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Trophy Hunting of Black Rhino *Diceros bicornis*: Proposals to Ensure Its Future Sustainability

N. Leader-Williams[1]
S. Milledge[2]
K. Adcock[3]
M. Brooks[4]
A. Conway[5]
M. Knight[6]
S. Mainka[7]
E.B. Martin[8]
T. Teferi[9]

Proposing the use of charismatic species of large mammals as a conservation tool is often controversial, even though the Conservation of Biological Diversity promotes sustainable use as one of its three pillars. Indeed, sustainable use has been important in helping to recover southern white rhinos, the South African population of which was downlisted in 1994 to Appendix II of CITES for trophy hunting and live sales only. The Appendix I listed black rhino is now also beginning to recover, particularly in South Africa and Namibia, where how best to deal with surplus males arising from successful biological management is an increasing problem. Furthermore, black rhinos are now being increasingly moved to private land, where incentives from use may help help promote metapopulation management goals. As a result, the African Rhino Specialist Group anticipated proposals to trophy hunt black rhinos, and were concerned to recommend criteria that proponent countries would need to meet for such proposals to succeed. These recommendations address four guiding principles:

[1] Durrell Institute of Conservation and Ecology, University of Kent, Canterbury, CT2 7NS, Kent, UK.
[2] TRAFFIC East Southern Africa, P.O. Box 106060, Dar es Salaam, Tanzania.
[3] Wild Solutions, P.O. Box 1210, Hilton 3245, South Africa.
[4] Ezemvelo KZN Wildlife, P.O. Box 13053, Cascades, Pietermaritzburg 3202, South Africa.
[5] Ezemvelo KZN Wildlife, P.O. Box 201, Mtubatuba 3935, South Africa.
[6] South African National Parks, P.O. Box 20419, Homewood 6013, Port Elizabeth, South Africa.
[7] IUCN Species Survival Commission, rue Mauverney 28, 1196 Gland, Switzerland.
[8] P.O. Box 15510 Mbagathi, 00503 Nairobi, Kenya.
[9] WWF Southern Africa Regional Programme Office, P.O. Box CY140, Causeway, Harare, Zimbabwe.

- *ensuring that any offtakes are biologically sustainable and based on good monitoring;*
- *ensuring that incentives from any hunting opportunities are maximized, without discriminating between state agencies and the private sector;*
- *rewarding good biological management and long-term commitment to black rhino conservation; and*
- *ensuring that appropriate internal and external controls are in place.*

Keywords Black rhino, trophy hunting, sustainability, CITES, surplus males, incentives for conservation

1. INTRODUCTION

The sustainable use of wildlife remains something of a cleft stick in contemporary conservation.[10] On the one hand, the commercial hunting of many species of wildlife has not been conducted sustainably, and this makes many conservationists understandably nervous about additional proposals in this context.[11] At the same time, Article 1 of the Convention on Biological Diversity (CBD) promotes the role of sustainable use in providing people with the necessary incentives to conserve biodiversity, which on land ultimately requires decisions about the opportunity costs of different forms of land use.[12]

The CBD has, nevertheless, based its aspirations on situations where wise use has led to positive incentives for conservation. For example, the loss of many native species after the European colonization of North America and Africa led sportsmen to protect their interests by developing conservation programs. Formal conservation policies in many countries in the 1800s and early 1900s sought to regulate hunting and to establish game preserves,[13] and subsequently in southern Africa to reestablish species on private land to create further sustainable resource use opportunities, including hunting.[14] Therefore,

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[10] J.M. Hutton, N. Leader-Williams, *Sustainable Use and Incentive-Driven Conservation: Realigning Human and Conservation Interests*, 37 ORYX 215–226 (2003).

[11] E.J. MILNER-GULLAND & R. MACE, CONSERVATION OF BIOLOGICAL RESOURCES (1998); E.L. Bennett & J.G. Robinson, *Hunting for Sustainability: The Start of a Synthesis*, *in* HUNTING FOR SUSTAINABILITY IN TROPICAL FORESTS 499–509 (J.G. Robinson & E.L. Bennett, eds., 2000).

[12] J. MCNEELY, ECONOMICS AND BIOLOGICAL DIVERSITY: DEVELOPING AND USING ECONOMIC INCENTIVES TO CONSERVE BIOLOGICAL RESOURCES (1988); T. SWANSON, INTERNATIONAL REGULATION OF EXTINCTION (1994); J.M. Hutton, N. Leader-Williams, *Sustainable Use and Incentive-Driven Conservation: Realigning Human and Conservation Interests*, 37 ORYX 215–226 (2003).

