

SOME CRITICAL ASPECTS OF HUNTING AS SPORT

VILMA ALINA POSTIČ BEZENŠEK

University of Maribor, Faculty of Law, Maribor, Slovenia
alina.bezensek@gmail.com

Hunting has been an integral component of human societies for millennia, initially serving as a primary means of subsistence before evolving into recreational and sport-based practices in many parts of the world. In contemporary conservation debates, hunting remains a controversial yet significant topic, particularly in relation to sustainability and wildlife management. This article explores the concept of hunting as a sport within the framework of sustainable development, examining its ecological, economic and social dimensions. Drawing upon existing literature in wildlife management, conservation biology and environmental policy, the paper evaluates whether regulated sport hunting can contribute to biodiversity conservation and sustainable ecosystem management. The analysis highlights the potential benefits of controlled hunting, including wildlife population management, habitat conservation and the generation of financial resources for conservation initiatives. At the same time, it critically addresses ethical concerns, governance challenges and ecological risks associated with unsustainable hunting practices. The findings suggest that while hunting alone cannot resolve global biodiversity challenges, it can function as a complementary conservation tool when integrated into science-based management systems, supported by effective regulations and inclusive community participation.

DOI
[https://doi.org/
10.18690/um.pf.1.2026.19](https://doi.org/10.18690/um.pf.1.2026.19)

ISBN
978-961-299-176-0

Keywords:
hunting,
sport,
conservation,
sustainable development,
wildlife management,
falconry,
cultural heritage



University of Maribor Press

1 Introduction

Human interactions with wildlife have evolved significantly throughout history. Early human societies relied heavily on hunting for food, clothing and tools, making it a fundamental component of survival and cultural identity. With the development of agriculture and urban societies, hunting gradually shifted from subsistence necessity to recreational activity in many regions. Today, hunting is practiced both for subsistence and for sport, and its role in modern conservation frameworks has become a subject of intense debate.

Hunting and gathering was presumably the subsistence strategy employed by human societies beginning some 1.8 million years ago, by *Homo erectus*, and from its appearance some 200,000 years ago by *Homo sapiens*.¹

Sport hunting, often referred to as recreational hunting or trophy hunting depending on context, involves the regulated harvesting of wildlife primarily for leisure, personal consumption or cultural traditions. While critics argue that hunting for sport raises ethical concerns and may threaten wildlife populations, proponents maintain that regulated hunting can contribute to conservation and sustainable natural resource management.²

The concept of sustainability has become central to contemporary environmental policy and conservation strategies. Sustainable use of natural resources refers to managing ecosystems in a way that allows current generations to benefit from them without compromising their availability for future generations.³ Within this framework, wildlife resources are increasingly viewed not only as elements of biodiversity but also as renewable resources that can be managed responsibly.

Many wildlife management programs incorporate hunting as a regulatory mechanism to maintain ecological balance and generate conservation funding. In several countries, revenues from hunting permits, tourism and associated services are used to support wildlife monitoring, habitat restoration and anti-poaching initiatives.⁴

¹ Mckie, 2012.

² Lindsey et al., 2007.

³ Brundtland Commission, 1987.

⁴ Naidoo et al., 2016.

Consequently, hunting has become embedded in certain conservation models as part of a broader strategy for sustainable wildlife use.

However, the relationship between hunting and conservation is complex. Poorly regulated hunting can lead to overexploitation, species decline and ecosystem disruption. Historical examples such as the near extinction of the American bison in the nineteenth century demonstrate how uncontrolled hunting can have devastating ecological consequences.⁵ As a result, contemporary wildlife management systems emphasize regulation, scientific monitoring and ethical guidelines.

This article examines hunting as a sport within the broader framework of sustainability. The study seeks to answer the following research questions:

1. What is the concept of sustainable hunting within modern wildlife management?
2. What ecological and socioeconomic benefits can regulated sport hunting provide?
3. What challenges and ethical considerations arise from hunting as a conservation tool?

Through a review of academic literature and conservation policy frameworks, the article aims to provide a balanced assessment of the role of sport hunting in sustainable development and biodiversity conservation.

2 Historical Development of Hunting

Hunting first appeared three million years ago and has remained with us ever since, alongside other food-producing activities such as farming livestock. In the Middle Ages, hunting was the privilege of nobility, linked with the right to land ownership. After the French Revolution, it was democratised extensively, which led to considerable damage to the forest ecosystem. It has since become mainly a leisure activity and is now governed by strict laws to protect wildlife and its environment.

The first human beings lived a nomadic lifestyle and introduced meat to their diet about 3 million years ago. They first ate recently deceased animals and the larvae and insects found on carrion. Later, as they began to look for prey, they devised hunting

⁵ Isenberg, 2000.

techniques using rudimentary weapons and stratagems.⁶ Agriculture emerged in the Neolithic era and livestock farming relegated hunting to a secondary role. It became part of a defensive practice aimed at protecting farmers' crops from animals that would destroy them. However, hunting out of necessity still exists presently among some tribes in, for example, Southern Africa, Thailand or Indonesia. In these areas it compensates for food shortages when farming conditions are difficult. Hunting as a privilege first appeared in antiquity. While crops and livestock farming covered people's basic dietary needs, hunting offered a wider choice of meat to the privileged classes. It also had a dual symbolic and social significance: The elites in charge of the armies could demonstrate and prove their abilities as warriors through hunting.⁷

The practice of hunting became codified during the Middle Ages. Being invited to hunt with the King was one of the court's great honours. In Europe, laws were devised to regulate hunting on royal territory. During that period, forest planning and the privileges granted for their use engendered a proliferation of animals which were harmful to the peasants' crops. Hunting therefore sought to eliminate such animals to protect the plantations. From the 13th century onwards, theoretical works about wild animals, prey typology and hunting techniques abounded, as did recipes for royal banquets.⁸

Under the reign of Francis I during the Renaissance in France, hunting with hounds became a lifestyle choice. Post-hunt banquets were an opportunity to demonstrate social relationships in court. An example of this was the saving of choice pieces for the guests of honour, thus highlighting the prowess of hunter and cook alike. During this period, hunting became a privilege of nobility, and the right to practise it was directly linked to the right to land ownership. Poaching, which had been relatively well tolerated until then, was now severely punished and non-noble people were formally prohibited from hunting. According to the royal ordinance that came into force in March 1515, hunting was actually seen as a waste of time that should be spent on working the land.⁹

The Revolution abolished this aristocratic privilege and the democratisation of the practice led to a wave of widespread hunting which damaged the forest ecosystem

⁶ Corvol, 2010.

