⁶¹

2. *The Rhino*

The fate of the rhino is perhaps the single greatest tragedy under CITES. There are two species of rhino native to Africa—the black rhino, a shrub browser, and the white rhino, a grasslands grazer.⁶² While 100,000 black rhinos roamed the African savannas in 1960, fewer than 2,500 exist today.⁶³ The white rhino, traditionally the rarer species, has fared slightly better than the black rhino. In 1920, the southern subspecies totaled only 60, but currently has rebounded to nearly 7,000.⁶⁴ The northern subspecies totaled 1,000 in 1960, and dropped to just 16 by 1984.⁶⁵ Currently the northern white rhino population is estimated at 30.⁶⁶ All rhino species have been listed in Appendix I since 1977.⁶⁷ The maximum protection of Appendix I, however, has failed to “arrest the decline of rhinoceros populations.”⁶⁸ For example,

discovered and published in scientific literature in 1987, but this did not stop environmentalists from proclaiming that Malawi's elephant population had suffered a devastating loss of 50% of its elephants when the corrected 1989 figure of 2,300 elephants was reported. *See id.* An article even appeared in *Time* magazine, attributing the decline to increased poaching. *See id.*

59. *See infra* text accompanying notes 132-41.

60. Since the move to Appendix I in 1989, nearly 100 tons of ivory have been seized. *See Sustainable Arguments*, *ECONOMIST*, June 21, 1997, at 83. *See also Still in Business: the Ivory Trade in Asia, Seven Years After the CITES Ban* (visited Mar. 18, 1999) <http://www.traffic.org/publications/summaries/summary_ivorytrade.html>.

61. *See BONNER, supra* note 43, at 91. The seemingly divergent threats of poaching and habitat destruction actually are quite related to each other. An adult elephant eats as much as 300 pounds of food per day, which requires, in a dry climate, a range of up to 1,000 square miles. *See ADAMS & MCSHANE, supra* note 58, at 79. As the population of African peoples increases along with their increased reliance on the cultivation of land, African people often compete with elephants for scarce natural resources. As a result, Africans many times resort to poaching elephants in order to protect their crops from encroaching elephant herds. *See Pest Control: Jumbo Problems*, *ECONOMIST*, Mar. 15, 1997, at 83.

62. *See Donna Rosenthal, Showdown in Zimbabwe: In the Nation That Once Held Africa's Greatest Concentration of Black Rhinos, Private Citizens Struggle to Save the Last of the Animals*, *INT'L WILDLIFE*, Nov.-Dec. 1996, at 28.

63. *See id.*

64. *See id.* The increase in the southern subspecies of white rhino is largely attributable to the conservation efforts of South Africa. *See id.*

65. *See id.*

66. *See id.*

67. *See Rhino Progress? The Response to CITES Resolution Conf. 9.14* (visited Mar. 18, 1999) <http://www.traffic.org/publications/summaries/summary_rhino.html>.

68. *See id.*

the world's black rhino population suffered more than a 95 percent decline from 1970 to 1993.⁶⁹ No more than 12,500 rhinos exist in the wild today, with 80 percent found in Africa.⁷⁰

Poaching is responsible for the devastation to rhino populations. Rhino horn is a prized commodity in traditional medicinal markets of the Far East.⁷¹ Chinese folklore, dating back more than 2,000 years, values powdered rhino horn as an aphrodisiac⁷² and as a treatment for such ailments as high fevers, convulsions, and failing vision.⁷³ In addition, markets centered in North Yemen demand rhino horn to craft ornate dagger handles symbolizing masculine powers.⁷⁴

3. *The Tiger*

The tiger, too, has not fared well despite maximum protection under CITES.⁷⁵ Two hundred years ago eight subspecies of tigers spanned across Asia, Eastern Europe, and the islands of Bali and Java.⁷⁶ Today the Caspian tiger of Central Asia and the Javan and Balinese tigers are extinct.⁷⁷ The World Wide Fund for Nature estimates that only 5,100 to 7,500 tigers remain today—a 95 percent decrease since the beginning of the century.⁷⁸ The tiger,

69. *See id.*

70. *See id.*

71. *See* FITZGERALD, *supra* note 24, at 24. The value of rhino horn on the black market is estimated at \$8,000 per pound, making the average rhino horn (10 pounds) worth about \$80,000. *See* Simmons & Kreuter, *supra* note 58, at 48. A typical poacher can make as much as \$500 for killing a rhino; an amount that exceeds many Africans yearly income. *See* Liz Sly, *Poaching Ban Reconsidered as Rhinos Flirt with Extinction*, PHOENIX GAZETTE, Nov. 24, 1994, at A30.

72. *See* Simmons & Kreuter, *supra* note 58, at 48.

73. *See* Rosenthal, *supra* note 62. Other parts of the rhino are also used in traditional Chinese medicine. For example, "rhino toenail is used to reduce fever, blood is used as a tonic, and the hide is believed to cure skin ailments." Christine Crawford, Note, *Conflicts Between the Convention on International Trade in Endangered Species and the GATT in Light of Actions to Halt the Rhinoceros and Tiger Trade*, 7 GEO. INT'L ENVTL. L. REV. 555, 561 (1995).

74. *See* Rosenthal, *supra* note 62. The illegal trade of rhino into North Yemen peaked during the late 1980s when the Middle East enjoyed great oil profits. *See id.* Increased North Yemeni enforcement of the trade ban combined with decreasing oil profits has reduced the market for rhino-horn daggers. *See id.* *See also* *On a Knife's Edge: The Rhinoceros Horn Trade in Yemen* (visited Mar. 18, 1999) <http://www.traffic.org/publications/summaries/summary_yemen.html> (discussing the continued difficulties of halting the rhino dagger trade in Yemen).

75. *See generally* Crawford, *supra* note 73, (discussing Taiwanese and Chinese trade in tiger and the difficulty of CITES enforcement); *Tiger Progress? The Response to CITES Resolution Conf. 9.13* (visited Mar. 18, 1999) <http://www.traffic.org/publications/summaries/summary_tiger.html> (discussing the poor response to the tiger resolution adopted at the 1994 Conference of the Parties).

76. *See* Mel Sunquist Anup Shah, *What I've Learned about Tigers*, INT'L WILDLIFE, Nov. 21, 1997, at 12, 14.

77. *See* Michael 't Sas-Rolfes, *Who Will Save the Wild Tiger?* (visited Mar. 18, 1999) <<http://www.perc.org/ps12.htm>>.

78. *See* Luke Phillips, *Kuwait's "Aristocat" Tigers Move to Luxury New Home*, AGENCE

like the elephant and rhino, is a victim of ubiquitous poaching.⁷⁹ Tiger products are highly demanded in the Far East for their medicinal and aphrodisiac value.⁸⁰ Tiger bone is believed to cure ulcers, rheumatism, fever, and burns.⁸¹ Tiger penis is believed to work as an aphrodisiac.⁸² A wild tiger killed in the Russian Far East fetches as much as \$10,000 on the Russian black market.⁸³ Despite widespread publicity and action, the Appendix I ban on the tiger trade has been unable to thwart the pernicious effects of the illegal trade.⁸⁴

4. *The Parrot*

Forty-two species of parrots are listed on Appendix I.⁸⁵ During the 1980s, the United States imported about 270,000 parrots a year, plus an additional 150,000 smuggled parrots, making the United States the largest importer of wild-caught parrots.⁸⁶ The U.S. parrot trade generates an estimated \$300 million in annual profits.⁸⁷ This lucrative trade in parrots has decimated the populations of wild parrots.⁸⁸ Parrots are sold on the black market in the United States for as much as \$20,000 a piece.⁸⁹ Equally disturbing are the estimates that for every parrot smuggled across the Mexican border, another

FRANCE-PRESSE, Sept. 19, 1998, available in 1998 WL 16602697.