[13] J.F. REIGER, AMERICAN SPORTSMEN AND THE ORIGINS OF CONSERVATION (1986); J.M. MACKENZIE, THE EMPIRE OF NATURE: HUNTING, CONSERVATION AND BRITISH IMPERIALISM (1988); N. Leader-Williams, *The Effects of a Century of Policy and Legal Change Upon Wildlife Conservation and Utilisation in Tanzania*, *in* CONSERVATION OF WILDLIFE BY SUSTAINABLE USE 219–245 (H.H.T. Prins, J.G. Grootenhuis & T.T. Dolan, eds., 2000).

[14] J. Du P. Bothma, *Some Economics of Wildlife Ranching*. Unpublished report of the South African Veterinary Association Symposium on Game Ranching 1–10 (2002); D.M. Lewis & J.J. Jackson, *The Role of Safari Hunting in Reducing Conflicts*, *in* PEOPLE AND WILDLIFE: CONFLICT OR CO-EXISTENCE? (R. Woodroffe, S.J. Thirgood & A. Rabinowitz, eds., 2005).

sportsmen who fished and hunted for pleasure, rather than commercially or out of necessity, became a spearhead for formal policies to conserve wildlife and its habitats.[15]

The use of hunting opportunities as a conservation tool, however, has led to differences of opinion over whether wildlife should or should not be killed to promote conservation objectives. For many people, their main concern focuses on the welfare of the individual animals targeted for hunting, rather than the broader issues of conserving viable populations of the species and their associated habitats. When this moral concern is asserted under the rubric of sustainable use, it often masks their real position that killing individuals of those species is unacceptable.[16] Unfortunately, this pits opposing positions against each other,[17] even though most conservationists, whether for or against sustainable use, are fully engaged in the common objective of finding incentives to conserve wildlife and its habitats. In other words, many individuals adopt a relatively fixed position on hunting, irrespective of whether hunting is sustainable biologically or provides an incentive for further conservation, as required by CBD Articles 2 and 11, respectively.[18] In turn, this adds to tensions that arise within arenas such as the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) when debating the use of charismatic species, such as whales, turtles, elephants, and rhinoceroses, listed on CITES appendices.[19] The debates over Africa's two species of rhinoceros are cases in point.

2. LOSSES AND RECOVERY OF AFRICA'S RHINOS

Both white rhinos, *Ceratotherium simum*, and black rhinos, *Diceros bicornis*, were listed on Appendix I of CITES in 1977, primarily as a measure to ban international trade in rhino horn.[20] Southern white rhinos, *C.s. simum*, the more numerous of the two subspecies, have increased from 20 to 50 in 1900 to over 11,000 today, of which 94 percent of the wild population occurs in South Africa. Southern white rhinos started to increase in numbers well before the 1977 ban on all trade in rhino horn, and their rate of increase has not improved

[15] G.G. GRAY, WILDLIFE & PEOPLE: THE HUMAN DIMENSIONS OF WILDLIFE ECOLOGY (1993); J.F. REIGER, AMERICAN SPORTSMEN AND THE ORIGINS OF CONSERVATION (1986); J.J. Jackson, *An International Perspective on Trophy Hunting*, *in* TOURIST HUNTING IN TANZANIA 7–11 (N. Leader-Williams, J.A. Kayera, & G.L. Overton, eds., 1996).

[16] J. HOYT, ANIMALS IN PERIL: HOW SUSTAINABLE USE IS WIPING OUT THE WORLD'S WILDLIFE (1994).

[17] M. CONOVER, RESOLVING HUMAN-WILDLIFE CONFLICTS: THE SCIENCE OF WILDLIFE DAMAGE MANAGEMENT (2002).

[18] Hutton & Leader-Williams, *supra* note 10.

[19] J.M. HUTTON & B. DICKSON, ENDANGERED SPECIES, THREATENED CONVENTION: THE PAST, PRESENT & FUTURE OF CITES (2000).