⁷ Corvol, 2005.

⁸ Durantel, 2015.

⁹ Patou-Mathis, 2009.

and caused some species to become extinct in certain areas. To preserve wildlife, permits were introduced under Napoleon I, placing limits on when and where hunting could take place. However, in the 19th century, this permit cost a farm labourer the equivalent of one month's wages, hence hunting became once more the privilege of the affluent classes. This situation encouraged poaching, either for food or selling commodities derived from animals, such as fur.¹⁰

2.1 Early Human Societies and Subsistence Hunting

Hunting represents one of the oldest human activities, predating the emergence of agriculture by hundreds of thousands of years. Archaeological evidence suggests that early humans relied heavily on hunting and gathering for survival, using primitive tools to capture animals for food, clothing and shelter materials.¹¹

In many hunter-gatherer societies, hunting practices were closely tied to ecological knowledge and cultural traditions. Communities often developed systems that limited overexploitation, such as seasonal hunting patterns or spiritual beliefs that emphasized respect for animals and ecosystems. These traditional practices often functioned as informal conservation mechanisms that helped maintain ecological balance.¹²

However, as human populations grew and technological advancements increased hunting efficiency, wildlife populations began to face greater pressure. The introduction of firearms and large-scale commercial hunting during the colonial period significantly altered the relationship between humans and wildlife.

2.2 Commercial Hunting and Wildlife Decline

During the eighteenth and nineteenth centuries, commercial hunting became widespread in many parts of the world. Wildlife species were exploited for meat, fur, ivory and other commodities, often without regulatory oversight. This period witnessed dramatic declines in numerous species, particularly in North America and Africa.

¹⁰ Corvol, 2005.

¹¹ Lee & Daly, 1999.

¹² Berkes, 2012.

One of the most notable examples is the near extinction of the American bison in the late nineteenth century. Once numbering in the tens of millions, bison populations were reduced to a few hundred individuals due to intensive commercial hunting and habitat loss.¹³ Similar declines occurred in many other species, highlighting the ecological consequences of unregulated exploitation.

These crises eventually prompted the development of modern wildlife conservation movements. Governments began introducing hunting regulations, protected areas and wildlife management agencies designed to prevent further species loss.

2.3 Emergence of Modern Wildlife Management

The twentieth century marked the emergence of modern wildlife management systems. Conservation policies increasingly relied on scientific research to determine sustainable harvest levels and ecosystem dynamics.

One influential model was the North American Model of Wildlife Conservation, which established principles such as public ownership of wildlife, science-based management and regulated hunting seasons.¹⁴ This framework helped restore populations of several species, including deer, elk and wild turkey.

Under this model, hunters play a significant role in conservation funding through license fees, taxes on hunting equipment and voluntary contributions to conservation programs. Similar systems have been adopted in other regions, demonstrating how hunting can be integrated into sustainable resource management strategies.

3 Concept of Sustainable Hunting

3.1 Definition and Principles

Hunting is one of the oldest human traditions. It connects us to nature, provides food, and helps maintain healthy wildlife populations. But in today's world, hunting is more than just a way to bring home meat. It is also about protecting the

¹³ Isenberg, 2000.

¹⁴ Geist, Mahoney & Organ, 2001.

environment, preserving species, and respecting the natural world. This is where sustainable hunting comes in. Responsible hunters take only what they need, follow the rules, and make sure their actions support healthy ecosystems. It is essential for a novice hunter to learn sustainable practices in order to become an ethical hunter.¹⁵ The author points out the important Core Principles of Sustainable Hunting:

- Habitat and Environment Stewardship (protecting the ecosystem by minimizing damage to soil and water, and following "Leave No Trace" principles to avoid leaving waste);
- Selective and Responsible Harvesting (targeting specific, abundant species to avoid overexploitation, ensuring population stability and biodiversity);
- Fair Chase Ethics (giving animals a reasonable chance to escape and avoiding unethical methods, such as shooting from uncertain distances or chasing with vehicles); and
- Conservation Support (that includes contributing to the future of wildlife through licensing fees, volunteering, and habitat restoration).

Sustainable hunting refers to the use of wildlife resources at levels that do not threaten long-term population viability. It involves harvesting animals in a manner that allows species populations to remain stable or increase over time while maintaining ecological balance.

According to the International Union for Conservation of Nature (IUCN), sustainable use of wildlife is defined as the utilization of biodiversity components in ways that do not lead to their long-term decline.¹⁶

Several key principles guide sustainable hunting practices:

1. scientific management of wildlife populations;
2. legal regulation of hunting activities;
3. protection of habitats and ecosystems;
4. ethical hunting practices;
5. participation of local communities.

¹⁵ Sottolano, 2025.

¹⁶ IUCN, 2012.

When these principles are applied effectively, hunting can function as a tool for maintaining wildlife populations within ecological carrying capacity. This approach also emphasizes that hunters are responsible for supporting the ecosystems they utilize, promoting a balanced and long-term coexistence between humans and nature through the sustainable use of animal resources, including the meat, hide, and antlers, in order to avoid waste and honor the tradition of the hunt.

3.2 Regulation and Wildlife Management

Effective regulation is central to sustainable hunting systems. Governments typically establish hunting quotas based on scientific assessments of wildlife populations. These quotas determine how many animals can be harvested during a specific hunting season without threatening population stability. Wildlife managers rely on various monitoring techniques, including population surveys, tracking data and ecological modelling, to estimate sustainable harvest levels.¹⁷

Regulatory mechanisms often include hunting licenses and permits, species-specific quotas, seasonal restrictions, designated hunting zones and prohibited hunting methods. Such measures aim to prevent overexploitation while ensuring that hunting activities remain compatible with conservation objectives.¹⁸

3.3 Adaptive Management Approaches

Modern wildlife management increasingly relies on adaptive management strategies. This approach involves continuously monitoring ecosystems and adjusting policies based on new scientific information. Adaptive management recognizes that ecosystems are dynamic and that management strategies must evolve in response to environmental changes such as climate change, habitat loss and shifting species distributions.¹⁹

In the context of hunting, adaptive management allows authorities to modify quotas, hunting seasons and conservation strategies to ensure sustainable outcomes.