79. In India, one man, Maharaja of Surguja, claimed to have killed 1,150 tigers. See Sunquist Anup Shah, *supra* note 76, at 15. Poaching in India continues to be a problem today. In 1995 alone, poachers killed an estimated 73 tigers, and shipped their parts and carcasses into China. See *id.* at 18.

80. See FITZGERALD, *supra* note 24, at 39.

81. See Sunquist Anup Shah, *supra* note 76, at 18. The use of tiger bone is well established in several Asian Cultures. See 't Sas-Rolfes, *supra* note 77. In fact, traditional Chinese medicine's use of tiger bone dates back at least as far as 500 A.D. See *id.*

82. See FITZGERALD, *supra* note 24, at 39. Other tiger parts also have traditional uses. Tiger blood is thought to build the constitution and strengthen willpower. See *id.* Tiger meat is viewed as a delicacy to some Chinese. See 't Sas-Rolfes, *supra* note 77. Tiger skin is valued for display purposes. See Crawford, *supra* note 73, at 561.

83. See Sunquist Anup Shah, *supra* note 76, at 18.

84. See 't Sas-Rolfes, *supra* note 77.

85. See DORENE BOLZE, THE WILD BIRD TRADE: WHEN A BIRD IN THE HAND MEANS NONE IN THE BUSH 10 (1992). "It is testament to the failing of CITES that despite listing and attempted regulation, so many parrot species are now threatened by the international trade." *Id.* In fact, all 337 parrot species, except for two captive-bred species, are listed on the CITES' appendices. See *id.*

86. See *id.* at 4. "Members of the parrot family (Psittacidae) are among the most popular pets in the world, perhaps second only to dogs and cats." FITZGERALD, *supra* note 24, at 157. In fact, "people have been teaching parrots to 'talk' for over 2,000 years." *Id.*

87. See *id.*

88. For example, one parrot species, the hyacinth macaw of South America, has plummeted from an estimated 100,000 in 1950, to only 2,500 to 5,000 in the late 1980s, "primarily because of the bird trade." See *id.* at 6.

89. See Simmons & Kreuter, *supra* note 58, at 48. The illegal parrot trade in South America is often more lucrative than the illegal drug trade. See *id.*

ten die in the attempt to reach prospective buyers.⁹⁰ Regrettably, the Convention has failed to control the devastating wild bird trade, especially in parrots.⁹¹ “Few exporting countries have the resources to issue permits based on a determination of a species’ status in the wild, to enforce CITES regulations, or to check the accuracy of the required documents and permits.”⁹² As a result, the bird trade “is rife with illegal activity.”⁹³ “In most cases, wild birds are traded under the guise of legality with falsified documentation.”⁹⁴ One estimate suggests that as many as one-fourth to one-third of all parrots imported into the United States are accomplished with falsified documentation.⁹⁵ “Even the US, which has some of the most protective wildlife laws and sophisticated enforcement capabilities, has been unable to effectively control the wild bird trade across and within its borders.”⁹⁶

Another tragedy of the parrot trade is that the rural people who trap the birds “derive the least economic benefit from the trade, receiving only about one to two percent of the retail price.”⁹⁷ The rural trappers capture the birds from communal lands, and do not own the rights to the land or to the birds. Thus, the birds are “free for the taking and there is little incentive to manage the harvest for long-term production.”⁹⁸

90. See BOLZE, *supra* note 85, at 8. The primary method for capturing parrots in South America entails “cutting down the nesting tree or hacking open the nest cavities in order to remove all the chicks.” *Id.* at 7. This process kills at least 10% of the young. See *id.* See also RON THOMPSON, THE WILDLIFE GAME 180 (1992) (describing the destruction of nesting sites). Parrots also are killed during transport due to “overcrowding, poor ventilation, dehydration, poor nutrition, and extreme changes in temperature.” BOLZE, *supra* note 85, at 8. Still more parrots die during quarantine, primarily from infectious diseases. See *id.*

Much like the illegal parrot trade, the illegal trade in baby chimpanzees for use as pets results in similar devastation to the species through capture and transit. According to primatologist Alison Cronin who runs the Monkey World ape sanctuary in Dorset, England, “[i]n order to capture the babies, the poachers slaughter their mothers and other dominant chimpanzees. . . . Usually they are crammed into wooden crates and brought to Europe by ships. For every baby chimp that gets here, at least 10 others die.” Amberin Zaman, *Chimp Poachers Find Market in Turkey Despite International Ban, Lucrative Primate Trade is Flourishing*, L.A. TIMES, Oct. 3, 1998, at A2.

91. See BOLZE, *supra* note 85, at 10.

92. *Id.* at 11.

93. *Id.* at 12.

94. *Id.*

95. See *id.* “Typically the bird’s country of origin is purposefully misidentified, the type and number of each species in the shipment are incorrectly listed, birds are falsely claimed to be captive-bred, and the commercial nature of the shipment is obscured.” *Id.*

96. *Id.* at 13. “The US, for instance, has never sufficiently financed the agencies that enforce and implement its laws affecting the bird trade. Only 65 inspectors are on duty in the US, and they are able to inspect only one quarter of the annual 83,000 shipments.” *Id.*

97. *Id.* at 9. In Mexico, trappers only receive \$19 for providing a parrot that is later sold for as much as \$3,000. See *id.*

98. *Id.*

III. TRAGEDY OF THE COMMONS, TRADE BANS, AND SUSTAINABLE USE

A. *Tragedy of the Commons*

The rapid over-exploitation of commercially valuable wildlife is not a recent phenomenon. The plights of the buffalo and passenger pigeon are prime examples. At the time of the Spanish explorers, a “brown sea” of 75 million buffalo roamed the western plains of North America.⁹⁹ By 1895, only 800 buffalo remained, most in captivity or on private land.¹⁰⁰ The passenger pigeon suffered a similar fate. It went from being one of the most numerous species of bird on earth, at approximately three billion, to extinction by 1914.¹⁰¹ Massive market hunting caused the bird’s extinction.¹⁰²

Social scientists have tried to explain why certain species are decimated and others are thriving. On its face, it seems quite paradoxical that the American buffalo was driven to near extinction but not the “Hereford, the Angus, or the Jersey cow.”¹⁰³ The crucial distinction lies in the inherent difference between public and private ownership rights.¹⁰⁴

In 1968, Professor Garrett Hardin coined the phrase “tragedy of the commons” to explain how a lack of clearly defined property rights leads to the over-exploitation of a resource.¹⁰⁵ If a resource is held for public use in the commons, then individuals acting rationally will overconsume the public resource. The essential problem is the inability to exclude others from the consumption of the resource.¹⁰⁶ The rational individual knows that what he

99. See Robert J. Smith, *Resolving the Tragedy of the Commons by Creating Private Property Right in Wildlife*, CATO J., Fall 1981 at 439, 442.

100. See *id.* Smith reveals the similar tragedy of the sea turtle in the Carribean. See *id.* at 461. Before the Europeans arrived in the Caribbean, the green turtle, *Chelonia mydas*, numbered close to 50 million. By 1620, over-exploitation reduced green turtle populations so much that the Bermuda assembly prohibited their killing. See *id.* at 461-62. Presently green turtles number only a few thousand in the Caribbean and approximately 400,000 worldwide. See *id.* at 462.

