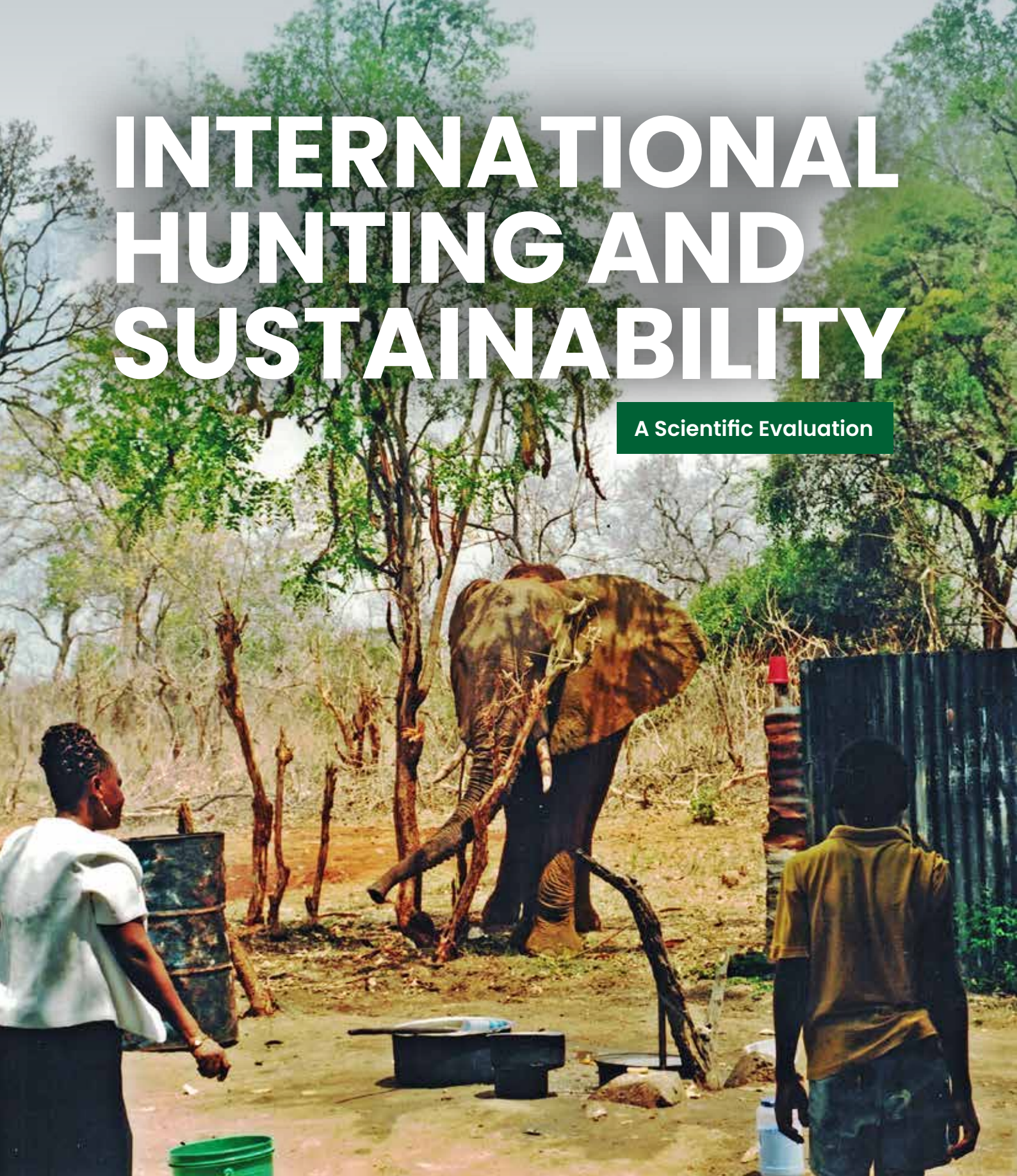


# INTERNATIONAL HUNTING AND SUSTAINABILITY

A Scientific Evaluation



Commissioned by:  
The German Delegation of the CIC

## TABLE OF CONTENTS

<b>FOREWORD GERMAN DELEGATION OF THE CIC</b> .....	03
<b>FOREWORD PROFESSOR ADAM HART, UNIVERSITY OF GLOUCESTERSHIRE</b> .....	04
<b>1. OBJECTIVE</b> .....	06
<b>2. TROPHY HUNTING, OVERSEAS HUNTING, INTERNATIONAL HUNTING?</b> .....	07
<b>3. „SOME ANIMALS ARE MORE EQUAL“: THE MEDIA PERSPECTIVE</b> .....	09
<b>4. INTERNATIONAL HUNTING AS A SUBJECT OF SCIENTIFIC INVESTIGATION</b> .....	10
<b>5. ECOLOGICAL IMPACTS OF INTERNATIONAL HUNTING</b> .....	12
5.1 Species Conservation and Recreational Hunting	
5.2 Positive Ecological Effects of International Hunting	
5.3 Negative ecological effects of international hunting	
<b>6. ECONOMIC DEVELOPMENT THROUGH INTERNATIONAL HUNTING</b> .....	16
6.1 The Economic Importance of International Hunting in Africa	
6.2 „Community-based natural resource management“: Ideal for Utilizing Wildlife	
6.3 Economic Consequences of Hunting Bans and Import Restrictions on Trophies	
<b>7. SOCIO-CULTURAL ASPECTS OF HUNTING TOURISM</b> .....	19
<b>8. CONCLUSION</b> .....	21
8.1 People Protect What They Value	
8.2 Ecological Effects	
8.3 Economic Effects through „Community-based Management“ of Natural Resources	
8.4 Import Bans or Restrictions on Trophies Endanger Conservation Efforts	
8.5 Hunting Tourism and Photo Tourism: Two Sides of the Ecotourism Coin	
8.6 Responsibility Ethics vs. Ethics of Conviction	
<b>BIBLIOGRAPHY</b> .....	27

### AUTHORS AND CONTRIBUTORS

Author: Prof. Dr Dr Sven A. Herzog  
Editor: Hannes Siege  
Translator: Tristan Breijer  
Design: dieMAYREI GmbH, Donauwörth

Printing: WIRmachenDRUCK GmbH  
Publisher: Verein zur Erhaltung des  
Wildes und der Jagd im CIC e.V., Röpkestr. 20,  
40235 Düsseldorf, www.CIC-wildlife.de

## FOREWORD

In the debate about international hunting, emotional arguments and deeply ingrained convictions often take centre stage. As Sven Herzog writes, the term 'trophy hunting' is sometimes used with 'discriminatory intent'. Africa's iconic wildlife, including lions, elephants, and rhinoceroses, provides anti-hunting activists and animal rights advocates the best opportunity to reinforce general prejudices against hunting. They have identified hunting abroad as the 'soft flank' of wildlife use, and their political allies use the ban on trophy imports as a political lever to appease the anti-hunting lobby in various countries.

By examining empirical data and considering numerous studies, Sven Herzog questions whether the rejection of international hunting truly serves the interests of nature conservation and animal welfare. He questions the effectiveness of alternatives such as photo tourism and examines how well-regulated overseas hunting can contribute to species conservation and the economic empowerment of African communities. International hunting, under strict regulations and in a sustainable framework, plays a key role in preserving biodiversity. It not only enables the generation of essential revenue for protected areas but also supports local communities by creating jobs and generating income.

This study is an invitation to critical thinking and questioning established assumptions. It urges readers to look beyond the surface of emotional rhetoric and see international hunting in a new light—as a promising way to tackle the conservation challenges in Africa.



Dr. Steffen Koch,  
Head of the German  
Delegation in CIC



Hannes Siege,  
Deputy Head of the German  
Delegation in CIC



**Professor Adam Hart,  
University of Gloucestershire,  
Co-author of Trophy Hunting,  
winner of the Marsh Ecology Book  
of the Year Prize, 2023**

We are living through, and are the cause of, an extinction event. Our activities, our huge demands on the planet, are without doubt the cause of this biodiversity crisis. Habitat loss is key among the threats we pose, because if flora and fauna have no place to live then extinction becomes a reality. We urgently need to find ways in which we can co-exist with the natural world such that we retain habitat. However, most of our land-uses, like agriculture, mining, towns, cities and roads, are at odds with that goal. Economic return and growth seem mostly to require land uses that destroy, rather than promote, habitat.

One land-use that can conserve habitat is recreational hunting. Initially counterintuitive, the idea that hunting can help conservation is also deeply controversial. Many people around the world feel that hunting animals is morally wrong, and that hunters who will pay for the pleasure of hunting are “sick”, “evil” and worse. However, the reality is that, in many places, clients paying to hunt specific animals can provide enough revenue to prevent habitat being converted into other land-uses that will not support a natural ecosystem. Many hunters will in fact pay very large sums to hunt individual animals with particularly large horns, antlers, tusks or other “trophies”. Revenue from hunting tourists, and especially these so-called

“trophy hunters”, can pay salaries, fund anti-poaching patrols, maintain infrastructure and so on. But of course, the flip side of this coin is that, if poorly regulated and managed, hunting can rapidly reduce biodiversity. Unscrupulous operators and officials meanwhile can also make sure that little of the revenue raised goes to those people living within and around hunting areas.

Currently, many Developed World nations are considering imposing “trophy bans” of one form or another, usually motivated by the fact that they believe trophy hunting to be a threat to conservation. Typically, these bans seek to prevent the importation of hunting trophies, either from any animal, or from animals identified as threatened in some way. These proposals are usually very popular among the public, and among politicians seeking easy wins. It is a curious hypocrisy that many of the nations proposing bans often themselves have thriving trophy hunting industries, which of course are not threatened by import bans. Nations like the UK push for bans while languishing at the bottom of global conservation league tables, all the while hosting overseas hunters paying huge sums to shoot red deer in the Scottish Highlands or grouse on the Yorkshire moors. Meanwhile, nations like Botswana, Namibia and Zambia head

those same league tables, and use regulated trophy hunting as part of their, highly successful, conservation tool kit.