¹⁷ Milner et al., 2007.

¹⁸ Hagny, 2025.

¹⁹ Holling, 1978.

4 Ecological Impacts of Sport Hunting

The widespread activity of recreational hunting is proposed as a means of conserving nature and supporting livelihoods. However, recreational hunting – especially trophy hunting – has come under increasing scrutiny based on ethical concerns and the arguments that it can threaten species and fail to contribute meaningfully to local livelihoods.²⁰ But different authors emphasised Key Ecological Impacts of Sport Hunting, such as:

- Population Control and Ecosystem Balance (as hunting is used to manage wildlife populations, such as deer or boar, which can grow rapidly and overeat, harming the habitat for other species. In some cases, reducing these populations can allow vegetation to recover);
- Detrimental Effects on Biodiversity (as overhunting can cause population decline and threaten extinction for some species. It can also create an imbalance in the food chain by eliminating predators);
- Behavioral and Physiological Changes (as different studies have shown that hunting causes animals to become more fearful and shy, and to potentially abandon their natural habitats. This is sometimes referred to as the "ecology of fear");
- Altering Species Structure and Evolution (as sport hunting often targets large, mature animals, which can lead to smaller individuals and accelerated evolution of certain traits. This can result in smaller horn sizes or lower body weight in populations, such as bighorn sheep);
- Disruption of Social Structures (when hunting can impact the social groups and family structures of animals, as well as altering their use of dens and activity patterns);
- Conservation and Funding (when regulated, sport hunting can act as a tool for conservation, generating revenue for protecting animals and their land. However, when unregulated, it can cause severe declines in populations, such as elephants and lions);
- Habitat Management and Other Issues (as we realise that some hunting reserves manage animal populations in ways that can negatively affect other species,

²⁰ Di Minin et al., 2021.

while some practices, like travel for hunting, contribute to high carbon footprints.²¹

Finally, the potential benefits of controlled hunting can contribute to preserving natural habitats and preventing overpopulation. Properly managed hunting also can have positive effects on the conservation status of certain mammal species and it can help reduce the transmission of diseases, such as Lyme disease, by controlling the population of animals that carry ticks.

4.1 Wildlife Population Regulation

One of the primary ecological justifications for regulated hunting is population management. In ecosystems where natural predators are absent or reduced, certain species can become overabundant. Overpopulation can lead to habitat degradation, increased disease transmission and heightened human–wildlife conflict.²²

For example, in many parts of Europe and North America, populations of deer species have increased significantly due to the decline of large predators such as wolves and lynx. High deer densities can result in overgrazing, which negatively affects forest regeneration and biodiversity.

Regulated hunting can help maintain population levels within ecological carrying capacity, reducing pressure on ecosystems.

4.2 Ecosystem Balance

Hunting can influence ecosystem dynamics by affecting predator-prey relationships and species interactions. By selectively removing individuals from wildlife populations, hunting can alter age structures, sex ratios and genetic diversity.

When managed carefully, these impacts can be beneficial. For instance, hunting programs often target older male individuals in species with polygynous mating systems, which has minimal impact on reproductive capacity.

²¹ Di Minin et al., 2021.

²² Côté et al., 2004

However, poorly designed hunting practices can disrupt social structures and lead to unintended ecological consequences.²³

4.3 Habitat Conservation Incentives

In many regions, wildlife habitats are threatened by agricultural expansion, infrastructure development and urbanization. Conservation initiatives often require significant financial resources to protect and manage these landscapes.

Sport hunting can create economic incentives to conserve habitat. Landowners and local communities may choose to preserve wildlife habitats when hunting activities provide financial benefits through tourism, licensing or game management programs.²⁴

For example, private game reserves in parts of southern Africa maintain large tracts of natural habitat partly due to revenue generated from hunting and wildlife tourism.

5 Economic Contributions of Sport Hunting

5.1 Hunting as a Source of Conservation Funding

One of the most frequently cited arguments in favor of regulated sport hunting is its economic contribution to conservation initiatives. Wildlife conservation requires substantial financial investment for activities such as habitat restoration, wildlife monitoring, anti-poaching enforcement and protected area management. In many countries, hunting-related revenues constitute an important funding source for these activities.

Hunters contribute financially through various mechanisms including hunting permits, license fees, equipment taxes, conservation donations and tourism expenditures. In the United States, for example, the Pittman–Robertson Federal Aid in Wildlife Restoration Act introduced an excise tax on firearms, ammunition and hunting equipment. The revenue generated from this tax has funded wildlife conservation programs across all U.S. states since 1937.²⁵

²³ Milner et al., 2007.

²⁴ Lindsey et al., 2007.

²⁵ Organ et al., 2012.

Such funding mechanisms demonstrate how hunting activities can contribute directly to wildlife conservation. The funds generated are often reinvested into wildlife management agencies responsible for population monitoring, habitat management and conservation research.

5.2 Economic Benefits for Rural Communities

Sport hunting also provides economic opportunities for rural communities, particularly in areas where alternative sources of income are limited. Hunting tourism can generate employment in guiding services, accommodation, transportation, equipment provision and wildlife management.

In several African countries, trophy hunting programs have been developed as part of community-based natural resource management initiatives. These programs aim to provide local communities with financial incentives to protect wildlife and habitats rather than converting land to agriculture or livestock production.²⁶

In Namibia, for instance, communal conservancies have successfully integrated regulated hunting into wildlife conservation strategies. Local communities receive revenue from hunting concessions and tourism activities, which has contributed to increased wildlife populations and improved livelihoods.²⁷

Similarly, in parts of Europe and North America, hunting leases and guided hunts generate income for landowners and local businesses. These economic benefits can create incentives for maintaining natural habitats and preserving biodiversity.