101. See *id.*

102. See *id.*

103. *Id.* at 443. Smith further points out that the heath hen went extinct, the prairie chicken nearly went extinct, but other chickens such as the Rhode Island Red, the Leghorn, and the Barred Rock are thriving despite not being native to North America. See *id.*

104. See Ike C. Sugg, *To Save an Endangered Species, Own One*, WALL ST. J., Aug. 31, 1992, at A10.

105. See Garrett Hardin, *The Tragedy of the Commons*, 162 SCIENCE 1243, 1243 (Dec. 1968).

106. See Harold Demsetz, *Toward a Theory of Property Rights*, 57 AM. ECON. REV. 347, 354 (1967). Demsetz outlines the essential distinction by asserting that communal ownership is:

[A] right which can be exercised by all members of the community. . . . Communal ownership means that the community denies to the state or to individual citizens the right to interfere with any person’s exercise of communally-owned rights. Private ownership implies that the community recognizes the right of the owner to exclude others from exercising the owner’s private rights.

Id.

or she does not consume today may very well be consumed by someone else tomorrow.¹⁰⁷ The end result is that public ownership often results in “overuse, waste, and extinction; but private ownership results in sustained-yield use and preservation.”¹⁰⁸

Ocean fisheries provide a classic example of the tragedy of the commons. According to free market environmentalists Terry L. Anderson and Donald R. Leal:

The rule of capture dominates: any fish left by one fisherman is available to another. Rather than leaving fish to grow and reproduce, the incentive is to harvest the stock before others do. With each fisherman facing this incentive, the end result is for the fish stock to be over-exploited.¹⁰⁹

Private property rights, on the other hand, create incentives for private owners to preserve their resources. The rule of capture no longer applies because the private owner is able to exclude others from consuming his or her resources via enforceable private property rights. Consequently, the rational owner considers the long-term capital value of the resource.¹¹⁰ The decision to consume the resource today is weighed against the costs of not having it tomorrow or ten years from now. The private owner thus, in self-interest, will opt to manage the resource on a sustainable basis.¹¹¹ This difference is precisely why the buffalo nearly went extinct, but the Jersey cow prospered.¹¹²

It is important to note that the over-exploitation of public resources and the sustainable use of private resources both result from rational behavior by

107. Smith posits a simple question that exemplifies the analysis: “Which would be picked at the optimum ripeness, blackberries along the roadside or blackberries in a farmer’s garden?” Smith, *supra* note 99, at 444.

108. *Id.*

109. TERRY L. ANDERSON & DONALD R. LEAL, *FREE MARKET ENVIRONMENTALISM* 122 (1991). Anderson & Leal further state the following:

[O]pen access to the resource results in lower than optimal (if not total depletion of) stock and an over-investment in fishing effort. . . . Being the first to exploit the fishery allows the highest returns, because the costs of finding and catching fish will be the lowest. This race to the best fishing grounds is often manifest in the form of over-capitalization in radar, sonar, faster boats, and larger nets. The result is lower profits for the too many fishermen investing in too much capital to catch too few fish.

Id. at 123. See generally Ralph Townsend & James A. Wilson, *An Economic View of the Tragedy of the Commons*, in *THE QUESTION OF THE COMMONS* 311 (Bonnie J. McCay & James M. Acheson eds., 1987) (discussing the over-exploitation of fisheries).

110. See Smith, *supra* note 99, at 457.

111. See *id.*

112. See *id.*

the consumer.¹¹³ It is not a debate between a consumer's rational and irrational behavior.¹¹⁴ "In both cases we are witnessing rational behavior, for resource users are acting in the only manner available to them to obtain any economic or psychological value from the resource."¹¹⁵ Consequently, it is a mistake to believe that the overuse of public resources can be changed through education or persuasion.¹¹⁶

B. Trade Bans

Tragedy of the commons analysis clearly suggests that the solution to the over-exploitation of the commons is the creation of private property rights in the commons.¹¹⁷ This, however, is not the traditional approach to solving commons problems. The traditional approach, as exemplified by CITES, is the regulation of public resources through access and trade restrictions.

CITES Appendix I ban on commercial trade attempts to reduce the supply and demand for endangered species. In theory, a ban on the international trade of a resource could reduce the supply of the resource by deterring suppliers from incurring the additional risks and costs associated with supplying an illegal good.¹¹⁸ The practical effect of a trade ban, however, is the creation of black market trade. As the costs of supplying the good increase, so too does the price of the good, which induces persons best suited at evading the law to engage in the black market supply of the good.¹¹⁹ Consequently, as long as people demand a good and are willing to pay a high price for it, the black market will find a way to meet demand.¹²⁰

In theory, an effective trade ban also must influence the demand for a good. People must decide that they no longer want the banned good either because they do not want to incur the addition costs associated with obtaining an illegal good, or because they are morally persuaded that the good should not be traded.¹²¹ One difficulty with eliminating demand for a good,

113. *See id.* at 456.

114. *See id.*

115. *Id.*

116. *See id.* As Smith points out, the attempt to create a new environmental ethic will have little effect upon the person who relies on using a resource for his or her survival and must do so before someone else does. *See id.*

117. *See generally* SCOTT LEHMANN, *PRIVATIZING PUBLIC LANDS* (1995) (advocating privatization as a means of improving land management).

118. *See* Heimert, *supra* note 57, at 1492. The risks of supplying an illegal good include the risks of detection, prosecution, and punishment. *See id.* The increased costs of supplying an illegal good include costs incurred in evading the law and costs incurred from confiscation of the good. *See id.*

119. *See* Simmons & Kreuter, *supra* note 58, at 48.

120. *See id.*

121. *See* Heimert, *supra* note 57, at 1491.

especially a wildlife resource, is that people desire to own rare and exotic goods regardless of their illegality.¹²²

In practice, the ban on the international trade of ivory and rhino horn has failed to eliminate the demand for them. The ban, however, accomplishes three things: “prices increase, people with a comparative advantage at avoiding detection—usually criminals and corrupt public officials—take over the formerly legal market, and, in the case of a resource owned in common, the resource disappears.”¹²³ Thus, it becomes apparent that the incentive to engage in black market trade coupled with the many enforcement difficulties greatly reduces the effectiveness of a trade ban to preserve endangered wildlife.

C. Sustainable Use

In response to the deficiencies inherent in the preservationist no-trade ideology, a new breed of environmentalism has emerged that advocates private property rights and legalized trade in endangered wildlife. The new conservationist approach emphasizes the need to create a system of property rights in wildlife that overcomes the tragedy of the commons and leads to the sustainable use of natural resources.¹²⁴ Sustainable use is the cornerstone of conservationism and implies using natural resources “at a rate within their capacity for renewal.”¹²⁵ Conservationists attempt to create the necessary economic incentives for people to act as “careful stewards rather than careless exterminators.”¹²⁶ Conservationists realize that the best way to preserve wildlife is to create a system where wildlife can pay its own way.

1. CITES and the Debate Over Sustainable Use

As discussed above, the Convention’s preamble and provisions include notions of both preservationism and conservationism.¹²⁷ The Appendix I ban

122. *See id.*

123. Simmons & Kreuter, *supra* note 58, at 48.

124. *See supra* note 9 for a discussion of the difference between conservationism and preservationism.