On one side then there are strong voices calling for bans, while on the other are those that maintain hunting is good for conservation. As is often the case, there is a balance point between these two positions and many conservation scientists, including me, are trying to find that balance. Hunting can be a useful conservation tool, but it can also have problems relating to animal welfare, conservation and revenue sharing. Politicians and the public must navigate this challenging landscape with little experience or understanding, and to do so against a backdrop of highly partisan campaigning, and in some cases active misinformation.

In this study, Sven Herzog provides some waymarks and paths for those trying to navigate this difficult debate. Those readers of a cynical disposition will doubtlessly point to the fact that this study was commissioned by the International Council for Game and Wildlife Conservation, a hunting organization. However, if you are such a reader then I would point you to the many reports condemning hunting published by large, global NGOs campaigning for bans and ask whether you apply

that same level of cynicism to those? Do not be fooled into thinking that the trophy hunting debate is simple, no matter which side of the fence you are on. It is far from straightforward and there is no definitive answer to whether trophy hunting is good for conservation. The reality is that it depends on where it undertaken, what species are targeted, which economic model is used, and so on.

I have seen much of the information presented to politicians in the UK, and I have watched the parliamentary debates. It is woefully clear that, while many politicians want to help conservation, they are being served poorly by the information they receive. What is desperately needed in this debate is far less campaigning rhetoric (from both sides), and far more evidence-led discussion, based on reliable sources. This report dives into some of that evidence and provides a counter narrative to the one most politicians will have heard. That is refreshing. After all, it is only by receiving a range of information will they be able to decide whether bans are really such a good idea.

Professor Adam Hart



Two tons of meat for the people in the hunting area – Matetsi, Zimbabwe.

## 1. OBJECTIVE

This study aims to provide an overview of scientific findings on the impacts of hunting tourism from ecological, economic, and socio-cultural perspectives, based on selected studies from various geographic regions. It also aims to shed light on current political developments both in Europe (import bans) and in the host countries (hunting bans) and to assess these developments based on a synthesis of selected examples.

At this juncture, we must consider which terms to use in this study to ensure an unbiased and value-neutral approach. „Trophy hunting“ is a common term in everyday language and scientific literature, but it is often used inconsistently and sometimes with discriminatory

intent. In most contexts, it is not clear what meaning is intended. Furthermore, one sometimes gets the impression that even the authors of a text are not really clear about which connotation is being addressed. The term „trophy hunting“ is therefore often nothing more than a „buzzword,“ an empty trendy term that generates media attention. Therefore, we should avoid using this term.

Against this background, it seems important to find a neutral, geographically open, and non-discriminatory term that accurately describes the issues previously referred to as „trophy hunting.“ The terms „hunting tourism,“ „overseas hunting,“ or „international hunting“ are suitable here (cf. Siege & Siege 2020).

## 2. TROPHY HUNTING, OVERSEAS HUNTING, INTERNATIONAL HUNTING?

Before we delve into the substantive questions more intensively, we should clarify and differentiate between some terms.

In addition to the terms „trophy hunting“ and „hunting tourism,“ we frequently encounter terms such as „overseas hunting,“ „international hunting,“ „sports hunting,“ „safari hunting,“ and increasingly „conservation hunting.“

At this point, we ought to ask ourselves which terms we should use within the framework of this study to achieve a neutral and unbiased approach.

„Trophy hunting“ is a common term both in everyday language and in the scientific literature, but it often has pejorative and sometimes even discriminatory connotations.

The specific meaning of the term often remains unclear, as does the connotation intended by the author. Furthermore, the expression „trophy hunting“ often does not go beyond a „buzzword,“ a meaningless trend term that primarily attracts media attention. We should, therefore, use this term cautiously. In this context, it is essential to find a neutral, geographically and discriminatively neutral term that describes the matter that has been broadly referred to as „trophy hunting“ as accurately as possible. Terms such as „hunting tourism,“ „overseas hunting,“ or „international hunting“ offer themselves here (cf. Siege & Siege 2020).

The term hunting tourism is defined by the social and economic processes it involves: „Tourism“ refers to a temporary change of location by individuals to destinations outside their usual living and working environments, typically for recreational purposes. Tourism as an industry is a relatively distinct sector in most regions of the world, which undertakes the task of enabling people to engage in this form of recreation. Hunting tourism is thus a phenomenon of so-called „leisure hunting,“ an evolutionary stage of human hunting (unlike subsistence hunting or market hunting,



Photo: Dr. Ludwig Siege

**In all cultures, hunting trophies had a ritual significance: dancers with colobus monkey, leopard, and kob antelope in Gambella, Ethiopia.**

see Herzog 2019), characterized primarily by the fact that hunting is not conducted to secure one's own livelihood.

In this context, it is irrelevant whether a hunter travels from one country to another for hunting, whether it's within Europe or in Africa. The reasons for hunting are also insignificant. Whether the motivation for hunting is to socialize with like-minded hunters, to take down

a particular game animal, or simply to experience a unique nature experience. Even if some common definitions fundamentally exclude this (Fennell 2015, Shannon et al. 2017), hunting tourism can certainly also be interpreted as a form of nature or ecotourism (for a more detailed discussion, see Ellenberg et al. 1997, Strasdas & Zeppenfeld 2011, or Siegf & Siegf 2020), provided it is carried out sustainably and resource-efficiently. „Overseas hunting“ describes hunting by the hunter as an „overseas hunter,“ i.e., someone who hunts outside their home country. The specific circumstances of this hunting and/or their motives are not further evaluated. The term „international hunting“ behaves practically synonymously. The latter seems overall more appropriate as it refers more to the

hunting actions themselves rather than the perspective of the hunter.

It is important not to equate „international hunting“ and „canned hunting,“ i.e., the hunting of animals in fenced areas rather than in free-ranging wild habitats. The subject of canned hunting will not be explicitly addressed in this study.

Furthermore, the term ‚illegal hunting,‘ often deliberately or unintentionally equated with ‚trophy hunting,‘ should be referred to as ‚poaching‘ to avoid confusion (cf. Bauer et al. 2015). Finally, a clear separation between the action itself and its consequences on one hand and the motive of the action on the other is an essential prerequisite for an objective discussion of the subject.

**Often overlooked by the public: Hunters from the Netherlands or Denmark also hunt abroad in Germany.**



Photo: Dr. Ludwig Siegf



Photo: Dr. Ludwig Siegf

### 3. „SOME ANIMALS ARE MORE EQUAL“: THE MEDIA PERSPECTIVE

**In the Ngorongoro Crater: The image of the „King of the Beasts“ often shapes the media’s perspective.**

The media frequently portray powerful images of white hunters posing dominantly over hunted wildlife under the African sun. In contrast, images of driven hunts in regions such as central Europe and Scandinavia, conducted by guest hunters from various countries, are much less frequently seen.

The killing of the lion Cecil in 2015 in Zimbabwe triggered the largest public media reaction to date (cf. Lindsey et al. 2016, Macdonald et al. 2016). Siegf & Siegf (2020) refer to this event, which was strategically publicized by international NGOs, as „the 9/11 of overseas hunting.“ As a result, France, the Netherlands, and Australia have banned the import of trophies from lions and other species. The United Kingdom and Germany have each intensely and publicly debated a ban on trophy imports. Some countries have since required even more comprehensive documentation of sustainable management before allowing trophy imports, and more than 40 airlines now refuse to transport hunting trophies (Carpenter and Konisky 2019).

The fact that red deer in Bavaria or Saxony can be more endangered than elephants in northern Botswana is just as irrelevant in public representation as the fact that ethical minimum standards for hunting exist both here and there,

sometimes adhered to more, sometimes less. Often, the media evaluation lacks a balanced assessment of the circumstances concerning their impacts. To stick with the example mentioned above: while the presence of even a large number of red deer in Germany can at most lead to grazing damage in forests and fields, but does not seriously threaten anyone’s livelihood or health, elephants can indeed threaten the economic existence of entire families or village communities. People are regularly injured or killed by elephants. Elephants, therefore, along with lions, are among the most hated animal species among residents of rural African areas (Packer 2015). Nevertheless, we find in most, at least publicly funded media reports, the narrative that red deer should be culled, and elephants should be protected.

The question of how this division in media perception comes about cannot and should not be the subject of this study. However, we must never lose sight of the fact that numerous extraneous factors are at play in the analysis of the phenomenon of „international hunting“: wild animals are always projection surfaces for deep human, also very personal emotions, from which journalists and other media professionals, but also scientists, are by no means free.