5.3 Hunting and Sustainable Tourism

Sport hunting is also considered a form of nature-based tourism. While wildlife viewing tourism has become increasingly popular, hunting tourism continues to attract participants who seek outdoor experiences, cultural traditions and wildlife interaction.

²⁶ Naidoo et al., 2016.

²⁷ Lindsey et al., 2007.

Compared with other forms of tourism, hunting often involves smaller groups of visitors who spend extended periods in remote areas. As a result, hunting tourism can generate relatively high economic returns with lower environmental pressure compared to mass tourism.²⁸

However, the economic benefits of hunting tourism depend heavily on effective governance and transparent distribution of revenue. In some cases, mismanagement or corruption can prevent local communities from receiving the expected economic benefits.

Hunting is a widespread and diverse activity that fulfills many social, economic and ecological functions. It is not just carried out for the purpose of sport or provisioning but is central to cultural and social relations in many communities. Whilst there are clearly cases where species have been overhunted and need protection, hunting and associated management practices can be a force for nature conservation if carried out according to best practice, which must be adapted to recognize local and national objectives and institutions. In some cases, hunting may actually increase the value of quarry species and this can lead to sustainable populations in a more effective way than total protection. There are now effective techniques that can be used to bring hunters and environmentalists together to build consensus on the most effective future policies to support human well-being by recognizing wider ecosystem linkages and protecting the underpinning biodiversity whilst building the capacity of the role of hunting and its culture as stewards of many of our landscapes. Crucial to the success of biodiversity policy objectives in the wider countryside is the engagement of hunters and land managers at an early stage to develop adaptive or co-management strategies consistent with an ecosystem approach.

6 Social and Cultural Dimensions of Hunting

Despite the unpredictable postmodern society, the social and cultural dimensions of hunting are still deeply involved in rooted traditions, community identity, and serve both as a connection to nature and as a mechanism for social cohesion, particularly in rural areas. Hunting often functions as a 'community of practice', passed down through families and social networks, offering identity and fostering collective responsibility and cultural identity and heritage, connection to nature and ethic

²⁸ Lindsey et al., 2007.

codes, and as such has an important role in the postmodern society, especially in building social networks.

6.1 Hunting as Cultural Heritage

In many societies, hunting represents more than a recreational activity; it is deeply embedded in cultural traditions and social identity. Indigenous communities across the world have long practiced hunting as part of their subsistence and cultural heritage. Traditional hunting practices often involve extensive ecological knowledge passed down through generations. This knowledge includes understanding animal behaviour, seasonal migration patterns and ecosystem dynamics.²⁹

For indigenous peoples, hunting may also hold spiritual significance and contribute to community cohesion. Cultural ceremonies, rituals and storytelling frequently revolve around hunting traditions. Recognizing the cultural importance of hunting is essential when designing wildlife management policies. Conservation programs that ignore local traditions risk alienating communities and undermining conservation objectives.

6.2 Recreational Hunting and Social Identity

In many modern societies, hunting continues to serve as a recreational activity that fosters social connections and outdoor engagement. Hunters often view their activity as part of a broader lifestyle associated with nature's appreciation, self-sufficiency and conservation stewardship.

Surveys of hunters in several countries suggest that many participants perceive themselves as active contributors to wildlife conservation. Through participation in conservation organizations, habitat restoration projects and wildlife monitoring initiatives, hunters often engage directly in conservation activities.³⁰

Additionally, hunting may provide opportunities for education about ecosystems, wildlife behaviour and environmental responsibility. Many hunters emphasize ethical hunting practices and respect for wildlife as core values.

²⁹ Berkes, 2012.

³⁰ Organ et al., 2012.

6.3 Hunting and Food Sustainability

Another dimension of hunting relates to sustainable food systems. Wild game meat can represent a locally sourced and environmentally sustainable protein source. Compared to industrial livestock production, hunting typically involves lower greenhouse gas emissions, reduced land conversion and minimal reliance on feed production.³¹

Some proponents argue that consuming wild game harvested through regulated hunting can contribute to more sustainable diets. However, the scale of hunting is generally insufficient to replace industrial meat production, and therefore its contribution to global food systems remains limited.

7 Ethical Debates and Animal Welfare

Ethical debates on animal welfare center on balancing human needs with the moral obligation to minimize animal suffering, largely focusing on sentient beings' capacity to feel pain.³²

7.1 Ethical Criticisms of Sport Hunting

Despite potential ecological and economic benefits, sport hunting remains highly controversial. Critics argue that killing animals for recreational purposes raises serious ethical concerns regarding animal welfare and moral responsibility.

Animal rights advocates contend that wildlife should not be treated as a resource for human enjoyment or economic gain. From this perspective, hunting for sport is viewed as ethically unjustifiable regardless of its potential conservation benefits.³³

Particular controversy surrounds trophy hunting, where hunters seek specific animals with distinctive physical characteristics such as large horns or antlers. Critics argue that trophy hunting prioritizes individual animal death for symbolic rewards rather than ecological necessity.

³¹ Milner et al., 2007.

³² Kiani et al., 2022.

³³ Singer, 1975.

7.2 Animal Welfare Considerations

Animal welfare concerns also focus on the methods used in hunting. Ethical hunting practices emphasize minimizing animal suffering by ensuring quick and humane kills. Regulations often require hunters to undergo training and obtain certification to demonstrate competence with firearms and hunting techniques.

Many wildlife agencies establish guidelines to ensure that hunting methods are consistent with animal welfare standards. These guidelines may include restrictions on certain hunting methods, requirements for appropriate equipment and rules regarding shot placement.³⁴

However, enforcement of these standards varies across regions, and unethical practices can still occur in poorly regulated systems.

7.3 Balancing Ethics and Conservation

The ethical debate surrounding hunting often reflects broader philosophical differences regarding human relationships with nature. Some conservationists adopt a utilitarian perspective, arguing that wildlife can be used sustainably if the overall ecological outcomes are positive.

Others emphasize intrinsic values of wildlife, arguing that animals possess inherent rights that should limit human exploitation.

Reconciling these perspectives remains a major challenge for wildlife management. Many conservation policies attempt to balance ecological sustainability with ethical considerations by promoting responsible hunting practices and strict regulatory oversight.

³⁴ Milner et al., 2007.