125. John G. Robinson, *The Limits to Caring: Sustainable Living and the Loss of Biodiversity*, CONSERVATION BIOLOGY, Mar. 1993, at 20, 23.

126. *See* Simmons & Kreuter, *supra* note 58, at 48. Simmons and Kreuter reveal the fundamental distinction between preservationism and conservationism in the context of the ivory trade: “proponents of a global ban on ivory trade are asking the wrong question. They ask, ‘How do we stop the ivory trade in order to remove the incentive for poaching?’ They should ask, ‘How do we make the elephants valuable enough that people have an incentive to be careful stewards rather than careless exterminators?’” *Id.*

127. *See supra* text accompanying notes 20-21.

on commercial trade is clearly a preservationist regulation. On the other hand, Appendix II represents a conservationist regulation because it permits commercial trade that is performed on a sustainable basis.¹²⁸ Thus, the decision to list a species on Appendix I or II often results in a clash between the two ideologies. While there are general guidelines for the listing of a species on Appendices I and II (the Fort Lauderdale Criteria),¹²⁹ the signatory parties ultimately make the listing decision by a two-thirds majority vote at the biennial Conference of the Parties.¹³⁰ Moreover, the parties are not bound to accept even compelling evidence meeting the Fort Lauderdale Criteria for listing.¹³¹ Therefore, the voting process often turns on the parties' preferred environmental ideology.

The best example of the CITES debate between the preservationist and conservationist ideologies is the story of the African elephant. The African elephant was placed on Appendix II in 1977.¹³² By 1989, populations of African elephants in eastern African nations had plummeted,¹³³ and the United States and several European nations pushed for the international ban on ivory trade.¹³⁴ With the support of the United States, Europe, and the eastern African nations, CITES voted to move the African elephant from Appendix II to Appendix I.¹³⁵ The southern African nations of Zimbabwe,

128. See CITES, *supra* note 4, 27 U.S.T. at 1093. Trade in Appendix II species is sustainable if it "will not be detrimental to the survival of that species." *Id.*

129. See text accompanying notes 32-37.

130. See CITES, *supra* note 4, 27 U.S.T. at 1110.

131. See Stephen L. Kass, *The Economic Impact of Wildlife Protection Measures Was a Prevailing Theme at the Most Recent Biennial Conference on Endangered Species Worldwide*, NAT'L L.J., Aug. 11, 1997, at B4.

132. See FITZGERALD, *supra* note 24, at 62. The Asian elephant has been listed on Appendix I since 1975. See ADAMS & MCSHANE, *supra* note 58, at 63.

133. From 1979 to 1989, Central Africa's elephant population dropped from 497,400 to 274,800 and East Africa's from 546,650 to 154,720. See *supra* notes 57-58 and accompanying text for a discussion of the decrease in elephant populations from 1979 to 1989.

134. See Heimert, *supra* note 57, at 1478-79. One of the key impetuses for the decision to move the African elephant to Appendix I was a study by the Ivory Trade Review Group released five months before the 1989 Convention of the Parties meeting in Lausanne, Switzerland. See ADAMS & MCSHANE, *supra* note 58, at 63. An independent panel of experts conducted The Ivory Trade Review Group study and reported on the dwindling elephant population trends and the effects of the ivory trade. See *id.* at 62. Although the report did not endorse banning the international trade in ivory by moving the elephant to Appendix I, many of the CITES nations relied on the report to reach their decisions to ratify the move to Appendix I. See *id.* at 63. Prior to the release of the report, many conservation groups endorsed the "split-listing" of the African elephant—a solution where the elephant would be listed on Appendix I in the countries where elephant populations were most threatened, and would remain on Appendix II in countries that were successfully managing their elephant populations. See *id.* In practice, this meant that elephant populations of east, west, and central Africa would be moved to Appendix I, and the southern African elephants would remain on Appendix II due to their successful management schemes. See *id.* at 63-64.

135. See *id.*

Zambia, Botswana, Malawi, and South Africa opposed the ivory ban because their elephant populations were increasing or remaining stable.¹³⁶ These countries were making money from the sale of ivory and elephant hides and using the proceeds to aid local people and conservation programs.¹³⁷ Despite the efforts of the southern African nations to convince CITES of the merits of their programs, CITES parties voted to move the elephant to Appendix I.¹³⁸ The southern African nations took reservations¹³⁹ to the up-listing, but no other significant ivory-purchasing nations followed suit.¹⁴⁰ Consequently, the southern African nations had little opportunity to engage in legal ivory trade.¹⁴¹

The ivory debate resurfaced at the 1992 Conference of the Parties in Fort Lauderdale, Florida. The group of countries favoring managed ivory trade, led by Zimbabwe, proposed allowing countries with effective sustainable use programs to trade ivory internationally.¹⁴² The Conference of the Parties, however, rejected the proposal.¹⁴³

At the 1997 Convention of the Parties in Harare, Zimbabwe, the southern African nations of Zimbabwe, Botswana, and Namibia proposed that the African elephant be down-listed to Appendix II due to their increasing populations.¹⁴⁴ These countries argued that elephant herds were becoming so large that “they were overrunning communities, destroying crops and injuring people.”¹⁴⁵ In addition, the three countries argued that they should be

136. See BONNER, *supra* note 43, at 91-92; ADAMS & MCSHANE, *supra* note 58, at 64, 66. Zimbabwe’s elephant population grew from 30,000 in 1979 to 50,000 in 1993. See BONNER, *supra* note 43, at 92. From 1983 to 1993, Botswana successfully doubled its elephant population to about 56,000. See *id.* at 91. See also Simmons & Kreuter, *supra* note 58, at 46 (from 1979 to 1989, Botswana’s elephant population grew from 20,000 to 51,000). In South Africa, the elephant population remained stable. See BONNER, *supra* note 43, at 92.

137. See BONNER, *supra* note 43, at 92.

138. “The refusal to recognize regional differences in Africa resulted in part from the popular perception of Africa as a single entity, where a simple solution would work. Some people in the conservation community understood well the subtleties of the ivory trade, but the general public’s overwhelming, emotional response to the perceived crisis—a response fueled by lurid advertising campaigns—made anything less than total support for the ivory ban a practical impossibility for any conservation organization dependent on member contributions. . . . The majority of the people lobbying African governments had no understanding of the day-to-day realities of African conservation or African life. Yet groups like Friends of Animals and Greenpeace can, with the power of the purse, exert tremendous influence.” ADAMS & MCSHANE, *supra* note 58, at 64-65.

139. See *supra* text accompanying note 40. These nations included Zimbabwe, Botswana, Zambia, Malawi, Mozambique, and South Africa. See THOMPSON, *supra* note 90, at 31.

140. See Heimert, *supra* note 57, at 1479.

141. See *id.*

142. See *id.*

143. See *id.*

144. See Kass, *supra* note 131, at B4.

145. *Id.*

allowed to dispose of registered stocks of raw ivory and to apply the proceeds toward conservation expenditures.¹⁴⁶ The Conference voted to transfer the elephant populations of Zimbabwe, Botswana, and Namibia to Appendix II while leaving all other elephant populations on Appendix I, and to allow a one-time experimental sale of 59 tons of stockpiled ivory to Japan, provided that the countries first meet several strict conditions.¹⁴⁷ In addition, the parties voted to allow Zimbabwe to export elephant hides and leather goods for commercial purposes, and agreed to allow Zimbabwe to export ivory carvings for non-commercial purposes.¹⁴⁸ In the end, the conservationist ideals of the southern African nations won out despite United States' opposition,¹⁴⁹ and the Convention moved a step toward recognizing the value of sustainable use conservation.