## 4. INTERNATIONAL HUNTING AS A SUBJECT OF SCIENTIFIC INVESTIGATION

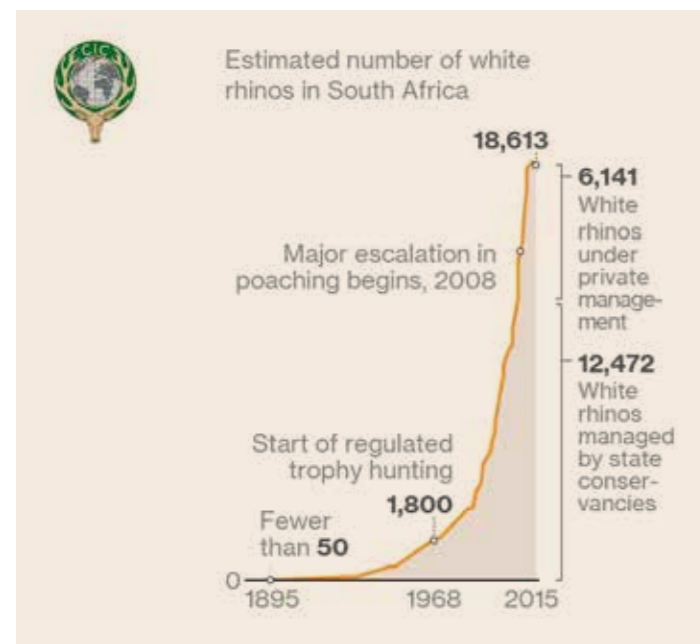
For many decades, international hunting tourism, and its effects on local ecosystems, as well as on local economic and social conditions, have been the subject of scientific investigations, a current selection of which is analysed below. It is to be expected that different authors will approach this topic from different professional angles, i.e., ecological, socio-economic, and socio-cultural perspectives, and thereby come to different results. Interestingly, sometimes disturbingly, and in any case, concerning, is the fact that the professional standards that should be applied to a scientific publication are not always guaranteed in publications on the subject of „hunting.“ Regularly, we find publications in quite reputable scientific journals that merely

convey a preconceived opinion of the authors. For example, Horowitz (2019) writes in a commentary on the work of Dickman et al. (2019): „...Their premise is not sustainable in light of fundamental morality. Whether we agree with Dickman et al. or not, wildlife has the fundamental right to exist independently of human existence and human interests. The intentional killing of animals to satisfy the whims of wealthy individuals is despicable. No potential benefit, not even those presented by Dickman et al. as advantageous for wildlife, justifies undermining the moral foundation of the protection of the Earth’s natural resources. It is our responsibility to suppress the destructive tools at our disposal to ensure these resources remain intact. Killing endangered species is based on an apparent fallacy. Our most urgent concern is to restore endangered species to their former state, regardless of human interests. If it is not necessary for basic survival, hunting in all forms should be eradicated like the smallpox virus...“

A professional debate on the question of ethics and especially the ethical implications of the phenomenon of „hunting“ is always welcome. However, pure (albeit entirely legitimate) personal opinions have no place in a scientific publication. The relevant platforms of social media provide the appropriate forum for such comments.

It is also noticeable that many studies focus on the countries of the Global South, particularly Africa. This may be due to the availability of funding, the impact of large iconic mammal species on a lay audience, or the personal socialisation of the respective authors.

Finally, a pronounced lack of interdisciplinarity in the research is noticeable (cf. Bichel & Hart 2023). An approach that aims to understand the nature of hunting tourism must be fun-



**Often ignored by the media: since the 1960s, international hunting has contributed to the preservation of species such as the southern white rhinoceros in South Africa.**



Photo: Dr. Ludwig Siege

damentally interdisciplinary, as it is a complex topic with many different facets that need to be analysed from ecological, economic, and socio-cultural perspectives. This phenomenon is likely related to the aforementioned fact that even in peer-reviewed scientific journals, the two (fundamentally opposing) perspectives are regularly presented without distinction. When the data situation does not allow for such a distinction (which is quite often the case), this problem must at least be critically discussed. The present study follows an interdisciplinary approach by attempting to analyse the ecological, economic, and socio-cultural impacts of international hunting. The aim is to summarise the results of different studies with different specialist focuses in a synopsis. The starting point, following the disciplinary study situation,

is first of all the question of which:

- ecological,
- economic, and
- socio-cultural

effects of international hunting are verifiable. These questions will be answered by analysing selected scientific and other specialist publications on this topic and, on this basis, an interdisciplinary assessment of the phenomenon of „international hunting“ will be attempted. It is not always easy to make a clear distinction between the three dimensions of sustainability. They are often causally interrelated. This is regularly the case when, as we will see, the utilisation of the value-creation potential of wild animals creates improved local economic conditions, which in turn create incentives and potential for conservation measures.

**Numerous scientific studies have shown the positive effects of international hunting: here the radio-collaring of an elephant.**



This is likely to be viewed critically: Hunting outfitters often advertise with such images. Yet international hunting means much more than just the trophy.

## 5. ECOLOGICAL IMPACTS OF INTERNATIONAL HUNTING

### 5.1 Species Conservation and Recreational Hunting

There is a broad consensus today that the main causes for the decline of large mammals are habitat loss and degradation, competition with livestock farming, poaching for meat and the trade in animal products (ivory, horn, etc.), as well as persecution due to direct conflicts between humans and wildlife (cf. Schipper et al. 2008). This is not always clearly communicated in secondary and tertiary literature, as evidenced by the current CMS/COP report, which indiscriminately equates

„over-exploitation“ with „hunting.“

There is also widespread agreement today that sustainable use, including sustainable hunting, is one of the most important, if not the most important, instruments for the conservation of both endangered and non-endangered species and their habitats worldwide (cf. Herzog 2019). A recent meta-analysis of 1,000 scientific and professional publications from the period between 1953 and 2020 emphatically confirms this (Di Minin et al. 2021).

### 5.2 Positive Ecological Effects of International Hunting

When examining the dominant issues in the protection and management of wildlife populations today, we must consider how international hunting can contribute to these efforts. Key approaches in this context include:

- Maintaining appropriate population sizes and social structures of the hunted species
- Preventing poaching and illegal trade in wildlife products
- Preserving largely intact ecosystems

- Providing the necessary financial resources for species protection
- Particularly the last point has significant economic implications, which will be discussed further in the appropriate context. Furthermore, we must differentiate between sustainable and non-sustainable hunting. Today, we possess extensive knowledge about the biology and ecology of hunted species and their habitats. Numerous wildlife management tools are

available today (cf. Herzog 2019), enabling and supporting sustainable management. The question is no longer whether we should hunt wildlife populations but how to do it sustainably to protect and conserve species and populations. This „how“ is determined by biological and ecological facts and the threat status of the species or population.

For over a century, the challenges of protecting Africa's iconic large mammals and corresponding solutions have been discussed (cf. Schillings 1906, Seton-Karr 1908). In the latter half of the 20th century, conservation thinking and ecosystem thinking gained increasing importance in the industrialized countries of the North. In this intellectual environment, the effects of international hunting and hunting tourism on species and ecosystems, particularly the African savanna landscapes, have been explored and investigated.

Adams (2004) describes that since the mid-20th century, international hunting has been a crucial factor in conserving numerous, not exclusively iconic, wildlife species in sub-Saharan Africa.

The example of the two rhino species in South Africa and Namibia is impressive, showing that sustainable hunting, including the legal export of trophies, can significantly contribute to the protection of these species and their habitats. The population of the southern white rhinoceros (*Ceratotherium simum*) in South Africa and Namibia has increased from about 1,800 individuals in the late 1960s to over 18,000 individuals in the mid-2010s due to sustainable hunting practices. The black rhinoceros (*Diceros bicornis*) has also seen a population increase from around 2,300 individuals in 2004 to about 3,700 individuals in 2014 (cf. Cooney et al. 2017, 't Sas-Rolfes et al. 2022).

For instance, the protection of North American bighorn sheep (*Ovis canadensis*) has been financed mainly through revenues from hunting and hunting tourism. After the population decreased from about one million in the early 19th century to about 25,000 individuals in the 1950s for various reasons, it has more than tripled since then due to conservation measures financed by hunting revenues (Hurley et al. 2015).

A similar situation exists for the bighorn sheep

of Mexico on Tiburon Island, which went extinct for unknown reasons and were reintroduced by local indigenous communities. Within a few decades, their population has increased more than twentyfold under hunting management and now probably aligns with the habitat's carrying capacity (Valdez et al. 2006, Wilder et al. 2014, Hurley et al. 2025).

The conservation of the endangered Suleiman markhor (*Capra falconeri megaceros*) and the Afghan urial (*Ovis ammon orientalis*) is also a success attributed to international hunting. In the 1980s, there were estimated to be fewer than 100 individuals of the former and around 200 individuals of the latter in Pakistan. Through intelligent community-based management („community-based management“), funded by revenues from international hunting, the populations of the markhor have increased to about 3,500 individuals, and the urial population has grown to around 2,500 individuals, thus saving these subspecies from extinction (Woodford et al. 2004, Frisina & Tareen 2009).

The sustainable management of wildlife under international hunting includes more than just protecting, conserving, or reintroducing individual species. Di Minin et al. (2016) review the impacts of international hunting on conservation in sub-Saharan Africa, concluding that hunting tourism can maintain or enhance regional biodiversity through three main mechanisms:

1. Funding for conservation projects,
2. A relatively low CO2 footprint compared to other forms of ecotourism,
3. Special protection for populations of hunted species.

The authors conclude that non-specific hunting bans or restrictions on importing hunting trophies can have highly negative impacts on the overall conservation situation in the region. Cooney et al. (2017) illustrate how international hunting positively impacts different regions of the world through various approaches:

- Direct incentives for landowners (state, community-based, or private) to protect wildlife,
- Generating financial resources for conservation, including anti-poaching efforts,
- Reducing illegal wildlife killing through increased tolerance of wildlife.

Dickman et al. (2019) respond to increasing in-

initiatives aiming to ban the hunting of specific iconic species, particularly in Africa, or to impose import bans on trophies of these species in Northern countries. They argue that such initiatives, if successful, would significantly harm conservation efforts. In African countries with hunting tourism, more land is used for hunting than for total reserves without hunting, and banning hunting would quickly lead to converting these areas into agricultural land, including grazing areas or settlements, resulting in the loss of valuable ecosystems and biodiversity. Decades after Kenya banned hunting in the 1970s, there has been a significant decline in

wildlife populations, especially the iconic species (cf. Child 2000). Ogotu et al. (2016) also show a continuous decline in various wildlife species in Kenya from 1977 to 2015, correlating with an increase in livestock. This trend appears unbroken. Similarly, the situation in Uganda, Botswana, and Malawi, or in countries like Somalia, which currently have neither functioning reserves nor sustainable hunting systems (Amir 2006), is barely studied. The question arises whether the presence of legal hunting activities can significantly reduce illegal hunting and poaching through the mere presence of legal hunting activities. Observations and initial scientific studies support this hypothesis.

