1 CPW Fact Sheet

SUSTAINABLE WILDLIFE MANAGEMENT AND **BIODIVERSITY**

Collaborative Partnership on Sustainable Wildlife Management

The Collaborative Partnership on Sustainable Wildlife Management (CPW) is a voluntary partnership of international organizations with substantive mandates and programmes for the sustainable use and conservation of wildlife resources. The mission of the CPW is to increase cooperation and coordination among its members and other interested parties on sustainable wildlife management to promote the sustainable use and conservation of terrestrial vertebrate wildlife in all biomes and geographic areas.

Sustainable Wildlife Management

Sustainable wildlife management (SWM) is the sound management of wildlife species to sustain their populations and habitat over time, taking into account the socioeconomic needs of human populations. This requires that all land-users within the wildlife habitat are aware of and consider the effects of their activities on the wildlife resources and habitat, and on other user groups. In this factsheet, the term "wildlife" refers to "terrestrial or semi-terrestrial vertebrates".

In view of its ecological, social and economic value, wildlife is an important renewable natural resource, with significance for areas such as rural development, land-use planning, food supply, tourism, scientific research and cultural heritage. If sustainably managed, wildlife can provide continuous nutrition and income and contribute considerably to the alleviation of poverty as well as to safeguarding human and environmental health.

The objective of the fact sheets produced by the CPW is to inform decision-makers, stakeholders and the general public about issues and opportunities relating to the sustainable use and conservation of terrestrial and semi-terrestrial vertebrate wildlife.

What is at stake?

Balancing needs

Human fate is tightly linked with biodiversity. Biodiversity – that is, ecosystems, species and genetic diversity – underpins the productivity, resilience and adaptive capacity of ecosystems and is essential for maintaining ecological processes. Biodiversity contributes to a multitude of products and ecosystem services that sustain human well-being, including water and air purification, timber and other wild resource production, provision of oxygen, medicine, and spiritual and cultural benefits. Wild animals are an integral part of biodiversity, and play an important role in ecological processes such as pollination, seed dispersal and decomposition. Wildlife is also important as a source of food and clothing, for recreation, tourism, and cultural uses, and as esthetic and cultural icons in most areas of the world.

The role of sustainable wildlife management in biodiversity conservation has provoked debate, particularly in its aspects relating to hunting and trapping. SWM supports biodiversity conservation by emphasizing the benefits that humans can obtain from biodiversity, and thereby encouraging people to safeguard and value wildlife by managing it responsibly. Its role is likely to become increasingly important in the face of continuing global pressures on wildlife resulting from an increasing human population, urbanization and changing lifestyles. Wildlife management is important to balance both the needs of people as well as the needs of wildlife, and is a key component in efforts to ensure the conservation, sustainable use and access and management of associated benefits derived from biodiversity.

CPW, October 2014

Key issues

Species and habitat loss

Efforts to achieve SWM face severe challenges. Many wildlife species are under threat, and some have become extinct, due to a variety of causes. For example, 26% of mammals and 13% of birds in tropical humid forests are listed by the International Union for Conservation of Nature (IUCN) as endangered or vulnerable.[1] The main cause of these population declines is habitat loss, whereas over-exploitation by humans,[2] invasive species, pollution, and climate change are other important causes of decline. Local causes of decline vary but most involve the conversion of grasslands and forests to agricultural and pasture lands and unsustainable forest harvesting. Fragmentation and the loss of landscape connectivity can further degrade habitats for some large species.

Wildlife loss has consequences for vital ecological processes that support biodiversity, and may have serious socioeconomic impacts. For example, the loss of certain large wildlife species can affect forest regeneration, through lack of seed dispersal for certain trees, and the loss of key predators can lead to elevated herbivore numbers with consequent damage to habitats, or such species becoming nuisances to humans.[3] Loss of habitat and humans encroaching on nearby wildlife habitats also results in human–wildlife conflict. For example, elephants in some parts of Africa and Asia cause damage by eating cultivated fruits or trampling crops. These types of problems are often dealt with locally through unregulated killing of the animals, rather than solving the broader problems through wildlife conservation and management and land-use planning.