[20] N. LEADER-WILLIAMS THE WORLD TRADE IN RHINO HORN: A REVIEW (1992); N. Leader-Williams, *Regulation and Protection: Successes and Failures in Rhinoceros Conservation*, *in* THE TRADE IN WILDLIFE: REGULATION FOR CONSERVATION 89–99 (S. Oldfield, ed., 2002).

as a result of the 1977 ban.[21] Rather, the initial recovery of southern white rhinos was set underway because smaller protected areas in southern Africa remained well protected. The ongoing recovery of southern white rhinos was enhanced by an additional two key measures. First, white rhinos were moved to new areas, including from state to private land, once state-protected areas had reached their carrying capacities. Second, limited and sustainable use, through trophy hunting and live sales, has been encouraged.[22] Indeed, so successful has been their ongoing recovery that southern white rhinos in South Africa were down-listed to Appendix II of CITES in 1994, but only to allow for hunting trophies and live sales, and not for sale of horn.[23] Now, some 25 percent of South Africa's white rhinos live on private land, while the number of private properties holding white rhinos increased by 36 percent from 1999 to 2001.[24] More recently, southern white rhinos have been listed as near threatened rather than being placed in the "threatened" category.[25]

By contrast, despite the 1977 ban on all trade in rhino horn, black rhino numbers decreased from approximately 65,000 in 1970 to 2400 in 1995, and the species remains listed as critically endangered.[26] The key factors in this massive decline were that once large populations ranged over large areas, and they received insufficient protection from poachers in situations of *de facto* open access.[27] Where protection has remained good—for example, in South Africa and Namibia—populations have continued to increase.[28] Since 1995, the total numbers of black rhinos in Africa have begun to recover, because of increases in populations remaining in southern Africa and Kenya, and now number 3,600 rhinos. Besides good protection, a key feature of this initial recovery has been the sound biological management of black rhinos to promote rapid population growth, and using translocations to seed new

[21] N. Leader-Williams, *Regulation and Protection: Successes and Failures in Rhinoceros Conservation*, *in* THE TRADE IN WILDLIFE: REGULATION FOR CONSERVATION 89–99 (S. Oldfield, ed., 2002).

[22] K. Adcock & R.H. Emslie, *The Role of Trophy Hunting in White Rhino Conservation, with Special Reference to Bop Parks, in* RHINOS AS GAME RANCH ANIMALS 35–41 (B.L. Penzhorn & N.P.J. Kriek, eds., 1994).

[23] Leader-Williams, *supra* note 21.

[24] J.G. Castley & A.J. Hall-Martin, *The Status of the Southern White Rhinoceros* (Ceratotherium simum simum) *on Private Land in South Africa in 2001*, 34 PACHYDERM 33–44 (2003).

[25] C. HILTON-TAYLOR, 2003 IUCN RED LIST OF THREATENED SPECIES (2003), International Union for the Conservation of Nature.

[26] *Id.*

[27] N. Leader-Williams, S.D. Albon, P.S.M. Berry, *Illegal Exploitation of Black Rhinoceros and Elephant Populations: Patterns of Decline, Law Enforcement and Patrol Effort in Luangwa Valley, Zambia*, 27 J. APPLIED ECOLOGY 1055–1087 (1990); T. MILLIKEN, K. NOWELL, & J.B. THOMSEN, THE DECLINE OF THE BLACK RHINO IN ZIMBABWE: IMPLICATIONS FOR FUTURE RHINO CONSERVATION (1993).

[28] A.J. Hall-Martin & M.H. Knight, *Conservation and Management of Black Rhinoceros in South African National Parks*, *in* RHINOS AS GAME RANCH ANIMALS 11–19 (B.L. Penzhorn & N.P.J. Kriek, eds., 1994), South African Veterinary Association, Onderstepoort.

founder populations while keeping source populations below ecological carrying capacity.[29] As with southern white rhinos, the recovery of black rhinos has been encouraged on both state and private land. In Kenya, for example, the private sector has played a key role since 1983 in establishing sanctuaries for black rhinos, at a time when state-protected areas were reliant on donor support to set the initial recovery of *D.b. michaeli* underway.[30] However, Namibia and South Africa had managed the initial recoveries of *D.b. bicornis* and *D.b. minor* mainly in state-protected areas. The two subspecies now number around 1,300 and 1,200 rhinos in each country, respectively, and only in the last 10–15 years have both countries begun to encourage the private sector to take black rhinos.[31]

3. FUTURE POLICIES FOR USE OF BLACK RHINOS IN SOUTHERN AFRICA

Resolution Conf. 9.14 of CITES recommended range states, *inter alia*, to include provision for the reinvestment of revenues derived from the use of rhinoceros that is consistent with the Convention, in order to offset the high costs of their conservation; and to facilitate the long-term goal of sustaining, on a basis of self-sufficiency, their rhinoceros conservation efforts.[32] Given this, and the way that the successful recovery of the southern white rhinos has been managed, proposals may well emerge from southern Africa on how best to provide incentives to conserve black rhinos on state and private land.