Studies suggest that illegal land users, settlers, and poachers tend to avoid areas with established hunting management and anti-poaching patrols, thereby enhancing conservation efforts (Strampelli et al. 2022). In Botswana, conflicts between humans and wildlife increased after a hunting ban was imposed. The number of documented conflicts rose from 4,361 in 2012 to 6,770 in 2014 (Mbaiwa 2018).

Areas where hunting tourism is abandoned due to import bans and restrictions are unprotected from negative human impacts. Valuable ecosystems are lost this way. A study in the Selous and Rungwa game reserves found that poaching was significantly lower in areas with active hunting concessions compared to those without (exceptions: elephants), with less poaching in the Selous where there were more hunting concessions than in Rungwa (Lyakurwa et al. 2020).

In addition to these direct impacts, international hunting also has numerous indirect effects. The most important indirect effects are the creation of local incomes through international hunting, leading to increased acceptance of wildlife species that might otherwise be intensively persecuted in human-wildlife conflicts. As long as wildlife is seen solely as a liability and has no economic value, uncontrolled killing, for example, of lions regularly preying on livestock, can easily lead to unsustainable regional over-exploitation due to spill-over effects.

Another crucial contribution of international hunting is preventing poaching through the financing of specific anti-poaching structures.



Photo: Hannes Siege



Photo: Hannes Siege

**In areas where hunting is not permitted, poaching, which includes the use of snares, is a frequent occurrence.**



Photo: WikiCommons

**Ethically indefensible: hunting farms and enclosures offer special breeds as unique trophies. Here, a „Golden Gnu.“**

### 5.3 NEGATIVE ECOLOGICAL EFFECTS OF INTERNATIONAL HUNTING

Concerns are frequently raised that hunting tourism may have negative ecological impacts. In this context, the risk of poorly or unsustainably managed game species negatively impacting plant and ecosystem diversity is often cited. Other authors argue that international hunting has led to long-term declines in certain species populations, particularly in

regions where hunting pressures exceed the natural population growth rates (e.g., Ripple et al. 2016). Similarly, inappropriate or excessively hunting quotas have been associated with decreases in certain species (e.g., lions and leopards) (Bauer et al. 2015).

An example of this is the danger of overhunting leading to long-term population declines, as documented for certain ungulate species (e.g., white rhinoceros) and apex predators (e.g., lions). Trophy hunting, particularly of older males, has also been criticized for potentially disrupting social structures and reproductive success in species like elephants and big cats (Whitman et al. 2004; Milner et al. 2007). Additionally, the illegal hunting of high-value species (e.g., rhinoceroses for their horns) exacerbates the risks posed by legal hunting activities.

The selective hunting of specific individuals based on their trophy value can lead to genetic and demographic changes within populations. This selective pressure may favour individuals with less desirable traits (e.g., smaller



**Not sustainable: artificial breeding.**





Hunter and photographer Carl Georg Schillings was already dedicated to conservation-based hunting (gamekeeping) in 1898.

horns or antlers) and can impact the genetic diversity and health of the population over time (Coltman et al. 2003; Darimont et al. 2009). Despite these concerns, it's important to note that well-regulated hunting programs can

mitigate many of these negative effects. However, improper management or lack of enforcement can result in over-exploitation and long-term ecological damage.

Several studies have shown that international hunting tourism can be a significant source of funding for conservation efforts, helping to protect large tracts of habitat and support anti-poaching measures (Lindsey et al. 2007; Dickman et al. 2019). Nevertheless, the balance between conservation benefits and ecological risks remains a critical issue for sustainable wildlife management.

## 6. ECONOMIC DEVELOPMENT THROUGH INTERNATIONAL HUNTING



Worldwide hunting travel offers at the „Jagd und Hund“ fair, Dortmund.

### 6.1 The Economic Importance of International Hunting in Africa

The economic significance of international hunting naturally varies depending on the geographic region and societal conditions. In Africa, hunting tourism is prevalent in 23 countries, with the industry being particularly significant in Southern Africa and Tanzania. In Central and West Africa, hunting tourism either remains stable or is declining. Hunting tourism in these regions occurs almost exclusively in an area of approximately 1,394,000 km<sup>2</sup> south of the Sahara, which is comparable to the size of Germany, Austria, and Italy combined (Lindsey et al. 2007).

The direct economic contributions of international hunting, such as its contributions to the Gross Domestic Product (GDP) of individual African countries, vary. Estimates suggest

that Tanzania, generates about 300 million US dollars annually, significantly impacting local communities. In other countries, such as Namibia and South Africa, the income from international hunting is similarly substantial, providing essential funding for conservation efforts and local economic development (see Siege & Siege 2020).

The generated income is crucial for the protection of natural habitats and offers higher financial incentives for conservation than other land-use forms, such as livestock farming or agriculture. Alternative land uses in these areas, like forestry or ecotourism, often do not yield comparable economic returns (Child 1988, Lindsey et al. 2007, Di Minin et al. 2016).

### 6.2 „Community-based natural resource management“: Ideal for Utilizing Wildlife

Looking back at the history of community-based management of wildlife, it becomes clear that such approaches have been effective in Africa since the 1960s. Early projects in countries like Kenya (Sindiyo 1968), Botswana, and Zimbabwe (ZIMBABWE 1975) started integrating hunting tourism into their conservation strategies. These projects have consistently demonstrated positive outcomes for local communities and wildlife conservation.

For example, Zimbabwe's CAMPFIRE (Communal Areas Management Programme for Indigenous Resources) program, initiated in 1989, aimed to integrate local communities into wildlife management. The program allocated hunting quotas and revenue-sharing mechanisms to communities, fostering local economic development and conservation efforts. This approach helped to mitigate human-wildlife conflicts and provided communities with financial incentives to conserve wildlife (Murphree 1990). Despite its successes, CAMPFIRE faced challenges such as delays in payments and economic instability in Zimbabwe, which affected



**Sustainable land use: In some cases, wildlife and livestock can complement each other, such as on cattle farms in Namibia.**

the effectiveness of the program. However, it remains a crucial model for community-based natural resource management in Africa and is often referenced in conservation policies (Frost & Bond 2008, Child 2002).



**Community-based management: A village hunt in a buffer zone at the Selous Game Reserve, and the meat is transported to the village by tractor.**



**Drying over fire and smoke makes wild meat durable.**

The economic benefits of international hunting are not limited to Africa. In Namibia, a survey across 77 communal conservancies from 1998 to 2013 showed that hunting tourism

contributed significantly to conservation financing and provided essential income for local communities (Naidoo et al. 2016).

### 6.3 Economic Consequences of Hunting Bans and Import Restrictions on Trophies

#### 6.3.1 Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

CITES, established in 1975, aims to regulate international trade in endangered species. The convention categorizes species into Appendices based on their conservation status,

with Appendix I including the most endangered species. The trade of these species is heavily regulated, and any commercial trade is prohibited. Appendices II and III include species that may not be immediately threatened but could become so if their trade is not strictly controlled.

**International agreements have contributed to making international hunting sustainable for decades: CITES COP 15 in Doha, 2010.**



Photo: Dr. Ludwig Siege

#### 6.3.2 National Hunting Bans and Import Restrictions

National bans on hunting and import restrictions can have significant impacts on local communities and conservation efforts. For example, when Botswana imposed a hunting ban in 2014, local communities suffered economically, leading to increased human-wildlife conflicts (Blackie 2019). Similar scenarios were observed in Kenya and other countries where hunting bans were implemented without providing alternative income sources for local communities (Ogotu et al. 2016).

Studies show that hunting bans often lead to negative economic and ecological consequences. For instance, the import ban on African elephant trophies in the U.S. from 2014 to 2017 resulted in a significant reduction in

hunting licenses sold, adversely affecting conservation funding and local economies (Nyamayedenga et al. 2021).

Clark et al. (2023) highlighted that such bans do not necessarily address the root causes of wildlife decline and may exacerbate the situation. They argued that well-regulated trophy hunting could be a more effective tool for conservation than outright bans, which often lead to unintended negative consequences for wildlife and local communities.

Overall, international hunting, when managed sustainably, can provide substantial economic benefits and support conservation efforts. It is essential to balance hunting regulations with the needs of local communities and wildlife conservation to achieve long-term sustainability.

## 7. SOCIO-CULTURAL ASPECTS OF HUNTING TOURISM

The socio-cultural impacts and implications of international hunting are diverse. They affect various areas, which can be divided into two main topics addressed in this chapter. These are the attitudes of hunting guests toward hunting activities and the attitudes of local populations toward hunting tourism, which will each be examined based on a study.

A survey of hunting guests (n=150) and African hunting tour operators (n=127) by Lindsey et al. (2006) found that hunting guests believe that hunting contributes to the protection of wildlife, even in areas where no attractive landscapes or significant wildlife populations exist. The presence of agriculture and livestock in a region is not necessarily a deterrent to hunting tourism. This demonstrates that hunting tourism can be viable where other forms of ecotourism may not be profitable. Hunting guests' attitudes towards the hunting conditions, particularly the safety of their hunting activities, are not seen as restricting conservation

measures. This is often not recognised by hunting operators. Moreover, some guests willingly adhere to such standards if required. Therefore, the authors believe that proper regulatory oversight of hunting is necessary.

Von Houdt et al. (2021) examined whether people's attitudes toward international hunting are influenced by their living conditions. They discovered significant differences in survey responses, particularly those from Africa, compared to other regions. It is noteworthy that the study was based on an online survey, which may have led to the underrepresentation of rural African areas.