Ensuring sustainable trade and consumption

Other issues of concern for SWM involve illegal or unregulated trade in wild animals and in their parts and products. Some iconic species, such as rhinoceros and elephant, are declining because of excessive illegal killing and trade.[4] It has been estimated that in East and Southeast Asia, tens of millions of wild animals are traded each year regionally and from around the world for food or use in traditional medicines. Trade, and local and regional consumption, of wild animal meat in Central Africa alone is reported to be over 1 billion kg per year, and estimates for consumption in the Amazon Basin range from 67 to 164 million kg annually just for mammals.[5] While much of this may be legal and sustainable, and some provides important livelihood and socioeconomic benefits, some poses a serious threat to wildlife species, including such endangered iconic species as tigers.

It is recognized that protected areas alone will not save all wildlife species; only a relatively small amount of any species' habitat is protected in most cases. Hence, it is important to manage and protect the majority of the habitats and populations of animals that exist outside protected areas as well. For many wildlife species, landscape-level planning and sustainable use are a key to long-term survival. Often, however, responsible agencies capacity or funding is insufficient to properly manage these species, and there may be no adequate policies in place to support SWM.

Experience and knowledge

The ecological and human dimensions of management

Sound wildlife management programs build partly upon an understanding of biological and ecological factors, such as species' habitats, population sizes, migration routes, and population demographics. Effective and equitable programs also recognize the importance of the human dimension, not only in terms of people's needs and equitable benefit-sharing, but also with respect to generating incentives and funding for wildlife conservation and sustainable use. For example, the fast-growing ecotourism market caters to a public interested in – and willing to pay for – more "authentic" experiences, which can change attitudes to products such as ivory or rhino horn.

Local communities are often enabled to benefit from wildlife management, and private landowners may receive incentives from tourism and sport hunting to invest in wildlife. The vicuña (*Vicugna vicugna*) of the Andes was hunted to the brink of extinction in the 1950s for its fine wool, but a ban on international trade brought the population size to the ecosystem's carrying capacities, enabling the wool trade to reopen and creating an incentive for local communities to protect the vicuña by shearing for their wool. It is also important to ensure that some of the benefits from use of wildlife flow to local natural resource management authorities to sustain their management programs.

Ongoing development of management techniques

A vast body of both scientific and traditional/local knowledge exists, enabling the development of tools to protect and manage wildlife more effectively. In Namibia, the devolution of rights over wildlife and the acknowledgement of the relation between traditional knowledge and sustainable development has led to strong economic incentives for local populations, new models of conservation and successful recovery of wildlife populations. Techniques are based on an understanding of individual species' populations, habitat area and threats, and enable SWM to protect wildlife species from over-exploitation over the long term. Other techniques involve providing benefits to local people from wildlife use or incentives for conservation to communities and land-owners, for example through tax deferrals or direct payments to maintain habitats, and engaging stakeholders directly in wildlife management programs.

A key aspect of SWM is the continuous development of new knowledge and the testing of management techniques to determine their impact and effec-

tiveness. Such knowledge develops over time, both through experience and through targeted surveys and research, enabling mapping, active management, protection, and, in some cases, habitat recovery programs. New knowledge should be applied using an adaptive approach to wildlife management.

Ecotourism is a revenue-generating non-consumptive use of certain wildlife species than can provide additional income and incentive to protect and sustainably use biodiversity in appropriate landscapes and contexts. Such programs are now widespread, especially for bird-watching, in many countries. Nevertheless, these activities must be conducted in a sustainable manner so as not to cause excessive disturbances to the animals, damage to habitats from over-use, pollution or infrastructure, and to avoid conflicts with land-owners or local and indigenous communities.

Raising public awareness

A final but important key issue for SWM in the context of biodiversity conservation is education and public awareness. Such programs can strengthen conservation efforts by informing and involving managers, stakeholders and the general public in developing and enhancing management and conservation programs.

Challenges

Strengthening governance

Some of the main limitations to effective wildlife management include lack of organizational capacity, unclear or weak land tenure, poverty, poor governance, corruption, and lack of political will. Further, in some countries and in certain circumstances, a lack of devolution of power over wildlife resources to local communities and inadequate benefit-sharing hamper effective management. Also, with rising levels of prosperity in Asia and Africa and demand for "traditional" medicine, cures and/or foods, poaching can be a rational economic decision for those involved. Addressing this is a serious challenge.