2. *Sustainable Use in Practice*

a. *The African Elephant*

Zimbabwe provides the prototypical sustainable use management scheme for protecting the African elephant. In 1982, Zimbabwe created the Communal Areas Management Programme for Indigenous Resources ("CAMPFIRE").¹⁵⁰ The CAMPFIRE program was founded on "the premise that the wildlife belongs to the person on whose land it is found."¹⁵¹ A key insight to CAMPFIRE is the realization that the "people living with wildlife pay the price for conservation—threat of injury by dangerous animals, damage to crops, and so forth—and so must reap the benefits; and . . . that these people have the collective capacity to manage their natural resources."¹⁵² In 1989, the radical program granted the people of

146. *See id.*

147. *See Ivory Trade Decisions at the 41st Meeting of the CITES Standing Committee* (visited Feb. 20, 1999) <<http://www.traffic.org/news/ivorytradedecisions.html>>. The experimental sale of ivory to Japan was subsequently approved at the 41st meeting of the CITES Standing Committee held February 1999 in Geneva, Switzerland. *See id.*

148. *See Summary Report on the 1997 CITES Conference* (visited Mar. 18, 1999) <<http://www.worldwildlife.org/new/traffic/aug97/cites.htm>>.

149. *See Kass, supra* note 131, at B4.

150. *See BONNER, supra* note 43, at 253.

151. *Id.* at 285. Returning wildlife management to localized custodianships was a great departure from accepted notions of conservation. *See ADAMS & MCSHANE, supra* note 58, at 178. The move, however, sought to fuse "ecological responsibility and the communal interest characteristic of traditional African cultures." *Id.* The program "envisions a system of natural resource cooperatives with essentially the same rights and obligations as private owners of commercial ranches, all inhabitants of the community being shareholders." *Id.*

152. ADAMS & MCSHANE, *supra* note 58, at 178.

Nyaminyami the authority to manage the wildlife in their communal district of northwestern Zimbabwe.¹⁵³

Each year, the national wildlife department grants the local council of Nyaminyami the right to hunt or cull one percent of the elephants within the district.¹⁵⁴ In 1989, the Nyaminyami district earned enough from the sale of wildlife products (including elephants) to fund its conservation program and to provide much needed money for social services.¹⁵⁵ Each elephant hunted or culled provided \$5,000 of profit for the community.¹⁵⁶ The same people in the community who were once elephant poachers are now elephant protectors because they now have a vested interest in the benefits of sustainable use management.¹⁵⁷ Consequently, poaching has ceased, and “the people themselves are the ones who now apprehend any strangers who try to kill ‘their’ wild animals.”¹⁵⁸

The success of CAMPFIRE, however, was undermined by the African elephant’s move to Appendix I in 1989. The ivory ban reduced the Nyaminyami district’s revenue by as much as \$125,000 per year.¹⁵⁹ This amount lost due to the ivory ban is roughly equal to the amount of foreign aid the district receives annually for schools and nutrition programs.¹⁶⁰ Hopefully, the Conference of the Parties’ 1997 decision to split-list the African elephant¹⁶¹ will revitalize the CAMPFIRE program and allow the rural people of Zimbabwe to once again benefit from wildlife conservation.

b. The Rhino

South Africa has almost single-handedly rescued the white rhino from extinction. In 1900, there were fewer than twenty remaining in the world, and today South Africa has over 7,000.¹⁶²

The success is due to the active management of Kruger National Park. The park uses the proceeds from tourism and the sale of hunting rights to

153. See BONNER, *supra* note 43, at 253.

154. See Heimert, *supra* note 57, at 1483.

155. See *id.* at 1483. In its first year of operation, Nyaminyami earned a profit of \$30,000, and with the aid the Zimbabwe Trust, a local foundation, \$50 was distributed to each of the district’s 2,000 households—an amount nearly equaling one-fourth of the average annual income. See ADAMS & MCSHANE, *supra* note 58, at 179.

156. See THOMPSON, *supra* note 90, at 33. On average, each hunter who travels to Zimbabwe to shoot an elephant spends \$26,000. See *id.* at 33-34.

157. See *id.* at 34.

158. *Id.*

159. See BONNER, *supra* note 43, at 271.

160. See *id.*

161. See *supra* text accompanying note 144.

162. See *Tusks and Horns and Conservationists*, ECONOMIST, May 31, 1997, at 44, 44-45.

fund its highly effective antipoaching patrols. In fact, the populations of white rhinos are so strong that the government permits limited hunting of them; the cost is \$25,000 a rhino.¹⁶³

In Zimbabwe, the last of the country's black rhinos are found at Africa's largest private wildlife refuge, the 1,235 square mile Save Valley Wildlife Conservancy.¹⁶⁴ The Zimbabwean government transported the remaining wild rhinos to the conservancy in a last ditch effort to save them from poaching.¹⁶⁵ The fifty-one rhinos inhabiting the conservancy receive around the clock protection from poaching.¹⁶⁶ Revenue from tourism provides the necessary funding for the rhino's protection. In addition, tourism revenue is funneled back into the rural district where it has paid for domestic water wells, a grinding mill, and a school for 600 children.¹⁶⁷ Still, possibilities for greater revenue exist. Part of the Conservancy's rhino protection involves regular dehorning of the rhinos in order to remove the incentive to poach them.¹⁶⁸ The dehorning process is costly, roughly \$1,400 per rhino, and must be repeated at least every two years.¹⁶⁹ The Conservancy could benefit greatly from the legal sale of rhino horn collected through the dehorning process.¹⁷⁰ The Appendix I ban, however, proscribes the legal trade of rhino horn and thus, deprives the Conservancy of a significant source of potential revenue for its sustainable use program.

c. The Parrot

Suriname is the only place in South America where parrots are harvested

163. *See id.*

164. *See* Rosenthal, *supra* note 62.

165. *See id.*

166. *See id.*

167. *See id.* The conservancy works with the local people by giving them an incentive to stop poaching. If a poacher offers a local person money for information on the rhino, the conservancy will pay the local person 10 times more for turning in the poacher. *See id.*

A similar sustainable use success story is that of the Australian crocodile. The Edward River Crocodile Farm on the western edge of Australia's Cape York Peninsula is run by the Pormpuraaw aboriginal people. *See Crocodile Skin Sales Boost Small Australian Tribe's Economy*, L.A. TIMES, Sept. 6, 1993, at 3. The project was started by the Pormpuraaw people in 1973 to conserve the endangered crocodile, and within three years, they began to harvest the animals commercially. *See id.* The Pormpuraaw people previously had 100% unemployment; now they are employed and can afford better education and health care. *See id.* In 1992, the farm exported \$340,000 worth of skins, which comprised a third of the total exports for the entire Australian crocodile skin industry. *See id.* The farm also launched a tourist component to the farm. The Pormpuraaw give tours of the farm and operate a small shop selling crocodile handbags, belts, and key rings. In 1993, a crocodile handbag sold for as much as \$10,200 in Paris, Tokyo, and New York. *See id.*

168. *See* Rosenthal, *supra* note 62.