8 Governance and Policy Frameworks

8.1 Legal Regulation of Hunting

Effective governance is essential for ensuring that hunting contributes to sustainability rather than ecological degradation. Governments typically regulate hunting through legislation that defines hunting seasons, species protection status and licensing requirements.

Protected species may be completely excluded from hunting activities, while other species may be harvested within specified quotas. Wildlife agencies are responsible for monitoring populations and adjusting regulations accordingly.

International agreements also play a role in regulating wildlife trade and hunting practices. For example, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) regulates the international trade of wildlife products to prevent overexploitation.

8.2 Monitoring and Enforcement

Regulatory frameworks are only effective when accompanied by strong enforcement mechanisms. Illegal hunting, often referred to as poaching, remains a significant threat to wildlife populations worldwide.

Law enforcement agencies and conservation organizations employ various strategies to combat illegal hunting, including wildlife patrols, surveillance technologies and community engagement programs.

In some cases, regulated hunting programs have been used as tools to reduce poaching by providing legal economic benefits to local communities.³⁵

³⁵ Naidoo et al., 2016.

8.3 Community-Based Conservation

Community-based conservation approaches have gained increasing attention in recent decades. These strategies emphasize involving local communities in wildlife management decisions and revenue sharing.

By granting communities partial ownership or management rights over wildlife resources, conservation programs aim to align economic incentives with conservation outcomes.

Examples from southern Africa demonstrate that community-managed hunting concessions can contribute to both wildlife conservation and rural development when properly implemented.³⁶

9 Regional Case Studies

9.1 North America

North America provides one of the most widely cited examples of successful wildlife conservation linked to regulated hunting. The North American Model of Wildlife Conservation emphasizes public ownership of wildlife, science-based management and regulated hunting seasons.³⁷ Through this model, populations of species such as white-tailed deer, elk and wild turkey have recovered significantly following earlier declines.

9.2 Europe

In Europe, hunting traditions vary widely between countries. Many European nations maintain strong regulatory frameworks governing hunting activities, including strict quotas, licensing systems and habitat protection measures. Hunting organizations often collaborate with conservation agencies to monitor wildlife populations and maintain ecological balance.

³⁶ Lindsey et al., 2007.

³⁷ Geist, Mahoney & Organ, 2001.

Scotland: Hunting is predominantly carried out on large, privately owned estates, where professional hunters (gamekeepers) are employed to manage wildlife harvests. The principal game species are red deer and red grouse in the uplands, and pheasants and roe deer in the lowlands. Deer and grouse are managed wild game, whilst pheasants are generally reared and released prior to shooting. This case study allowed us to investigate how biodiversity varies under different land management regimes. Key stakeholders include the Game and Wildlife Conservation Trust, the Royal Society for the Protection of Birds, the Scottish Natural Heritage and the British Association for Shooting and Conservation.³⁸

Norway/Sweden: Here, hunting focuses on the non-agricultural wildlands that are comprised of boreal forest and alpine tundra habitats. Hunting rights belong to the landowners who can sell hunting permits but quota setting is closely regulated. Most hunting is focused on wild ungulates, grouse and large carnivores. Scandinavian hunting is motivated largely by the traditional, recreational and meat values of the harvest. Our analyses focus mainly on a number of representative study areas for which we have access to a range of background data and link these to the national and international institutional framework regulating hunting and biodiversity.³⁹

Spain: We focus on two study areas with contrasting situations with respect to biodiversity: Extremadura is a region with renowned biodiversity whereas southeastern Castilla-La Mancha is an area where raptor conservation problems are well known. We have investigated how biodiversity responds under different management practices for gamebird shooting on landholdings in these two areas. Hunting rights belong to landowners who can also invest in a range of related management techniques designed to increase gamebird numbers. Existing databases for biodiversity have been augmented with field surveys. Information on management practices such as predator control, disposal of feeding or water points, game crops has been obtained from land managers and we have collected data on the socio-economic aspects of hunting.⁴⁰

Croatia/Slovenia: The focus here is on the forested landscapes that constitute the border between Slovenia and Croatia. This represents one of the most intact assemblages of large mammals in Europe with wolves, bears and lynx all present,

³⁸ Hunting for sustainability, n.d..

³⁹ Linnell, Solberg & Andersen, 2005.

⁴⁰ Apollonio, Andersen & Putman, 2010.

along with red deer, roe deer and wild boar. Most of the area is subject to hunting. Hunting clubs rent hunting rights to hunt on public land. Our focus will be on large mammals, especially brown bears, which are hunted as a valuable game species in Croatia, and are controlled under a controversial derogation from the habitats directive in Slovenia. Results from this case study provide evidence to inform the debate on the relative merits of hunting and protection for the conservation of brown bears.⁴¹

9.3 Africa

In several African countries, trophy hunting has been integrated into conservation and tourism strategies. While controversial, some studies suggest that regulated trophy hunting can generate revenue for conservation and provide incentives to maintain wildlife habitats.⁴²

Ethiopia: Ethiopia is a country exceptionally high in biodiversity. However, most wildlife are under threat due to a range of causes including habitat loss, bushmeat and subsistence hunting despite the existence of national parks and controlled hunting areas. The human and financial resources for protected area management is low. Two sources of income are from concession fees and trophy fees in the controlled hunting areas. However, reinvestment of hunting revenue into conservation or development is minimal or absent. Here we investigated a) the cultural drivers of hunting behaviour, b) the institutions around benefits sharing and c) the sustainability of trophy hunting of mountain nyala.⁴³

Tanzania: In this case we focus on the role and impacts of hunting in the Serengeti which is recognized as home to one of the world's last intact large animal migrations involving in excess of two million ungulates with the largest and most diverse guild of carnivores in Africa. The Serengeti is zoned into i) protected areas allowing only ecotourism, ii) game reserves allowing only trophy hunting and iii) community-based wildlife management areas allowing both trophy hunting and subsistence hunting. Although income from ecotourism and trophy hunting supports the management of the protected areas, these economic benefits are undermined because the indigenous population, which is ethnically diverse and includes agro-pastoralists, pastoralists

⁴¹ Krofel, Jonozović & Jerina, 2012.

⁴² Lindsey et al., 2007.