The conservation budgets for state-protected areas in this region have declined in recent years,[33] as governments tackle other national priorities for government spending. Private land owners have difficult land use decisions to make on whether they take on the security risk of managing species of such conservation importance and financial value as black rhinos without any incentives to do so. However, wildlife increased by 80 percent on private land in Namibia when legislative changes allowed landowners to benefit directly from managing wildlife on their land.[34]

Furthermore, for several reasons, surplus males have become an ever-increasing problem in efforts to conserve black rhinoceroses. The carrying capacity of territorial adult males is behaviorally restricted within many of the small, fenced areas of provincial reserves and private game sanctuaries, limiting the populations of resident males. Good biological management to

[29] R.H. EMSLIE & P.M. BROOKS, AFRICAN RHINO: STATUS SURVEY AND CONSERVATION ACTION PLAN (1999).
[30] R. Brett, *Kenyan Rhino Conservation Plan*. Kenya Wildlife Service (1993).
[31] Emslie & Brooks, *supra* note 29.
[32] *Id.*
[33] *Id.*
[34] J.I. Barnes & J.L.V. de Jager, *Economic and Financial Incentives for Wildlife Use on Private Land in Namibia, and the Implications for Policy*, 26 SOUTH AFRICAN J. WILDLIFE RESEARCH 37–46 (1996).

promote rapid population growth of black rhinos also results in a surplus of males. The establishment of new female-biased founder groups leaves the problem of how best to dispose of surplus males from donor areas.[35] When groups of black rhino have been put up for sale to the private sector by state conservation agencies, surplus males are in little demand. Other measures to deal with the issue of surplus males are limited.[36] Meanwhile, black rhino conservation efforts have necessitated, and achieved, greatly improved monitoring of rhinos, such that most rhinos in small areas, including geriatrics, are known individually.[37] This field monitoring is underpinned by the Rhino Management Group (RMG), composed of representatives from the state conservation agencies, private owners, and rhino experts. The group analyzes monitoring data and advises on the management and use of black rhino in South Africa, Namibia, Zimbabwe, and Swaziland.

Therefore, under the prevailing scenarios of budgetary constraints and pressing considerations of biological management, it appeared likely that proposals will soon emerge to trophy hunt surplus male black rhinos. At the same time, it will be necessary to ensure that any revenues deriving from such use helps to promote conservation objectives, as occurs, for example, with revenue accruing to the Game Product Trust Fund in Namibia.[38]

In anticipation of possible proposals to trophy hunt black rhinos from Namibia and South Africa, members of the World Conservation Union's Species Survival Commission's African Rhino Specialist Group (IUCN-SSC AfRSG) established a working group in 2002 to make recommendations on criteria that we believed these two countries would need to meet for such proposals to succeed. Among the guiding principles the working group considered important to address were the following:

- ensuring that any offtakes are biologically sustainable and based on good monitoring;
- ensuring that incentives from any hunting opportunities are maximized, without discriminating between state agencies and the private sector;
- rewarding good biological management and long-term commitments to black rhino conservation; and,
- ensuring that appropriate internal and external controls are in place.

[35] P.M. Brooks, *Sustainable Resource Use Options for Surplus Male Black Rhino in South Africa: An Opinion Survey and Recommendations* 1–11, Unpublished report for the Rhino Management Group (2000); A Conway, R. Blok, D. Balfour, S. Thusi, P. Hartley J. Cooke, & H. Mthembu, *Strategy for the Disposal of Surplus Black Rhino Males* (Diceros bicornis minor) *from EKZNW Protected Areas* 1–5 (2003), unpublished report of Ezemvelo KZN Wildlife.

[36] *Id.*

[37] Emslie & Brooks, *supra* note 29.

[38] S.A. Long, *Livelihoods and CBNRM in Namibia: The Findings of the WILD Project* (2004), Ministry of Environment and Tourism, Namibia.

4. RECOMMENDATIONS FOR FUTURE BEST PRACTICE IN HUNTING BLACK RHINOS

Based on the above guiding principles, the AfRSG recommends that the following measures should be taken in the event of a proposal by either South Africa or Namibia to trophy hunt black rhino.

4.1 External Controls

4.1.1 CITES

A proposal for a CITES-approved national quota is considered a prerequisite, as CITES is the most internationally acceptable regime for critically endangered species. When approved, this would open participation to hunters from a wide range of countries, with less risk of stricter domestic measures being enforced in such countries.