169. *See id.*

170. *See id.*

on a sustainable use basis for the benefit of the local people.¹⁷¹ Suriname wildlife authorities issue a specified number of parrot-catcher permits to selected rural peasants, and each peasant is assigned an area of the forest and a quota for a particular species.¹⁷² The authorities also issue a select number of parrot-dealer permits and establish a minimum price that dealers must pay the parrot-catchers for the birds they catch.¹⁷³ In addition, export permits are not granted until parrot dealers in the United States deposit a specified sum in a Suriname bank, a sum representing the fair market value of the wholesale trade.¹⁷⁴ As a result, the parrot-catchers obtain fair value for the parrots, and “jealously guard their forest allocations” from poachers and “slash-and-burn farmers whose wasteful agricultural practices would destroy the vital habitats.”¹⁷⁵ The program in Suriname has ended the overexploitation that previously plagued its parrot populations.¹⁷⁶ Now the people and the parrots are benefiting from the sustainable-yield parrot trade.

IV. PROPOSAL

The efficacy of CITES can be vastly improved by adopting sustainable use alternatives to anti-use preservationism. First, CITES must fundamentally alter its pervading preservationist ideology by recognizing the tremendous improvements in species conservation available from sustainable use programs. Second, CITES must recognize the benefits of legal trade in such products as ivory and rhino horn that are harvested from sustainable use programs. CITES then must work to establish sustainable use programs across many more nations so that legal trade in ivory and rhino horn can prosper. Third, CITES must consider further sustainable use programs such as game ranching, tourism, and captive breeding as legitimate ways to preserve wildlife and habitat.

A. *Necessity for an Ideological Change*

The move toward increasing CITES’ reliance on sustainable use programs must start with a fundamental change in the Convention’s

171. See THOMPSON, *supra* note 90, at 46.

172. See *id.* at 179.

173. See *id.* The dealers’ permits specify which species they can sell, and the dealers’ holdings are subject to inspection by the Suriname authorities. See *id.*

174. See *id.* at 180.

175. *Id.* In addition, the behavior of parrot-catchers and dealers with permits is, in part, regulated by their peers, who covet the limited number of permits available. See *id.*

176. See *id.*

ideological preference. The parties must recognize that banning the international trade in endangered species is not the long-term solution to the problem. The trade ban is at best, an inefficient and costly attempt to protect the world's most coveted species. Enforcement problems abound and show few signs of improving in the near future.¹⁷⁷ In many instances, the inflexibility of the trade ban is perversely affecting species protection in nations with conservationist management schemes.¹⁷⁸ While the Appendix I ban on commercial trade is clearly better than the absence of regulation, it must yield to the superior conservationist approach that constructively uses trade to protect valuable wildlife through the active management of species and habitat.¹⁷⁹

The ban on trade in Appendix I species rests on the dubious assumption that halting the trade in endangered species will save those species. The entire effectiveness of a trade ban relies on the government's ability to police its prohibition on trade. The government must expend significant resources to combat its citizens' natural tendency to consume wildlife as a source of income and subsistence. In practice, this proves a daunting task for even the wealthiest of nations.¹⁸⁰ Lesser-developed countries, which pose the gravest threat to species extinction, simply cannot generate the funds to enforce the trade ban.¹⁸¹ Thus, a trade ban becomes a no-win situation where species hover at the brink of extinction while people are forced to absorb the heavy costs of policing the ineffective ban.

The conservationist approach, on the other hand, recognizes that the focus on halting the trade is misplaced. Conservationism correctly focuses on creating positive incentives for individuals to protect species and wildlife habitat. If wildlife is to compete with alternative land uses, it is essential for wildlife conservation to pay its own way. Thus, the solution is not to ban the exploitation of wildlife, but to implement schemes where the benefits derived from the consumption of wildlife provide the necessary incentives to protect

177. See *supra* text accompanying notes 48-57.

178. See *supra* text accompanying notes 159-60,170-71.

179. Authors Adams and McShane point out the great value of management in Africa as follows: [W]ildlife is in fact one of the most productive uses of land in Africa, particularly in semi-arid areas. People living near protected areas thus would be wise to preserve their wildlife, rather than killing it off so the land could be used for something else. Mass wildlife tourism, as in Kenya, produces \$100 per hectare, while more exclusive tourism brings in \$50 per hectare. Sport hunting generates \$10 per hectare, double that of commercial hunting for meats and hides. Cattle ranching for beef on Zimbabwe's semi-arid pasture is actually a drain on the economy, costing \$5 per hectare.

ADAMS & MCSHANE, *supra* note 58, at 172.

180. See *supra* text accompanying note 50.

181. See *supra* text accompanying note 50.

wildlife.¹⁸² The conservationist approach boldly asserts that regulated trade in wildlife is the necessary and best means to achieve the end of wildlife conservation.¹⁸³

A fundamental shift from the pervading preservationist ideology to a conservationist ideology certainly will not happen overnight. For any such shift to occur, leading industrialized nations must forge the way. Specifically, the United States must open its eyes to the realities of wildlife conservation in lesser-developed nations.¹⁸⁴ The reality is that people are going to exploit wildlife with or without a trade ban. The question remains whether CITES will move forward to implement a plan geared toward the sustainable utilization of wildlife.

B. Lifting the Trade Ban and Implementing Sustainable Use Trade in Wildlife and Wildlife Products

The first step toward implementing sustainable use conservationism is lifting the Appendix I trade ban on certain wildlife products with established

182. Such a scheme can be described as symbiosis, where “man’s ‘use’ of his wildlife resources benefits both himself *and* the wild animal populations that he ‘uses’”. THOMPSON, *supra* note 90, at 44. This concept of mutual benefit is the underlying principle of conservationism.

183. The problem is essentially an economic one: “how much does it cost to save a [species] and who will pay?” ADAMS & MCSHANE, *supra* note 58, at 168. If both the public and private sectors cannot generate revenue from conserving a species, then little incentive remains to engage in conservation. However, “[i]f the benefits of saving a species are tangible and measurable, . . . why not turn over the task to a private party who is willing to bear the cost in exchange for a share of the benefit?” Charles C. Mann & Mark L. Plummer, *The Butterfly Problem*, ATLANTIC MONTHLY, Jan. 1992, at 47, 65. One author has even gone so far as to suggest that preservationist “antipathy to markets reinforces one’s suspicion that certain preservationists are more anti-capitalist than they are pro-environment.” Sugg, *supra* note 104, at A10.

Much is made about the ‘morality’ of commercializing wildlife in the minds of preservationists. See THOMPSON, *supra* note 90, at 47. In their opinion, wildlife should be left in its pristine state and certainly not exploited by the private sector. In reality, the ethical overtones of preservationism carry little weight. As zoologist Colin Tudge writes, “It is difficult in this world to do anything that is unequivocally good, and if we have to choose between exploitation and obliteration, then the former emerges as the lesser of two evils. . . . [I]t is ethically no worse to kill and eat an antelope than to kill and eat a domestic sheep. At least, the sheep would not appreciate the difference.” TUDGE, *supra* note 1, at 8.

184. One should note the apparent double standard in the western preservationist approach. Dr. David Cumming, who runs the World Wildlife Foundation’s Multispecies Project in Zimbabwe, summarizes the hypocrisy as follows:

Go to North America and ask people about reintroducing wolves to Yellowstone National Park. . . . What sort of reaction do you get? And yet the same people have the nerve to say to Africans, ‘You keep your elephant and your rhino, in the number that we think you should.’ In other words, Africa should have a million elephants or more, rather than 250,000. . . . 250,000 is a long way from extinction, when you compare it with the grizzly bear. How many grizzlies are there in the lower forty-eight states? A couple hundred?