⁴³ Evangelista et al., 2007.

and hunter-gatherers, engage in illegal hunting both for subsistence and for commercial sale. We provide some insights to inform more effective policy interventions. The project was built on three important principles. First, the team developed common research frameworks for each discipline that formed the basis for work in each case study. Second, we invested substantial effort in building capacity across the project partners. Third, we recognised the added value of integrating research across a range of disciplines within each case study. These principles facilitated integration and led to novel approaches from which new insights are continuing to emerge, as showcased at the variety of past and forthcoming conferences.⁴⁴

However, the effectiveness of these programs depends heavily on governance quality, transparency and equitable distribution of economic benefits.

10 Hunting and the Sustainable Development Goals

The United Nations Sustainable Development Goals (SDGs)⁴⁵ emphasize the importance of balancing environmental protection, economic development and social well-being. Regulated hunting may contribute to several SDGs, including:

- SDG 15 – Life on Land: conservation of terrestrial ecosystems and biodiversity;
- SDG 8 – Decent Work and Economic Growth: employment in rural tourism sectors;
- SDG 12 – Responsible Consumption and Production: sustainable use of natural resources.⁴⁶

However, achieving these contributions requires effective management systems that prioritize ecological sustainability and social equity.

11 Empirical Part

The empirical part of the paper is a supplement to the theoretical starting points and enables the verification of the set research hypotheses. The methodology of the survey was a quantitative part, with a survey method, using a structured survey

⁴⁴ Sinclair et al., 2008.

⁴⁵ UNDP, n.d.

⁴⁶ United Nations, 2015; IUCN, 2016.

questionnaire consisting of 22 questions. The quantitative part of the research was based on the analysis of respondents' responses to closed-type questions, designed as nominal and ordinal variables and Likert scales. Such a design made it possible to measure attitudes regarding the importance of humane hunting as a sport and to assess its effect on perceived adequacy.

A special methodological feature of the survey was the classification of respondents into generational groups, which made it possible to ascertain the differences between various generations of hunters. Respondents were divided into Generation Veterans (over 80 years old), Baby Boom Generation (61 to 79 years old), Generation X (45 to 60 years old), Generation Y (29 to 44 years old), and combined Generation Z and Alpha (28 years old). These classifications were crucial for testing the research hypotheses related to intergenerational differences in the perception of the importance of human hunting.

Table 1: Correlation between generational affiliation and membership in hunting

		Value	Approximate characteristic
Nominally by	Phi	,864	,000
	Cramerjev V	,499	,000
Number of valid cases		178	

Source: own research, 2025.

By generation, the membership structure varies significantly. The baby boom generation accounts for more than half of all (55.9%) respondents, with veterans accounting for an additional 11 (32.4%) of respondents. This distribution is expected given the age structure of these cohorts and demographic patterns, but it is also worrying. At the same time, the proportion of older members is decreasing.

The obtained empirical results confirm the existence of marked intergenerational differences in how Slovene hunters understand the modern principles of hunting. These differences can be explained by, and are a consequence of broader social, demographic and cultural changes in Slovenian society. The Slovenian hunting membership is burdened with an old population, and the influx of young people is dissatisfied. The strong value of the Cramer coefficient V further confirms that generational affiliation is an important factor in understanding changes in hunting forms. The findings are also important from the point of view of the consideration of the rights arising from membership in a hunting organization, as the change in

hunting forms also changes the scope and possible legal complexity of determining hunting status. The Slovene hunting population is disproportionately older, with relatively few young hunters. Younger hunters also tend to be more critical of certain traditional hunting practices, which they sometimes regard as inhumane or outdated.

The sample in the quantitative part of the research was designed as a non-random sample. The questionnaire was distributed both electronically through the 1KA online platform and in printed form. Appropriately completed questionnaires were included in the analysis. Although the sample is not representative of the entire population due to the way the data was collected, it nevertheless allows for an important analysis of perceptions and attitudes regarding the topic under consideration.

The structure of the sample was analyzed according to age, gender, education level, years of hunting, location of the hunting society and hunting status. The age structure was crucial, as it was the basis for forming the generational groups, which constituted the central comparative category in the verification of our hypotheses.

Table 2: Structure of respondents according to gender

		Frequency	%	Applicable %	Cumulative %
Valid	Woman	39	19,9	20,2	20,2
	Man	254	78,6	79,8	100,0
	Total	293	98,5	100,0	
Missing	Not answered	3	1,5		
	Total	196	100,0		

Source: own research, 2025.

A total of 196 hunters participated in the survey. 193 respondents answered the question about gender, while 3 (1.5%) did not. Valid responses were dominated by men, who accounted for 79.8 % of the sample (154 respondents), while women accounted for 20.2 % (39 respondents). The results indicate a marked gender imbalance in the sample, which should be taken into account when interpreting further findings and generalizing the results to the wider population. This is important because in standard social science, a 4:1 male-to-female imbalance creates a skewed sample. However, within the context of European and North American hunting, women historically make up between 8% to 15% of active hunters. This sample therefore overrepresents women compared to the actual base population. Therefore, if we would generalize our findings to "the general population," the data

is highly skewed toward a male viewpoint; but if we generalize it to "the active hunting community," the sample is highly valid and actually provides an enhanced voice to female hunters.

Table 3: Duration of membership in the hunting association (in years)

	Valid	168
	Missing	28
Arithmetic mean		16,43
Medium		14,00
Mode		3
Standard deviation		12,858

Source: own research, 2025.

The duration of respondents' hunting status is also important for understanding their responses (Table 6.2). The analysis is based on 168 (85.7%) valid answers; 28 (14.3%) respondents did not answer this question. The average duration of membership in a hunting family is 16.43 years, which indicates that there is a relatively high proportion of persons with long-term hunter status in the sample.

Although respondents were divided into five generational groups, the test results did not show statistically significant differences between generations in terms of how they assessed the importance of humane hunting as a form. This conclusion is based on the results of the Kruskal-Wallis test which yielded a score of 1.608, which is a very low value and means that the differences between generations are small. The degree of statistical significance (p) is 0.658, but since it is greater than 0.05, the differences are not statistically significant.

Table 4: Normality test(a)

How important is humane hunting to you?