The second major socio-cultural theme is the ethical implications. Most scientific studies focus on the ethical implications of (recreational) hunting as such (e.g., Gunn 2001; Lovelock 2015; Batavia et al. 2020; Darimont et al. 2021; Ghasemi et al. 2023) or the psychology of hunters (Darimont et al. 2017; Beattie 2020). The term „trophy hunting“ has rarely been analy-



Photo: Dr. Ludwig Siege

**A constant threat: Hundreds of people in Africa fall victim to elephants each year.**

sed scientifically from an environmental ethics perspective. Certain exceptions are the works of Macdonald et al. (2016), Nelson et al. (2016), and Batavia et al. (2019, 2020).

Macdonald et al. (2016) and Nelson et al. (2016) primarily argue from the perspective of responsibility ethics, similar to most authors who deal with hunting ethics. At the same time, many (fundamental) animal and nature conservation organisations exclusively accept a virtue ethics approach. Responsibility ethics

mean that an action is justified if it aims to achieve a moral good or avoid a moral evil. Virtue ethics is a theoretical approach where actions are assessed based on intrinsic values and principles, regardless of their consequences (Weber 1926).

Macdonald et al. (2016) formulated this conflict in the context of international hunting in Africa: „... Some opponents of trophy hunting consider it unjustifiable, regardless of potential positive impacts, and base their view on a moral commandment, which they trace back to the Kantian philosophy. ... Suppose the argument is, ‚the intentional killing of large cats by Western politicians is unacceptable,‘ then legislative responses to Western virtue ethical values may have far-reaching negative consequences for biodiversity. ... Those in the Kantian camp could take comfort in knowing that they are on a morally higher plane. But who would have influence, if these animals in Africa, which they could save, remain in misery as long as they could... „ (translated from the English by the author).

Thus, we can state that this topic can be deepened further and we, as in other societies, also have a conflict between virtue ethics and responsibility ethics in hunting. Most scientific publications take the responsibility ethics approach.

**In Malawi, women protect themselves from crocodiles while fetching water.**



Photo: Hannes Siege

## 8. CONCLUSION

### 8.1 People Protect What They Value

It has been shown that people who live in simple, often poverty-stricken environments alongside wildlife either tolerate or actively protect these animals if they value them. Such value arises primarily from incentives, typically through the direct economic benefits to communities and households from the use of these wild animals. The utilisation of free-ranging wildlife (whether through hunting or

photo tourism) is in direct competition with other, ecologically problematic land uses like agriculture and grazing.

The exploitation of the potential that wildlife offers provides the basis for sustainable, economic regional development that maximises the protection of natural resources, in this case, the local wildlife populations and their natural habitats.

Photo: Hannes Siege



**Lucky wildebeest, the trap did not tighten around its neck. Poaching decreases when wildlife gains value, for example, through regulated hunting.**

## 8.2 Ecological Effects

The vast majority of scientific studies to date indicate that international hunting, over the long term and broadly speaking over recent decades, has predominantly positive ecological impacts. These arise primarily from more intensive protection and sustainable management of the hunted species, their prey, and their habitats.

This occurs mainly through direct and indirect economic incentives. These issues will be further explored below.

The related value creation potentials contribute to reducing competitive land use forms such as intensive and often illegal grazing, which is increasingly a major cause of ecological problems in southern countries, especially in areas with high population pressure.

In contrast to photo tourism, hunting tourism has a significantly lower „ecological footprint.“

This is due to the considerably higher value creation per hunting guest compared to a photo tourist, while simultaneously requiring far fewer infrastructure demands (transportation routes, energy, water supply, goods supply, waste disposal, hotel construction, etc.).

The economic advantage of international hunting tourism extends beyond the CO2 footprint, encompassing factors like land use and landscape fragmentation. Essentially, hunting tourism is associated with far fewer interventions in ecosystems than most other tourism types.

Furthermore, the presence of legal hunting in an area significantly prevents poaching and illegal killing of wildlife, as locals, due to the conflict between humans and wildlife, are generally deterred from engaging in such activities by the presence of hunting personnel or the promise of financial gains.

**Lion in traffic: the ecological footprint of photo tourism is higher than that of international hunting.**



Photo: Dr. Ludwig Siege

### TENDER ADVERTISEMENT

Date: 15 January 2019

#### Advertising Conservation Hunting in Salambala and Bamunu Conservancies

The above-mentioned conservancies are located in Zambezi Region. The Ministry of Environment and Tourism has granted a conservation hunting quota to these conservancies for the 2019 hunting season. The quota includes the following:

**Salambala:** Buffalo x 3; Burchell Zebra x 10; Elephant x 6; Kudu x 2; Warthog x 3; Wildebeest x 3; Crocodile x 1; Hippo x 2; Impala x 10; Waterbuck x 2; Baboon x 2.

**Bamunu:** Buffalo x 12; Burchell Zebra x 10; Kudu x 2; Elephant x 3; Warthog x 4; Crocodile x 1; Duiker x 2; Hippo x 3; Reedbuck x 3; Waterbuck x 2.

Interested Hunting Operators must obtain tender documents from NACSO's Natural Resource Working Group, Ausspanplatz, 19 Lossen Street, 2<sup>nd</sup> floor, Windhoek on behalf of Salambala conservancy. Please contact Ms Rosalia Illeka at 0813581174 or email: [Rosalia@nnf.org.na](mailto:Rosalia@nnf.org.na).

The deadline for final submission of proposals is **29 January 2019**. All documents must be delivered or couriered to:

NACSO's Natural Resource Working Group, 2<sup>nd</sup> floor,  
Ausspanplatz, 19 Lossen Street, Windhoek

**Tendering of hunting quotas for conservancies in Namibia by NASCO (Namibian Association of Community-Based Natural Resource Management (CBNRM) Support Organisations).**

## 8.3 Economic Effects through „Community-based Management“ of Natural Resources

Hunting tourism takes place in 23 countries in Africa, with the industry being most prominent in southern Africa and Tanzania, and it continues to grow. In central and western Africa, hunting tourism is either stable or declining. Its primary importance lies in creating economic incentives for protecting large areas. Alternative land uses (such as agriculture or photo tourism) on these lands are often not feasible or only possible with significant interventions in the ecosystem or associated with significantly larger ecological footprints. Although the initial investments and capital costs for market-based forms are higher, hunting tourism projects and businesses also create significant economic benefits for local communities and provide economic incentives for natural resource conservation.

„Community-based management“ or „community-based natural resource management“ is characterised by decentralised administration and the transfer of extensive land use rights to local communities that manage forests or utilise wildlife (including hunting). This approach aims to protect natural resources and combat poaching. Such „community-based management“ has now become a key concept for the utilisation of natural resources. The major strengths of this approach lie in the direct involvement of local people in the management and value creation of wildlife and in protecting wildlife from poaching. By providing sustainable economic benefits, hunting tourism helps to mitigate poaching and provides tangible benefits for conservation.

## 8.4 Import Bans or Restrictions on Trophies Endanger Conservation Efforts

Import bans or restrictions on hunting trophies in various northern countries have significant implications for conservation activities and rural development. They often lead to decreased investment in conservation measures or rural development, as a study by Nyamayedenga et al. (2021) shows.

The authors analysed the impact of an import ban on African elephant trophies in the USA between 2014 and 2017 and found a significant reduction in hunting activities and a

similar reduction in economic benefits for local communities.

Clark et al. (2023) investigated the documented social, ecological, and political impacts of past trophy import bans and found that extensive bans lead to cost increases and exacerbated threats to the species concerned. Such bans are described as grossly ineffective conservation tools that may cause more problems than they solve.

## 8.5 Hunting Tourism and Photo Tourism: Two Sides of the Ecotourism Coin

Hunting tourism can create incentives for conservation activities that other forms of ecotourism cannot. Guests are often willing to pay significant sums to hunt in areas where there are no alternative land uses and high wildlife populations.

The presence of livestock and agriculture in a region is not a disqualifying factor for hunting tourism. This shows that hunting tourism can create incentives for wildlife conservation even in areas where other forms of ecotourism may not be financially viable.

**Photo tourism is not always sustainable. A zebra flees from a lioness through a corridor of photo tourists.**



## 8.6 Responsibility Ethics vs. Ethics of Conviction

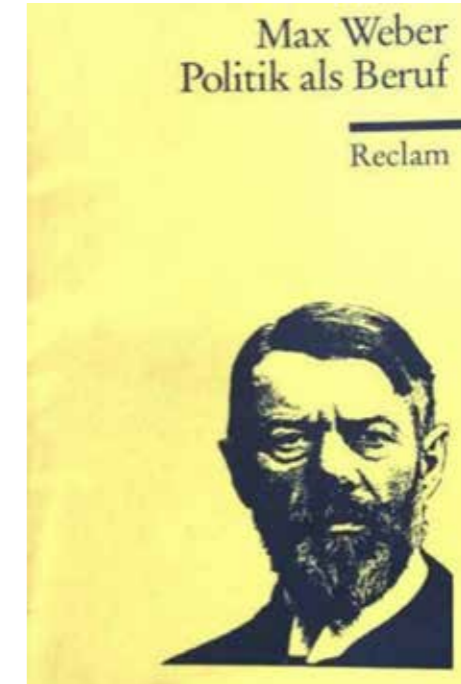
It has been shown that international hunting in almost all relevant contexts contributes positively. This particularly applies to the conservation of natural resources and biodiversity. At the same time, hunting tourism has numerous positive economic impacts, creating jobs and income, alleviating poverty, transferring responsibility to local communities, protecting biodiversity, and preventing crime.

The ethical justification for international hunting is thus derived from the positive societal values of these actions (creating jobs, stabilising local economies, preventing poverty, transferring responsibility to local communities, securing biodiversity, preventing crime, etc.). This is independent of the motives of the actors, particularly the hunters themselves.