ADAMS & MCSHANE, *supra* note 58, at 174.

sustainable use programs. This would entail opening the door to trade in such products as ivory and rhino horn harvested from nations with existing sustainable use programs.¹⁸⁵ These nations would use the proceeds from the sale of stockpiled reserves and culling efforts to improve the protection of existing elephants and rhinos. In addition, local people authorized with the management of native lands would use the much-needed proceeds from the sale of ivory and rhino horn harvested from their lands to improve the quality of their social infrastructures.

The success of the regulated trade in ivory and rhino horn necessitates wide-scale participation in sustainable use programs throughout Africa and beyond. The difficulty of distinguishing ivory and rhino horn harvested from legitimate sources versus that harvested from poaching poses the threat that illegally obtained products will enter the trade.¹⁸⁶ Therefore, it is essential that CITES parties work together to establish sustainable use programs across multiple nations so that no nation is benefiting at the expense of other nations. These changes will necessitate cooperation among CITES parties and will require time to implement. The Conference of the Parties' 1997 decision to split-list the African elephant is certainly a step in the right direction and will prove a great impetus for other African nations to take control of their wildlife management and to share in the fruits of sustainable use conservation.

C. Game Ranching, Tourism, and Captive Breeding

Opening the doors to wildlife trade is just the beginning to a successful conservationist scheme. Game ranching, captive breeding, and tourism provide further opportunities for species, people, and the government to benefit mutually from wildlife conservation.

185. *See supra* text accompanying notes 150-69. Nations practicing sustainable development of elephants and rhinos include the southern African nations of Zimbabwe, Zambia, Botswana, Malawi, and South Africa.

186. *See* Hugh Dellios, *Elephant Ivory Sale Okayed: Poaching Fears Raised as Ban Eased*, CHI. TRIB., Jun. 20, 1997, at 1. At the 1997 Conference of the Parties held in Harare, Zimbabwe, CITES voted to allow the southern African nations of Botswana, Namibia, and Zimbabwe to sell 59 tons of stockpiled elephant tusks to Japan as an experimental ease of the ivory ban. *See id.* Those opposed to the sale argue that the resumption of the ivory trade will stimulate poaching in countries that have not been as successful at protecting elephants. *See id.* The southern African nations, however, characterize the move as a "triumph for sanity, objectivity and for recognizing developing countries' ability to take their own decisions on natural resource management." *Id.*

1. *Game Ranching*

Game ranching is perhaps the most promising approach to wildlife conservation.¹⁸⁷ Game ranching involves the breeding and hunting of species for profit.¹⁸⁸ Revenue is generated in two ways: selling breeding rights and selling hunting rights.¹⁸⁹ Both components generate significant revenue. For example, in 1990, the South African government sold a young breeding unit of two male and three female black rhinos to a private game rancher for \$750,000.¹⁹⁰ The hunting component also provides a great source of income. In 1988, a 'Big Five' hunting safari in Africa fetched \$110,000, which consisted of the hunt of one elephant, one (aging) black rhino, one Cape Buffalo, one lion, and one leopard.¹⁹¹ At these prices, it is easy to see the opportunity for profit and the resulting interest in protecting rhinos.¹⁹² A prerequisite to game ranching, however, is markets for its products, which

187. See Sugg, *supra* note 104, at A10.

188. The profit component, however, is not essential to game ranching. Some ranch owners breed endangered animals solely for the sake of preserving them. For example, the Exotic Wildlife Association, an international game ranching organization headquartered in Texas, has over 450 members who own over 200,000 animals comprising some 125 species. See *id.* Over 19,000 of those animals are members of threatened or endangered species. See *id.* In fact, one member of the Association, David Bamberger, has single-handedly preserved 29 of 31 remaining bloodlines of the scimitar-horned oryx, which is near extinction in its native African range. See *id.* The oryx is more numerous in Texas than in its native ranges. See *id.*

189. See THOMPSON, *supra* note 90, at 44.

190. See *id.* While the \$750,000 figure might have been a bit inflated, the consensus is that a young black rhino in 1991 was worth between \$75,000 and \$100,000 on the commercial market. See *id.*

191. See *id.* Another estimate asserts that a three week safari in Zimbabwe or Tanzania hunting a lion, an elephant, a leopard, and various antelopes costs about \$50,000. See *Why We Ought to Hunt Big Animals: Killing to Be Kind*, ECONOMIST, Apr. 20, 1996, at 76. The 'ethical' objections to such hunting are quite apparent. See *supra* note 183 for a discussion of the ethical dilemma. One conceivable alternative to the outright killing of big-game animals is the novel idea of "green hunting," which involves the use of tranquilizer guns to take down a large mammal. See Dianne Zuckerman, *Saving the Elephants: Introduction of 'Green Hunting' May Assure Mammals' Survival*, DENVER POST, Oct. 20, 1998, at E1. After the animal is tranquilized, researchers could apply radio tracking devices to the animal and make necessary identification notes to aid in the research of the species. See *id.*

Dr. John Beddington at Imperial College in London advances another novel idea that avoids hurting elephants altogether. He suggests creating a market in ivory futures. See TUDGE, *supra* note 1, at 9-10. Dr. Beddington points out that an elephant's tusk grows exponentially throughout its life—the bigger an elephant gets, the faster the tusks grow. See *id.* at 10. An investor could buy the rights to receive an elephant's tusks upon the elephant's natural death. The investor would watch his investment grow exponentially and would have a stake in protecting the elephant's life and its tusks. See *id.*

192. "[T]he pursuit of profit motivates the rancher to maximize that which is valuable, which means increasing wildlife numbers. It means preserving the genetic purity of the species, from which its value is often derived. And it means taking care of the land—a collateral ecological benefit." Sugg, *supra* note 104, at A10.

including meats, breeding stock, and hunting rights.¹⁹³ “Few ranchers, no matter how conservationist-minded, would go to the expense and effort of raising wildlife if they could not earn a return from doing so.”¹⁹⁴ Thus, the livelihood of game ranchers depends on the ability of CITES to open the avenues of international trade to game ranchers’ products.¹⁹⁵

A significant advantage of game ranching is that it raises abundant revenue while at the same time causing little disturbance to native habitat.¹⁹⁶ Hunters cause fewer disturbances to the environment than tourists do principally because one hunter brings in as much revenue as 100 tourists.¹⁹⁷ A second advantage of game ranching is the incentive to transform agricultural land back into native wildlife habitat to capture the higher yields from game ranching.¹⁹⁸ Finally, such preservation of native wildlife has the added piggyback benefit of preserving non-hunted species as well.¹⁹⁹

Game ranching can occur on private land, communal land, or public land. Game ranching works best on private land where individuals open up their land for hunting and breeding. Creating property rights in the species effectively overcomes the tragedy of the commons, and ensures the sustainable conservation of species and habitat. Game ranching also works well on communal land, as exemplified by Zimbabwe’s CAMPFIRE program.²⁰⁰ Giving local districts quasi-property rights to wildlife found on their lands approximates the results achieved under private ownership, and has the added benefit of enriching the lives of entire rural communities.²⁰¹ Clearly, programs like CAMPFIRE work effectively to conserve species and to enrich rural peoples’ lives.