We recommend that South Africa should submit the first proposal, given its previous success in using trophy hunting of white rhino as an incentive to conserve the species. South Africa should initially propose only the more numerous *D.b. minor*. This also could create a price premium in the event that Namibia puts forward a proposal for *D.b. bicornis*. An alternative approach would be for both South Africa and Namibia to copropose the hunting of both subspecies. The out-of-range South African population of *D.b. michaeli* should not be proposed on biological grounds.

4.1.2 Perceptions and Dialogue

An active public relations campaign should be mounted to address public concerns about proposals to allow hunting of black rhinos. The justification for hunting should be set forth, including (1) the improving biological status of the species; (2) the economic underpinning of incentives for conservation; (3) the nature of ethical hunting; (4) the previous successful experience with white rhino; (5) the record of programs to sustainably use other Appendix I species, such as leopard, cheetah, and markhor.

4.2 Internal Controls

4.2.1 Policy

The aim of proposing the trophy hunting of black rhinos should be included in the respective national rhino policies of proponent countries. The revision of the current black rhino management plan for South Africa should provide the opportunity to include the conditions under which black rhino can be hunted. A generic code of conduct should be developed for the hunting industry and provide the basis for guidelines to hunt black rhino ethically.

4.2.2 Legislation

The legislation of each province in South Africa should be checked to ensure that possible listings of black rhinos on protected species schedules, and similar lists, do not conflict with the legality of hunting.

4.2.3 Institutional Linkages

The linkages between provincial and the national CITES management and scientific authorities should be improved to ensure an effective permitting system. In particular, the Department of Environmental Affairs and Tourism in South Africa should demonstrate it can obtain accurate information from provinces regarding sales and hunts, as well as keep track of interprovincial movements and exports of live rhinos and hunting trophies. The permitting system should show it is fully effective for white rhino trophies before proposing the trophy hunting of black rhino. This effectiveness should be subject to external audit by TRAFFIC.

4.3 Management

4.3.1 Size of Quota

The national quota should not exceed 1 percent of the national population of the relevant subspecies in the proponent country. This relatively low quota is recommended initially to follow the successful model for white rhino.[39] Based on South Africa's and Namibia's current black rhino populations, this will equate to a national quotas of 10 *D.b. minor* and 10 *D.b. bicornis* per annum. A related advantage is that these low quota will help keep prices at a premium.

4.3.2 Type of Animal

(1) Sex: There is often a surplus of males, especially in a small population and as a result of translocation of a breeding group out of a donor population.[40] Therefore, it is recommended that only males should be hunted. Furthermore, although well-monitored, postproductive females could theoretically be included, but the hunting of females of a threatened species is likely to be badly received by the international community.

(2) Age: Preference should be given to the hunting of geriatric or postreproductive males. However, males under 7 years could also be hunted, especially where they have fought excessively, broken out, disrupted the existing social structure, or have been the main contributor to breeding in a small population. Allowing some of these younger adult males in the hunt also would

[39] Adcock & Emslie, *supra* note 22.
[40] Conway et al., supra note 35.

ensure that private owners would not have to wait 25 years before they became eligible to hunt.

4.3.3 Type of Weapon

Sporting rifles, not bows, are recommended because they are perceived to be more humane and efficacious than bows.

4.3.4 Financial Sustainability

The proposal should demonstrate that the management regime will reinvest revenues into rhino conservation. In practice, this will be achieved in South Africa because most provincial authorities that will hunt rhinos are executive agencies that can retain and direct revenue. The possible exception is Limpopo Province, where relatively few black rhinos would currently be available to hunt. In Namibia, the Game Product Trust Fund has been established for just such a purpose.

4.5 Allocation of the National Quota Among State and Private Sector

Allocation of the national quota should include the private sector, where the issue of surplus males is most prevalent and where a system of incentives needs to be created to encourage ongoing conservation of black rhino on private land.

The proposed system is based on a combination of an initial screening, a weighted lottery, and an auction. The rationale aims to encourage private owners to establish large rhino populations and to encourage trophy hunting options on state land.