A societal perspective, which creates generally valid rules and restrictions for people, requires factual consideration. The evaluation should be based on responsibility ethics.

At a time when biodiversity loss and climate change are among humanity's greatest challenges, this approach seems more appropriate. An individual, conviction-based approach excludes the ability to respect differing opinions, which can lead to ethical conflicts.

Responsibility ethics belongs to the constant improvement of existing instruments, correcting errors, and solving problems. If international hunting, as shown by the majority of scientific studies, is a powerful tool for poverty



**The „originator“ of the concept: responsibility and conviction ethics.**

alleviation and conservation, it would be unwise to discard this tool just because individual cases present problems.

However, problems should not be ignored. Instead, a continuous improvement process is indicated, developing and sharpening sustainability criteria for international hunting and enabling people to live responsibly, including ensuring the protection and maintenance of ecosystems and biodiversity.

# BIBLIOGRAPHY

Adams, W.M. (2004). *Against Extinction: The Story of Conservation*. Earthscan Publications Ltd., London.

Adams, W.M., & Hulme, D. (2001). If community conservation is the answer in Africa, what is the question? *Oryx*, 35, 193–200.

Allen, C.R., Croft, D.P., & Brent, L.J. (2021). Reduced older male presence linked to increased rates of aggression to non-conspecific targets in male elephants. *Proceedings of the Royal Society B*, 288, 20211374. doi: 10.1098/rspb.2021.1374

Amir, O.G. (2006). *Wildlife trade in Somalia*. IUCN/Species Survival Commission.

Archie, E.A., & Chiyo, P.I. (2012). Elephant behaviour and conservation: social relationships, the effects of poaching, and genetic tools for management. *Molecular Ecology*, 21, 765–778.

Arias, M., Coals, P., Ardiantiono, A., Alves-Powell, J., Rizzolo, J.B., Ghoddousi, A., Boron, V., da Silva, M., Naude, V., Williams, V., Poudel, S., Loveridge, W., Payán, E., Suryawanshi, K., & Dickman, A. (2024). Reflecting on the role of human-felid conflict and local use in big cat trade. *Conservation Science and Practice*, 6, 13030. doi: 10.1111/csp2.13030

Baldus, R. (2009). *A Practical Summary of Experiences after Three Decades of Community-based Wildlife Conservation in Africa – “What are the Lessons Learnt?”*. Food and Agriculture Organization of the United Nations & International Council for Game and Wildlife Conservation, Budapest.

Baldus, R., Kibonde, B., & Siegel, L. (2003). Seeking conservation partnerships in the Selous Game Reserve, Tanzania. *Parks*, 13, 50–61.

Balme, G.A., Hunter, L.T., Goodman, P., Ferguson, H., Craigie, J., & Slotow, R. (2010). An adaptive management approach to trophy hunting of leopards *Panthera pardus*: a case study from KwaZulu-Natal, South Africa. In: Macdonald, D.W., & Loveridge, A.J. (Eds.), *Biology and conservation of wild felids*, 341–352, Oxford University Press, Oxford.

Balme, G.A., Hunter, L., & Braczkowski, A.R. (2012). Applicability of age-based hunting regulations for African Leopards. *PLoS ONE*, 7, doi: 10.1371/journal.pone.0035209

Batavia, C., Nelson, M.P., Darimont, C.T., Paquet, P.C., Ripple, W.J., & Wallach, A.D. (2019). The elephant (head) in the room: A critical look at trophy hunting. *Conservation Letters*, 12, 12565.

Batavia, C., Nelson, M.P., & Wallach, A.D. (2020). The moral residue of conservation. *Conservation Biology*, 34, 1114–1121.

Bauer, H., Chapron, G., Noweli, K., Henschel, P., Funston, P., Hunter, L.T.B., Macdonald, D.W., & Packer, C. (2015). Lion (*Panthera leo*) populations are declining rapidly across Africa, except in intensively managed areas. *Proceedings of the National Academy of Sciences of the United States of America*, 112, 14894–14899.

Beattie, G. (2020). *Trophy hunting: A psychological perspective*. Routledge, Abingdon.

Becker, M., McRobb, R., Watson, F., Droge, E., Kanyembo, B., Murdoch, J., & Kakumbi, C. (2013). Evaluating wire-snare poaching trends and the impact of by-catch on Elephants and large carnivores. *Biological Conservation*, 158, 26–36.

Begg, C.M., Miller, J.R.B., & Begg, K.S. (2018). Effective implementation of age restrictions increases selectivity of sport hunting of the African lion. *Journal of Applied Ecology*, 55, 139–146. doi: 10.1111/1365-2664.12951

Bichel, N., & Hart, A. (2023). *Trophy Hunting*. Springer Nature, Singapore.

Blackie, I. (2019). The impact of wildlife hunting prohibition on the rural livelihoods of local communities in Ngamiland and Chobe District Areas, Botswana. *Cogent Social Sciences*, 5, 1558716. doi: 10.1080/23311886.2018.1558716

Braczkowski, A. (2013). *The susceptibility of leopards *Panthera pardus* to trophy hunting*. Dissertation, University of Oxford.

Braczkowski, A.R., Balme, G.A., Dickman, A., Macdonald, D.W., Fattebert, J., Dickerson, T., Johnson, P., & Hunter, L. (2015). Who Bites the Bullet First? The Susceptibility of Leopards *Panthera pardus* to Trophy Hunting. *PLoS ONE*, 10, 0123100. doi: 10.1371/journal.pone.0123100

Carpenter, S., & Konisky, D.M. (2019). The killing of Cecil the Lion as an impetus for policy change. *Oryx*, 53, 698–706.

Child, B. (1988). *The role of wildlife utilization in the sustainable economic development of semi-arid rangelands in Zimbabwe*. PhD thesis. University of Oxford.

Child, B. (1993). Zimbabwe's CAMPFIRE programme: using the high value of wildlife recreation to revolutionize natural resource management in communal areas. *Commonwealth Forestry Review*, 72, 284–296.

Child, B. (1996a). The role of community-based wild resource management in Zimbabwe. *Biodiversity and Conservation*, 5, 355–367.

Child, B. (1996b). The practice and principles of community-based wildlife management in Zimbabwe: the CAMPFIRE programme. *Biodiversity and Conservation*, 5, 369–398.

Child, B. (2000). Application of the Southern African Experience to Wildlife Utilization in Kenya and Tanzania. In: Prins, H.H.T., Grootenhuys, J.G., & Dolan, T.D. (Eds.), *Wildlife Conservation by Sustainable Use*, 459–467, Springer Science+Business Media, New York.

Child, B. (2004). The Luangwa integrated rural development project, Zambia. In: Fabricius, C., Kock, E., Magome, H., & Turner, S. (Eds.), *Rights, resources and rural development. Community-based natural resource management in Southern Africa*, 235–247, Earthscan, London.

Child, B.A., Musengezi, J., Parent, G.J., & Child, G.F.T. (2012). *The economics and institutional economics of wildlife on private*

## BIBLIOGRAPHY

land in Africa. *Pastoralism: Research, Policy and Practice*, 2, 18. <http://www.pastoralismjournal.com/content/2/1/18>

Clark, D.A., Brehony, P., Dickman, A., Foote, L., Hart, A.G., Jonga, C., Mbiza, M.M., Roe, D., & Sandbrook, C. (2023). Hunting trophy import bans proposed by the UK may be ineffective and inequitable as conservation policies in multiple social-ecological contexts. *Conservation Letters*, 16, 12935. doi: 10.1111/conl.12935

Coltman, D.W., O'Donoghue, P., Jorgenson, J.T., Hogg, J.T., Strobeck, C., & Festa-Bianchet, M. (2003). Undesirable evolutionary consequences of trophy hunting. *Nature*, 426, 655–658.

Creel, S., M'soka, J., Dröge, E., Rosenblatt, E., Becker, M.S., Matandiko, W., & Simpamba, T. (2016). Assessing the sustainability of African lion trophy hunting, with recommendations for policy. *Ecological Applications*, 26, 2347–2357.

Darimont, C.T., Codding, B.F., & Hawkes, K. (2017). Why men trophy hunt. *Biology Letters*, 13, 20160909. doi: 10.1098/rsbl.2016.0909

Darimont, C.T., Hall, H., Eckert, L., Mihalik, I., Artelle, K., Treves, A., & Paquet, P.C. (2021). Large carnivore hunting and the social license to hunt. *Conservation Biology*, 35, 1111–1119.

Davis, F., Szopa-Comley, A., Rouse, S., Caromel, A., Arnell, A., Basrur, S., Bholá, N., Brooks, H., Costa-Domingo, G., Cunningham, C., Hunter, K., Kaplan, M., Sheppard, A., & Malsch, K. (2014). State of the World's Migratory Species. UNEP-WCMC, Cambridge.

DeGeorges, P.A., & Reilly, B.K. (2009). The Realities of Community Based Natural Resource Management and Biodiversity Conservation in Sub-Saharan Africa. *Sustainability*, 1, 734–788. doi: 10.3390/sui030734

Dickman, A., Cooney, R., Johnson, P.J., Louis, M.P., & Roe, D. (2019). Trophy hunting bans imperil biodiversity. *Science*, 365, 874–874. doi: 10.1126/science.aaz0735

Di Minin, E., Leader-Williams, N., & Bradshaw, C.J.A. (2016). Banning Trophy Hunting Will Exacerbate Biodiversity Loss. *Trends in Ecology and Evolution*, 31, 99–102.