Hunters	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistics	df	Sig.	Statistics	df	Sig.
Generation X	0,385	3		0,75	3	0
Baby boom	0,332	19	0	0,733	19	0
Veterans	0,272	10	0,035	0,802	10	0,015

a. The variable »How important is human hunting to you?« is constant in generation Y. Due to absence of variability, this generation we excluded from analysis.

Source: own research, 2025.

11.1 Verification of the Set Research Hypotheses

For the research part of the task, we established three search hypotheses, which the empirical data we obtained substantiated. Thus, we conclude that:

H1: as we anticipated, the study confirmed respondents agree that poorly regulated hunting can lead to overexploitation, species decline and ecosystem disruption.

The hypothesis was tested on the basis of the answers to questions 13 and 14 from the questionnaire. The first refers to the subjective assessment of the importance of poorly hunting as a form of hunting for the individual, and the second to the degree of agreement with the statement that overexploitation, species decline and ecosystem disruption can lead to overexploitation, and represents an important element of humane hunting. These are similar, but conceptually different dimensions, as the first question emphasizes the individual or experiential level of understanding hunting, while the second emphasizes the normative or systemic level of evaluation of the role of humane hunting.

H2: in line with what we anticipated, that Habitat Management and Other Issues (as we realise that some hunting reserves manage animal populations in ways that can negatively affect other species, while some practices, like travel for hunting, contribute to high carbon footprints) – is confirmed, as the hypothesis assumed that there are no statistically significant differences in assessment between generations and that the quality of the hunting standard affects the understanding of humane hunting and its consequences.

Also, the results of the Spearman correlation showed that there was no statistically significant association between age and the assessment of the impact of Habitat Management and Other Issues of the respondents on the quality of the hunting standard. The correlation coefficient is almost zero ($\rho = -0.022$), which indicates the absence of correlation between the two variables under consideration. The negative direction of correlation is negligible and has no substantive significance.

Table 5: Results of Spearman's correlation analysis between age and Impact of Habitat Management and Other Issues

		Impact of Habitat Management and Other Issues	Hunting internship
Spearman's coefficient of correlation	Impact of Habitat Management and Other Issues	Correlation coefficient	1,000
		Sig. (bilateral)	–,022
	Hunter's Age		,905
		Correlation coefficient	
		Sig. (bilateral)	

Source: own research, 2025.

H3: with which we assumed that Disruption of Social Structures (when hunting can impact the social groups and family structures of animals, as well as altering their use of dens and activity patterns – is partially confirmed.

For ease of interpretation, the Likert scale has been recorded so that a higher value means a higher degree of agreement (1 = disagree at all, 5 = strongly agree). The average approval rating is 4.37, indicating that, on average, respondents strongly agree with the statement. The average is markedly above the neutral value of 3, which means that a high degree of belief or agreement prevails in the sample. A relatively low standard deviation of 0.739 indicates a considerable uniformity of opinions among respondents, as the answers are relatively homogeneous and do not show major differences. Based on this descriptive analysis, we can conclude that the general pattern is dominated by the view that hunting disrupts animal social structures by affecting social groups, family structures dens and activity patterns.

Based on this analysis, we can conclude that Hypothesis 3 is partially confirmed. Both the respondents' general opinions and the surveyed hunters' subjective assessments indicate that disruption of social structures is perceived as having limited importance. This concept refers to the way hunting may affect animal social groups, family structures, den use, and activity patterns.

12 Discussion

Hunting has cultural, institutional, economic and ecological dimensions. Our aim was to develop a better understanding of these components in order to provide insights into the interaction between hunting and biodiversity of relevance to developing sustainable policy and practice. "Biodiversity of relevance" is a contextual concept primarily defined by organizations like the Food and Agriculture Organization (FAO) and the Convention on Biological Diversity⁴⁷ (CBD). It refers to the specific components of biological diversity - genes, species, populations, and ecosystems - that directly interact with, sustain, or are affected by a particular human activity or economic sector. In research framework, it means moving away from a generic definition of nature and focusing strictly on the ecological layers directly intertwined with hunting practices, wildlife stewardship, and habitat alteration.

The relationship between hunting and sustainability is complex and often controversial. While historical examples demonstrate that uncontrolled hunting can lead to severe wildlife declines, modern conservation frameworks increasingly recognize that regulated hunting may provide ecological and economic benefits.

Scientific evidence suggests that hunting can contribute to wildlife management by regulating population sizes, generating conservation funding and encouraging habitat protection. At the same time, ethical concerns regarding animal welfare and recreational killing remain significant sources of public debate.

The effectiveness of hunting as a conservation tool ultimately depends on governance quality. Strong legal frameworks, transparent management systems and community participation are essential to ensure sustainable outcomes.

13 Conclusion

Hunting has evolved from a fundamental survival activity to a complex practice situated at the intersection of culture, recreation and conservation. In the context of sustainability, regulated sport hunting can play a role in wildlife management and conservation when integrated into science-based regulatory frameworks.

⁴⁷ Convention on Biological Diversity, 1992. Retrieved from: <https://www.cbd.int/> (accessed: May 19, 2026).

The potential benefits of hunting include wildlife population regulation, habitat conservation incentives and economic contributions to rural communities. However, these benefits are contingent upon effective governance, ethical practices and rigorous scientific monitoring.

Future conservation strategies should focus on balancing ecological sustainability, cultural traditions and ethical considerations. While hunting alone cannot address global biodiversity loss, it may serve as one component of broader conservation approaches aimed at protecting wildlife and ecosystems for future generations.

Hunting is a widespread and diverse activity that fulfills many social, economic and ecological functions. It is not just carried out for the purpose of sport or provisioning but is central to cultural and social relations in many communities. Whilst there are clearly cases where species have been overhunted and need protection, hunting and associated management practices can be a force for nature conservation if performed according to best practice, which must be adapted to recognize local and national objectives and institutions. In some cases, hunting may actually increase the value of quarry species and this can lead to sustainable populations in a more effective way than total protection. There are now effective techniques that can be used to bring hunters and environmentalists together to build consensus on the most effective future policies to support human well-being. This objective can be achieved by recognizing broader ecosystem linkages and safeguarding the biodiversity that supports them. Another technique is to further strengthen the role of hunting and its culture as a steward of our lands. It is crucial to the success of biodiversity policy objectives in the wider countryside to better engage hunters and land managers at an early stage to develop adaptive or co-management strategies consistent with an ecosystem approach.