193. *See id.*

194. *Id.*

195. National and international regulation of endangered species reduces the incentive of game ranchers to buy, sell, or raise listed animals because ranchers are prohibited from obtaining and profiting from the preservation of the species. *See Sugg, supra* note 104, at A10. For example, ranchers stopped buying and raising the barasinga, a deer indigenous to India, after it was put on an endangered list. *See id.*

196. *See Why We Ought to Hunt Big Animals: Killing to Be Kind, supra* note 191; Stephen M. Weaver, *The Elephant’s Best Friend*, NAT’L REV., Aug. 12, 1991, at 42. Another estimate suggests that a visiting hunter spends 14 times more money than a tourist—the hunter spends \$725 to \$1,500 per day and stays an average of 11 days, while the tourist spends \$52 per day and stays an average of three days. *See id.*

197. *See Weaver, supra* note 196, at 42.

198. *See id.*

199. *See id.* Game ranches normally encompass very large tracts of land. Some environmentalists charge that game ranching is an “immoral” interference with the once free-roaming animal herds. *See Smith, supra* note 99, at 454. “But free-roaming is a relative concept. These animals are certainly free-roaming within the boundaries of the game ranches, and many of these ranches are enormous.” *Id.*

200. *See supra* text accompanying notes 151-62.

201. *See id.*

Game ranching on public land is a third option and presents a government with at least two choices. First, a government can convert public land into private land by auctioning it off to a bidder who finds the land suitable for game ranching. The conversion obviates the tragedy of the commons problem associated with public land, but most governments are loath to convert public land to private land. A second alternative is for the government to issue tradable hunting permits entitling the recipient to hunt a specified number of a species on public land.²⁰² This method is essentially the approach used successfully to harvest parrots in Suriname.²⁰³ Although the permits in Suriname are not tradable, the inclusion of tradability is beneficial because it ensures that the permits end up in the hands of those who value them the most.²⁰⁴ The downside to the permit system is that where land is expansive, it will prove difficult and costly to police the system. Ideally, money from the sale of permits would fund the enforcement expenses. One response is to limit permit hunting to national parks. Public hunting in national parks, however, is widely scorned and is only permitted in eight nations worldwide.²⁰⁵ The rationale for such a policy is puzzling considering many countries permit livestock grazing, forest exploitation, and fishing in national parks—all of which are more deleterious to habitats than hunting.²⁰⁶ South Africa's Kruger National Park is one example of a successful hunting permit operation that uses permit proceeds to fund its conservation efforts.²⁰⁷

2. *Tourism*

Tourism is an important supplement to a sustainable use program. For example, in Rwanda, tourist interest in the gorilla accounts for \$4 million of the country's yearly GDP, making it the country's second largest industry.²⁰⁸

202. See Melissa Lauderdale, *Reforming CITES: Using Market-Based Proposals to Save Endangered Species*, LBJ J. OF PUB. AFFAIRS, 1996 (visited Mar. 18, 1999) <<http://uts.cc.utexas.edu/~journal/1996/lauderda.htm>>.

203. See *supra* text accompanying notes 171-76.

204. See Lauderdale, *supra* note 202. In the case of Suriname, tradability could mean that the local peasants would lose out on the bidding war. Thus, the desirability of tradable permits would have to be weighed against the desire to enrich local peasants.

205. See THOMPSON, *supra* note 90, at 167.

206. See *id.*

207. See *supra* text accompanying notes 162-64.

208. See Martha J. Groom, *Tourism as a Sustained Use of Wildlife: A Case Study of Madre de Dios, Southeastern Peru*, in NEOTROPICAL WILDLIFE USE AND CONSERVATION 393, 395 (John G. Robinson & Kent H. Redford eds., 1991). As another example of the value of a single species, a single free-flying macaw might generate as much as \$165,000 in local tourist revenue over its lifetime. See BOLZE, *supra* note 85, at 19.

The money brought into the country from tourism has changed local people's negative attitude toward wildlife, and gorilla poaching has suddenly stopped.²⁰⁹ For tourism to succeed as a non-consumptive form of conservation, governments must find ways to distribute the gains from tourism to the local people through employment, compensation fees, and social service programs.²¹⁰ Giving local people an economic stake in tourism increases their incentive to protect wildlife.²¹¹ This is the challenge for tourism in the future, and CITES should promote tourist operations that are managed by local people.

Non-consumptive, game-viewing tourism is a widely accepted means of raising revenue to fund conservation.²¹² Tourism, however, cannot be viewed in isolation, and must be supplemented by consumptive-use programs such as game ranching. The main drawback to tourism is that a successful tourist industry necessitates large capital expenditures and the maintenance of costly infrastructures that many lesser-developed nations cannot support.²¹³ The creation of sustainable use game ranching, however, can stimulate and complement tourism. For example, a successful community game ranching program like CAMPFIRE could incorporate game-viewing tourism into its operation. In many instances, tourism could be a valuable byproduct of game ranching.

3. *Captive Breeding*

CITES should recognize the role that captive breeding can play in a conservationist program. In the context of the wild bird trade, captive breeding could "supply the market demand for the birds and reduce or eliminate the demand on wild populations."²¹⁴ Captive breeding operations, however, exist primarily in the United States and Europe, and few are in place in nations that export wild birds.²¹⁵ This disparity demonstrates that captive breeding does not benefit local people in exporting states, and therefore does little to reduce the demand for wild birds.²¹⁶ A successful

209. See Groom, *supra* note 208, at 395.

210. See *id.* at 393-94. The Sun Valley Wildlife Conservancy in Zimbabwe is a perfect example of tourism that benefits local people. See *supra* text accompanying notes 164-67.

211. See Groom, *supra* note 208, at 394.

212. See THOMPSON, *supra* note 90, at 168-69.

213. See *id.* at 169. In fact, many of Africa's national parks operate at economic losses each year and require government subsidization. See *id.*

214. Smith, *supra* note 99, at 455. Captive breeding already is responsible for supplying commercial quantities of several larger parrot species. See BOLZE, *supra* note 85, at 16.

215. See BOLZE, *supra* note 85, at 16.

216. See *id.*

captive breeding program must involve the local people of exporting nations. In addition, captive breeding does nothing to protect forest bird habitat, and thus must be part of a larger scheme that includes sustainable harvesting programs like those in Suriname.²¹⁷ Maintaining birds in captivity, however, does play an important role in the re-introduction of birds into the wild.²¹⁸

V. CONCLUSION

Sustainable use programs provide the framework for the most innovative and effective wildlife conservation of the future. If people are to embrace protecting the world's biological diversity, they must have an incentive to do so. Fundamental to the decision to conserve wildlife is the opportunity to benefit from maintaining wildlife in its natural form. Maintaining species and habitat solely for their ecological and aesthetic value certainly is a noble aspiration, but the world's burgeoning population needs much more of an incentive to protect its biological heritage. No amount of government funding, subsidization, or education can halt humankind's natural tendency to exploit the objects of its environment. Sustainable use management, however, can reduce this exploitation to levels at which natural resources are consumed "at a rate within their capacity for renewal."²¹⁹ At sustainable levels of consumption, both wildlife and people benefit from trade. Granting people an economic stake in wildlife provides the best incentive for careful stewardship of species and habitats.

It is uncertain whether CITES will fully embrace sustainable use alternatives to its trade ban. The developments at the 1997 Conference of the Parties are encouraging, but much greater change is needed for the future. The Convention must shift its focus away from the rigid and ineffectual trade ban, and concentrate on ways in which trade can work to the advantage of wildlife and people. Sustainable use management is the prescription for ensuring the continued vitality of species, habitat, and humanity.

Jay E. Carey

217. See THOMPSON, *supra* note 90, at 180.

218. See *id.*

219. Robinson, *supra* note 125, at 23.