Di Minin, E., Macmillan, D.C., Goodman, P.S., Escott, B., Slotow, R., & Moilanen, A. (2013). Conservation businesses and conservation planning in a biological diversity hotspot. *Conservation Biology*, 27, 808–820. doi: 10.1111/cobi.12048

Di Minin, E., Clements, H.S., Correia, R.A., Cortés-Capano, G., Fink, C., Haukka, A., Hausmann, A., Kulkarni, R., & Bradshaw, C.J.A. (2021). Consequences of recreational hunting for biodiversity conservation and livelihoods. *One Earth*, 4, 238–253. doi: 10.1016/j.oneear.2021.01.014

Douhard, M., Festa-Bianchet, M., Pelletier, F., Gaillard, J.-M., & Bonenfant, C. (2016). Changes in horn size of Stone's sheep over four decades correlate with trophy hunting pressure. *Ecological Applications*, 26, 309–321.

Ellenberg, L., Scholz, M., & Beier, B. (1997). *Ökotourismus*. Spektrum Akademischer Verlag, Heidelberg.

Fa, J.E., Funk, S.M., & Nasi, R. (2022). *Hunting Wildlife in the Tropics and Subtropics*. Cambridge University Press, Cambridge.

Felix, N., Kissul, B.M., Munishi, L., & Treydte, A.C. (2022). Retaliatory killing negatively affects African lion (*Panthera leo*) male coalitions in the Tarangire-Manyara Ecosystem, Tanzania. *PLoS ONE*, 17. doi: 10.1371/journal.pone.0272272

Fennell, D.A. (2015). *Ecotourism*. Routledge, London.

Festa-Bianchet, M., & Myserud, A. (2018). Hunting and evolution: theory, evidence, and unknowns. *Journal of Mammalogy*, 99, 1281–1292.

Festa-Bianchet, M., & Lee, R. (2009). Guns, Sheep, and Genes: When and Why Trophy Hunting May Be a Selective Pressure. In: Dickson, B., Hutton, J., & Adams, W.M. (Eds.), *Recreational Hunting, Conservation and Rural Livelihoods: Science and Practice*. Blackwell Publishing Ltd., Oxford.

Festa-Bianchet, M., Pelletier, F., Jorgenson, J.T., Feder, C., & Hubbs, A. (2014). Decrease in horn size and increase in age of trophy sheep in Alberta over 37 years. *The Journal of Wildlife Management*, 78, 133–141.

Frost, P.G.H., & Bond, I. (2008). The CAMPFIRE programme in Zimbabwe: Payments for wildlife services. *Ecological Economics*, 65, 776–787.

Ghasemi, B., Kyle, G., Sell, J., & Varner, G. (2023). Conservation scholars' perspectives on the morality of trophy hunting for the sake of conservation. *People and Nature*, 5, 2061–2073.

Gunn, A.S. (2001). Environmental ethics and trophy hunting. *Ethics and the Environment*, 6, 68–95.

Herzog, S. (2019). *Wildtiermanagement*. Quelle & Meyer, Wiebelsheim.

Horowitz, A. (2019). Trophy hunting: a moral imperative for bans. *Science*, 366, 435. doi: 10.1126/science.aaz3315

Hurley, K., Brewer, C., & Thornton, G.N. (2015). The role of hunters in conservation, restoration, and management of North American wild sheep. *International Journal of Environmental Studies*, 72, 784–796.

Jacobson, A.P., Gerngross, P., Lemeris, J.R.Jr., Schoonover, R.F., Anco, C., Breitenmoser-Würsten, C., Durant, S.M., Farhadinia, M.S., Henschel, P., Kamler, J.F., Laguardia, A., Rostro-García, S., Stein, A.B., & Dollar, L. (2016). Leopard (*Panthera pardus*) status, distribution, and the research efforts across its range. *PeerJ*, 4. doi: 10.7717/peerj.1974

Jones, S. (2006). A Political Ecology of Wildlife Conservation in Africa. *Review of African Political Economy*, 109, 483–495.

Kiffner, C., Meyer, B., Mühlenberg, M., & Waltert, M. (2009). Plenty of prey, few predators: what limits lions in Katavi National Park, Western Tanzania? *Oryx*, 43, 52–59.

LaRocco, A.A. (2020). Infrastructure, wildlife tourism, (il)legible populations: A comparative study of two districts in contemporary Botswana. *Environment and Planning E: Nature and Space*, 3, 1074–1095. doi: 10.1177/2514848619877083

Lindsey, P.A., Alexander, R., Frank, L.G., Mathieson, A., & Romañach, S.S. (2006). Potential of Trophy Hunting to Create Incentives for Wildlife Conservation in Africa Where Alternative Wildlife-Based Land Uses May Not be Viable. *Animal Conservation*, 9, 283–291.

Lindsey, P.A., Roulet, P.A., & Romañach, S.S. (2007). Economic and conservation significance of the trophy hunting industry in sub-Saharan Africa. *Biological Conservation*, 134, 455–469.

Lindsey, P.A., Taylor, W.A., Nyirenda, V., & Barnes, J. (2015). Bushmeat, wildlife-based economies, food security and conservation: insights into the ecological and social impacts of the bushmeat trade in African savannahs. *FAO*. Retrieved from [FAO](http://www.fao.org)

Lindsey, P.A., Balme, G.A., Funston, P.J., Henschel, P.H., & Hunter, L.T.B. (2016). Life after Cecil: channelling global outrage into funding for conservation in Africa. *Conservation Letters*, 9, 296–301.

Lovelock, B. (2015). Troubled Shooting—the ethics of helicopter-assisted guided trophy hunting by tourists for tahr. *Animals and tourism: Understanding diverse relationships*, 67–91.

Loveridge, A.J., Searle, A.W., Mandisodza-Chikerema, R., Macdonald, D.W., & Chapron, G. (2023). The impact of sport-hunting on the population dynamics of an African lion population in a protected area. *Scientific Reports*, 13, 95. doi: 10.1038/s41598-022-25020-9.

Loveridge, A.J., Wijers, M., Murindagomo, F., & Macdonald, D.W. (2007). Anthropogenic edge effects and aging errors by hunters can affect the sustainability of lion trophy hunting. *Biological Conservation*, 134, 548–558.

Lubilo, R., & Child, B. (2010). The rise and fall of community-based natural resource management in Zambia's Luangwa Valley: an illustration of micro-and macro-governance issues. In: Nelson, F. (Ed.), *Community rights, conservation and contested land: the politics of natural resource governance in Africa*, 202–226.

Lyakurwa, G.J., Mremi, R., & Kisingo, A.W. (2020). Insights of Legal and illegal wildlife hunting in Selous and Rungwa Game Reserves in the South-East and Central Tanzania. *International Journal of Biodiversity and Conservation*, 12, 326–336.

Macdonald, D., Burnham, D., Dickman, A., Loveridge, A., & Johnson, P. (2016). Conservation or the moral high ground: Siding with Bentham or Kant. *Conservation Letters*, 9, 1–2. doi: 10.1111/conl.12254

Macdonald, D.W., Jacobsen, K.S., Burnham, D., Johnson, P.J., & Loweridge, A.J. (2016). Cecil: a moment or a movement? Analysis of media coverage of the death of a lion, *Panthera leo*. *Animals*, 6, 26. doi: 10.3390/ani6050026

Marvin, G. (2010). Living with Dead Animals? Trophies as Souvenirs of the Hunt. In: Kowalsky, N. (Ed.), *Hunting - Philosophy for Everyone: In Search of the Wild Life*. Wiley-Blackwell, Hoboken.

Mbaiwa, J.E. (2018). Effects of the safari hunting tourism ban on rural livelihoods and wildlife conservation in Northern Botswana. *South African Geographical Journal*, 100, 41–61. doi: 10.1080/03736245.2017.1299639

McLellan, B.N. (2005). Sexually selected infanticide in grizzly bears: the effects of hunting on cub survival. *Ursus*, 16, 141–156.

Michel, S., & Rosen, T. (2016). *Hunting of Prey Species*. In: McCarthy, T., & Mallon, D. (Eds.), *Snow Leopards*. Academic Press, London.

Miller, S.D., & Keay, J. (2003). Effects of hunting on brown bear cub survival and litter size in Alaska. *Ursus*, 14, 130–152.

Murindagomo, F. (1990). *Wildlife management in Zimbabwe: The CAMPFIRE programme*. World Bank, Washington. Retrieved from [FAO](http://www.fao.org)

Murombedzi, J.C. (1999). Devolution and stewardship in Zimbabwe's CAMPFIRE programme. *Journal of International Development*, 11, 287–293.

Musika, N.V., Wakibara, J.V., Ndakidemi, P.A., & Treydte, A.C. (2022). Using Trophy Hunting to Save Wildlife Foraging Resources: A Case Study from Moyowosi-Kigosi Game Reserves, Tanzania. *Sustainability*, 14, 1288. doi: 10.3390/su14031288

Mutandwa, E., & Gadzirayi, C.T. (2007). Impact of community-based approaches to wildlife management: case study of the CAMPFIRE programme in Zimbabwe. *International Journal of Sustainable Development & World Ecology*, 14, 336–344.

Naidoo, R., Weaver, L.C., Diggie, R.W., Matongo, G., Hill, G.S., & Thouless, C. (2016). Complementary benefits of tourism and hunting to communal conservancies in Namibia. *Conservation Biology*, 30, 628–638.

Nelson, M.P., Bruskotter, J.T., Vucetich, J.A., & Chapron, G. (2016). Emotions and the ethics of consequence in conservation decisions: Lessons from Cecil the Lion. *Conservation Letters*, 9, 302–306.

Nyamayedenga, S., Mashapa, C., Chateya, R.J., & Gandiwa, E. (2021). An assessment of the impact of the 2014 US elephant trophy importation ban on the hunting patterns in Matetsi Hunting Complex, north-west Zimbabwe. *Global Ecology and Conservation*, 30, e01758.