Step 1. Screening for Eligibility to Enter Lottery

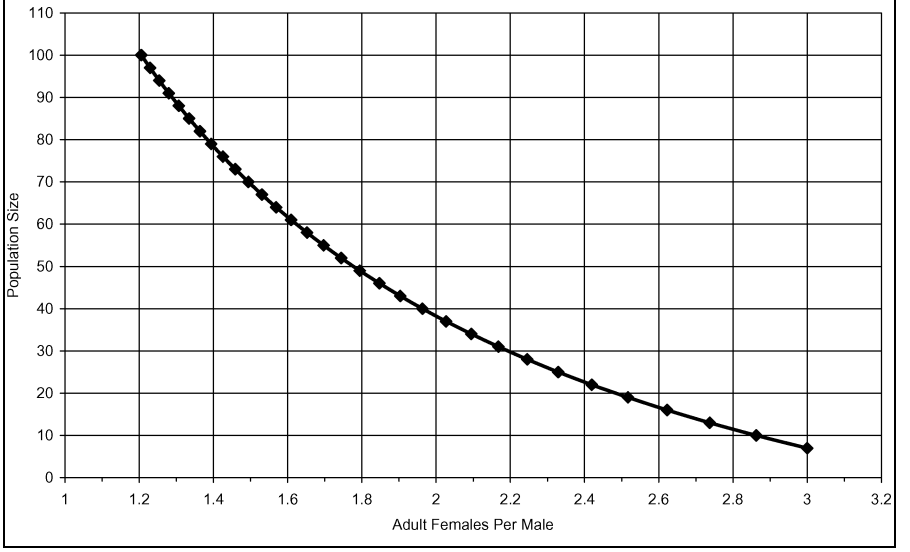
Eligibility depends on meeting the following criteria, which partially follow existing KwaZulu-Natal criteria for selling rhinos to the private sector.

Population

The population where the hunting is proposed should:

1. be larger than 6 individuals;
2. have a natural ecological carrying capacity (ECC) >10 individuals;
3. have no fewer than 1 male to 3 females; the sex ratio should be scaled to a ratio of 1:1.2 in populations approaching 100 individuals (see Figure 1); and
4. be free-ranging, with strategic food supplementation only.

FIGURE 1. The scaling of sex ratios in relation to different sizes of black rhino populations proposed for hunting



Individuals

The proposed individual to be hunted should:

1. have been on the property for a minimum of 3 years in a breeding situation, to promote longer-term commitment by private sector to breeding goals; and
2. constitute no more than 15 percent of the population.

Biological Management

The population where hunting is proposed should submit annual status reports for approval to the Rhino Management Group (RMG) and willingly participate in meta-population management.

Step 2. The Lottery Process

A transparent process is proposed in which both state authorities and private owners have equal opportunity to propose black rhinos for trophy hunting. For eligible populations, the lottery process will take into account a combination of population size and numbers of males to be offered for hunting. The process is designed to encourage the development of larger populations, particularly in the private sector.

The proposed lottery is based on a system of non-transferable, individually identifiable tickets assigned to an individual rhino proposed for hunting.

TABLE 1. Suggested Numbers of Lottery Tickets to be Allocated for Each Black Rhino Male Proposed for Hunting, Based on Size of the Host Population

Number of tickets	Population Size
1	7–15
2	16–30
3	31–50
4	>50

For each rhino proposed, a one-time non-refundable levy will be charged to cover the costs of the lottery system and oversight of the screening by the RMG.

Each rhino will be allocated a number of tickets according to the size of the host population (see Table 1). Once a rhino on a property has been drawn from the lottery, its remaining tickets will be removed.

Step 3. Auction

To maximize financial returns, black rhino hunts should be auctioned in as international a venue as possible. Revenue could be further maximized by offering black rhinos as part of a larger "Big Five" package.

5. CONCLUSIONS

Any proposals to hunt as charismatic a flagship species as black rhinos will be controversial.[41] In the event that such proposals are advanced in an international forum, IUCN-SSC's AfRSG was concerned to ensure that certain guiding principles should be followed. While we recognize that certain elements of our recommendations, notably the mathematics underlying the lottery (Table 1), may need refinement, we believe that our proposals address the key issues in sanctioning any form of sustainable use,[42] namely, of ensuring sustainability, maximizing incentives across sectors, rewarding good management, and ensuring appropriate controls.

6. POSTSCRIPT

In 2004, both South Africa and Namibia submitted proposals to CITES to hunt black rhinos. The 13th Conference of Parties approved a quota of 5 *D.b. minor* for South Africa, and a quota of 5 *D.b. bicornis* for Namibia.

[41] Hutton & Dickson, *supra* note 19.
[42] Hutton & Leader-Williams, *supra* note 10.