Legal Acts

Convention on Biological Diversity, 1992. Retrieved from: <https://www.cbd.int/> (accessed: May 19, 2026).

References

- Apollonio, M., Andersen, R. & Putman, R. (eds.) (2010). *European Ungulates and Their Management in the 21st Century*. Cambridge: Cambridge University Press.
- Berkes, F. (2012). *Sacred Ecology*. 3rd edn. New York: Routledge.
- Brundtland Commission (1987). *Our Common Future*. Oxford: Oxford University Press.

- Corvol, A. (2005). *Storms in the French forest. 16th – 20'th century*. Paris: L'Harmattan.
- Corvol, A. (2010). *Histoire de la chasse: L'Homme et la Bête*. Paris: Éditions Perrin.
- Côté, S. D., Rooney, T. P., Tremblay, J., Dussault, C. & Waller, D. M. (2004). Ecological impacts of deer overabundance, *Annual Review of Ecology, Evolution, and Systematics*, 35, 113–147.
- 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. *On Earth*, 4(2), 238–253.
- Durantel, P. (2015). *Encyclopédie pratique de la chasse*. Chamalières: Éditions Artémis.
- Evangelista, P., Norman, J., Berhanu, L., Kumar, S. & Alley, N. (2007). A profile of the mountain nyala. *African Journal of Ecology*, 46(4), 531–541.
- Geist, V., Mahoney, S. P. & Organ, J. F. (2001). Why hunting has defined the North American model of wildlife conservation. *Transactions of the North American Wildlife and Natural Resources Conference*, 66, 175–185.
- Hagney, M. (2025). The environmental benefits – and limitations – of hunting as a food source. Retrieved from: <https://foodprint.org/blog/the-environmental-benefits-and-limitations-of-hunting-as-a-food-source/> (accessed: May 9, 2026).
- Holling, C. S. (1978). *Adaptive Environmental Assessment and Management*. London: Wiley.
- Hunting for sustainability (n.d.). Focal areas. Retrieved from: <https://hunt.nina.no/About-HUNT/Focal-areas> (accessed: July 13, 2026).
- Isenberg, A. C. (2000). *The Destruction of the Bison*. Cambridge: Cambridge University Press.
- IUCN. (2016). *Informing Decisions on Trophy Hunting*. Gland, Switzerland: International Union for Conservation of Nature.
- Kiani, A. K., Pheby, D., Henehan, G., Brown, R., Sieving, P., Sykora, P., Marks, R., Falsini, B., Capodicasa, N., Miertus, S., Lorusso, L., Dondossola, D., Tartaglia, G.M., Ergoren, M. C., Dundar, M., Michelini, S., Malacarne, D., Bonetti, G., Dautaj, A., Donato, K., Medori, M. C., Beccari, T., Samaja, M., Connelly, S. T., Martin, D., Morresi, A., Bacu, A., Herbst, K. L., Kapustin, M., Stuppia, L., Lumer, L., Farronato, G. & Bertelli, M. (2022). Ethical considerations regarding animal experimentation. *Journal of Preventive Medicine and Hygiene*, 63(2S3). <https://doi.org/10.15167/2421-4248/jpmh2022.63.2S3.2768>
- Krofel, M., Jonozović, M. & Jerina, K. (2012). Demography and mortality patterns of removed brown bears in a heavily exploited population. *Ursus*, 23(1), 91–103.
- Lee, R. & Daly, R. (1999). *The Cambridge Encyclopedia of Hunters and Gatherers*. Cambridge: Cambridge University Press.
- Lindsey, P. A., Roulet, P. A. & Romanach, S. S. (2007). Economic and conservation significance of the trophy hunting industry in sub-Saharan Africa, *Biological Conservation*, 134(4), 455–469.
- Linnell, J. D. C., Solberg, E. J. & Andersen, R. (2005). The European dimension of large carnivore management, *Conservation Biology*, 19(2), 298–302.
- Mckie, R. (2012). Humans and hunting: a two-million-year relationship: Evidence from an ancient butchery site in Tanzania shows early man was capable of ambushing herds of large animals and selecting. *The Observer*. Retrieved from: https://www.theguardian.com/science/2012/sep/23/human-hunting-evolution-2million-years?utm_source=chatgpt.com (accessed: September 25, 2025).
- Milner, J. M., Nilsen, E. B. & Andreassen, H. P. (2007). Demographic side effects of selective hunting in ungulates. *Conservation Biology*, 21(1), 36–47.
- Naidoo, R., Weaver, L. C., De Longcamp, M. & Du Preez, P. (2016) Complementary benefits of tourism and hunting to communal conservancies in Namibia. *Conservation Biology*, 30(3), 628–638.
- Organ, J. F., Mahoney, S. P. & Geist, V. (2012). *Born in the Hands of Hunters: The North American Model of Wildlife Conservation*. Washington, DC: The Wildlife Society.
- Patou-Mathis, M. (2009). *Mangeurs de viande, de la préhistoire à nos jours*. Paris: Éditions Perrin.
- Sinclair, A. R. E., Packer, C., Mduma, S. A. R. & Fryxell, J. M. (eds.) (2008). *Serengeti III: Human Impacts on Ecosystem Dynamics*. Chicago: University of Chicago Press.
- Singer, P. (1975). *Animal Liberation*. New York: HarperCollins.

- Sottolano, J. (2025). Sustainable Hunting Practices: How to Hunt Responsibly and Ethically
Retrieved from: <https://joesottolano.com/sustainable-hunting-practices-responsible-and-ethical-hunting-for-the-future/> (accessed: September 26, 2025).
- UNDP. (n.d.). What are the Sustainable Development Goals?. Retrieved from:
<https://www.undp.org/sustainable-development-goals> (accessed: September 26, 2025).
- United Nations. (2015). *Transforming our world: the 2030 Agenda for Sustainable Development*. New York, NY: United Nations.

About the author

PhD candidate.