Ogutu, J.O., Piepho, H.P., Said, M.Y., Ojwang, G.O., Njino, L.W., Kifugo, S.C., & Wargute, P.W. (2016). Extreme wildlife declines and concurrent increase in livestock numbers in Kenya: What are the causes? *PLoS one*, 11, 0163249. doi: 10.1371/journal.pone.0163249

Packer, C., Kosmala, M., Cooley, H.S., Brink, H., Pintea, L., Garshelis, D., Purchase, G., Strauss, M., Swanson, A., Balme, G., Hunter, L., & Nowell, K. (2009). Sport Hunting, Predator Control and Conservation of Large Carnivores. *PLoS ONE*, 4. doi: 10.1371/journal.pone.0005941

Packer, C., Brink, H., Kissui, B.M., Maliti, H., Kushnir, H., & Caro, T. (2011). Effects of Trophy Hunting on Lion and Leopard Populations in Tanzania. *Conservation Biology*, 25, 142–153. doi: 10.1111/j.1523-1739.2010.01576.x

Packer, C. (2015). *Lions in the balance: man-eaters, manes, and men with guns*. University of Chicago Press, Chicago.

Page, L. (2015). *Killing to Save: Trophy Hunting and Conservation in Mongolia*. Independent Study Project (ISP) Collection, 2086. Retrieved from [SIT Digital Collections](http://www.sit.digitallibrary.org)

Richardson, J.A. (1998). Wildlife utilization and biodiversity conservation in Namibia: conflicting or complementary objectives? *Biodiversity & Conservation*, 7, 549–559

## BIBLIOGRAPHY

Ripple, W.J., Newsome, T.M., & Kerley, G.I.H. (2016). Does Trophy Hunting Support Biodiversity? A Response to Di Minin et al. *Trends in Ecology and Evolution*, 31, 495–496.

Roe, D., Nelson, F., & Sandbrook, C. (2009). Community Management of Natural Resources in Africa: Impacts, Experiences and Future Directions. *Natural Resource Issues* 18, International Institute for Environment and Development, London.

Schillings, C.G. (1906). *Mit Blitzlicht und Büchse im Zauber des Eleléscho*. R. Voigtländers Verlag, Leipzig.

Schipper, J., Chanson, J.S., Chiozza, F., Cox, N.A., Hoffmann, M., Katariya, V., Lamoreux, J., Rodrigues, A.S.L., Stuart, S.N., Temple, H.J., Baillie, J., Boitani, L., Lacher, T.E. Jr., Mittermeier, R.A., Smith, A.T., Absolon, D., Aguiar, J.M., Amori, G., Bakkour, N., Baldi, R., Berridge, R.J., Bielby, J., Black, P.A., Blanc, J.J., Brooks, T.M., Burton, J.A., Butynski, T.M., Catullo, G., Chapman, R., Cokeliss, Z., Collen, B., Conroy, J., Cooke, J.G., da Fonseca, G.A.B., Derocher, A.E., Dublin, H.T., Duckworth, W., Emmons, L., Emslie, R.H., Festa-Bianchet, M., Foster, M., Foster, S., Garshelis, D.L., Gates, C., Gimenez-Dixon, M., Gonzalez, S., Gonzalez-Maya, J.F., Good, T.C., Hammerson, G., Hammond, P.S., Happold, D., Happold, M., Hare, J., Harris, R.B., Hawkins, C.E., Haywood, M., Heaney, L.R., Hedges, S., Helgen, K.M., Hilton-Taylor, C., Hussain, S.A., Ishii, N., Jefferson, T.A., Jenkins, R.K.B., Johnston, C.H., Keith, M., Kingdon, J., Knox, D.H., Kovacs, K.M., Langhammer, P., Leus, K., Lewison, R., Lichtenstein, G., Lowry, L.F., Macavoy, Z., Mace, G.M., Mallon, D.P., Masi, M., McKnight, M.W., Medellín, R.A., Medici, P., Mills, G., Moehlmann, P.D., Molur, S., Mora, A., Nowell, K., Oates, J.F., Olech, W., Oliver, W.R.L., Oprea, M., Patterson, B.D., Perrin, W.F., Polidoro, B.A., Pollock, C., Powel, A., Protas, Y., Racey, P., Ragle, J., Ramani, P., Rathbun, G., Reeves, R.R., Reilly, S.B., Reynolds, J.E.III., Rondinini, C., Rosell-Amball, R.G., Rulli, M., Rylands, A.B., Savini, S., Schank, C.J., Sechrest, W., Self-Sullivan, C., Shoemaker, A., Sillero-Zubiri, C., De Silva, N., Smith, D.E., Srinivasulu, C., Stephenson, P.J., van Strien, N., Talukdar, B.K., Taylor, B.L., Timmins, R., Tirira, D.G., Tognelli, M.F., Tsytsulina, K., Veiga, L.M., Vié, J.-C., Williamson, E.A., Wyatt, S.A., Xie, Y., & Young, B.E. (2008). The Status of the World's Land and Marine Mammals: Diversity, Threat, and Knowledge. *Science*, 322, 225. doi: 10.1126/science.1165115

Seton-Karr, H. (1908). The preservation of big game. *Journal of the Society for the Preservation of the Wild Fauna of the Empire*, 4, 26–28.

Shannon, G., Larson, C.L., Reed, S.E., Crooks, K.R., & Angeloni, L.M. (2017). Ecological Consequences of Ecotourism for Wildlife Populations and Communities. In: Blumstein, D.T., Geffroy, B., Samia, D.S.M., & Bessa, E. (Eds.), *Ecotourism's Promise and Peril*. Springer International Publishing, Cham.

Siege, H., & Siege, L. (2020). *Die Sache mit der Auslandsjagd*. Verlag J. Neumann-Neudamm.

Sindiyo, D.M. (1968). Game Department Field experience in Public Education. *East African Agriculture and Forestry Journal*, 33, 237–240.

Strampelli, P., Henschel, P., Searle, C.E., Macdonald, D.E., & Dickman, A. (2022). Habitat use of and threats to African large carnivores in a mixed-use landscape. *Conservation Biology*, 36, 13943. doi: 10.1111/cobi.13943

Strasdas, W., & Zeppenfeld, R. (2011). Naturtourismus und Ökotourismus. In: Antz, C., Eisenstein, B., & Eilzer, C. (Eds.), *Slow Tourism-*

*Zukunft des Reisens zwischen Langsamkeit und Sinnlichkeit*, 55–78, Meidenbauer, München.

Swenson, J.E. (2003). Implications of Sexually Selected Infanticide for the Hunting of Large Carnivores. In: Festa-Bianchet, M., & Apollino, M. (Eds.), *Animal Behaviour and Wildlife Conservation*. Island Press, Washington.

Trouwborst, A., Loveridge, A.J., & Macdonald, D.W. (2019). Spotty Data: Managing International Leopard (*Panthera pardus*) Trophy Hunting Quotas Amidst Uncertainty. *Journal of Environmental Law*, 32, 253–278.

't Sas-Rolfes, M., Emslie, R., Adcock, K., & Knight, M. (2022). Legal hunting for conservation of highly threatened species: The case of African rhinos. *Conservation Letters*, 15, 12877. doi: 10.1111/conl.12877

Valdez, R., Guzmán-Aranda, J.C., Abarca, F.J., Tarango-Arámula, L.A., & Sánchez, F.C. (2006). Wildlife Conservation and Management in Mexico. *Wildlife Society Bulletin*, 34, 270–282.

van Houdt, S., Brown, R.P., Wanger, T.C., Twine, W., Fynn, R., Uiseb, K., Cooney, R., & Traill, L.W. (2021). Divergent views on trophy hunting in Africa, and what this may mean for research and policy. *Conservation Letters*, 14, e12840. doi: 10.1111/conl.12840

Vorlauffer, K. (2002). CAMPFIRE – The political ecology of poverty, alleviation, wildlife utilization and biodiversity conservation in Zimbabwe. *Erdkunde*, 56, 184–206.

Wall, B., & Child, B. (2009). When Does Hunting Contribute to Conservation and Rural Development? In: Dickson, B., Hutton, J., & Adams, W.M. (Eds.), *Recreational Hunting, Conservation and Rural Livelihoods: Science and Practice*, 253–265.

Weber, M. (1926). *Politik als Beruf*. Duncker & Humblot, München.

Whitman, K., Starfield, A.M., Quadling, H.S., & Packer, C. (2004). Sustainable trophy hunting of African lions. *Nature*, 428, 175–178.

Wilder, B.T., Betancourt, J.L., Epps, C.W., Crowhurst, R.S., Mead, J.I., & Ezcurra, E. (2015). Local Extinction and Unintentional Rewilding of Bighorn Sheep (*Ovis canadensis*) on a Desert Island. *PloS ONE*, 9. doi: 10.1371/journal.pone.0091358

Winterbach, C.W., Whitesell, C., & Somers, M.J. (2015). Wildlife Abundance and Diversity as Indicators of Tourism Potential in Northern Botswana. *PloS ONE*, 9, 0135595. doi: 10.1371/journal.pone.0135595

Woodford, M.H., Frisina, M.R., & Awund, G.A. (2004). The Torgghar conservation project: management of the livestock, Suleiman markhor (*Capra falconeri*) and Afghan urial (*Ovis orientalis*) in the Torgghar Hills, Pakistan. *Game and Wildlife Science*, 21, 177–187.

Woodroffe, R., & Frank, L.G. (2005). Lethal control of African lions (*Panthera leo*): local and regional population impacts. *Animal Conservation*, 8, 91–98.



Deutsche Delegation im Internationalen  
Rat zur Erhaltung des Wildes und der Jagd (CIC)  
Röpkestr. 20, 40235 Düsseldorf  
[www.CIC-wildlife.de](http://www.CIC-wildlife.de)