Implementing national biodiversity strategies and action plans, meeting national and international targets, and integrating wildlife conservation and sustainable use values into other sectoral policies (e.g. energy, health, transportation) can assist countries in developing frameworks to effectively manage their natural wildlife resources.[6] Such approaches can improve governance of natural resources and help demonstrate the benefits of wildlife in generating sustainable value chains.

Climate change and demographics

Climate change and its effects on the other drivers of biodiversity loss, such as habitat change, has become a considerable challenge for managers in recent years. For example, diseases are now appearing in animal populations that have no immunity, through the movement of disease vectors to areas where they were previously unable to survive. These changes also have implications for human health.[7]

A growing challenge is the continual increase in human population and urbanization, resulting in encroachment and impoverishment of habitats, numerous human–wildlife conflicts relating to food and space to live, and over-exploitation and unsustainable consumption and production patterns.

Opportunities

Leveraging international instruments and mechanisms

Global commitments have increased political attention to sustainable wildlife management (SWM) and species conservation. For example, the Strategic Plan for Biodiversity 2011–2020 and Aichi Biodiversity Targets, adopted at the Convention on Biological Diversity (CBD) COP10, have been accepted by other conventions and sectors as a useful global framework to conserve, restore, and sustainably use biodiversity and enhance its benefits for people. The Addis Ababa Principles and Guidelines for the Sustainable use of Biodiversity[8] provide an additional framework to assist resource managers in ensuring that their use of biodiversity will not lead to a long-term decline. Other global contributions to SWM include the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and the Convention on the Conservation of Migratory Species of Wild Animals (CMS).[9] At a regional level, several agreements exist among species range states, e.g. the North American Migratory Birds Convention. Governments can take advantage of these agreements to support their own national programs.

Wildlife management could also benefit from the

application of the REDD+ mechanism, which is a forest carbon stock conservation and restoration measure designed to mitigate climate change in developing countries. By applying and respecting appropriate social and environmental safeguards, there could be strong opportunities to maintain forest carbon stocks, protect certain forest areas and manage production forests more sustainably, including for wildlife.

Promoting biodiversity conservation while meeting human needs

It is important to recognize that products and services derived from wildlife, whether from consumption, health-related recreation, or regulation of natural threats, can provide strong incentives to conserve biodiversity. Wildlife management can be viewed more broadly as a mechanism to promote biodiversity conservation, while simultaneously meeting human needs. Program managers can begin to think more holistically about ecosystem services and the role that habitat preserved specifically for wildlife species can play in delivering those services.

What is still to be learned?

- The full range of **human dependency on wildlife** and biodiversity.
- The **socioeconomic value of species** and their habitats, and how best to ensure their sustainable use, including access and equitable benefit sharing.
- The **biology, behavior and population dynamics** of many species.
- Effects and **effectiveness of individual SWM** interventions, including translocations.
- The impact and long-term consequences of **pollution and invasive – or imported – alien species** on wildlife species.
- The **impacts of climate change** on wildlife populations and humans.
- The **functional roles of certain wildlife species** in ecosystems.

Endnotes

1. www.iucnredlist.org
2. Vié, J.-C., C. Hilton-Taylor, and S.N. Stuart. 2009. Wildlife in a changing world – an analysis of the 2008 IUCN Red List of threatened species. Gland, Switzerland.
3. Parrotta, J.A., C. Wildburger, and S. Mansourian. 2012. Understanding relationships between biodiversity carbon, forests and people. IUFRO World Series, Vol. 31. www.iufro.org/publications/view/article/2012/11/19/iufro-world-series-31-new-iufro-gfep-global-assessment
4. Wasser, S.K., W.J. Clark, O. Driori, E.S. Kisamo, C. Mailand, B., Mutayoba, and M. Stephens. 2008. Combating the illegal trade in African elephant ivory with DNA forensics. Conservation Biology, 22: 1065–1071.
5. Karesh, W.B., R.A. Cook, E.L. Bennett, and J. Newcomb. 2005. Wildlife trade and global disease emergence. http://wwwnc.cdc.gov/eid/article/11/7/pdfs/05-0194.pdf
6. Thompson, I.D. and T. Christophersen. 2008. Cross-sectoral toolkit for the conservation and sustainable management of forest biodiversity. UNEP/CBD technical Series No. 39.
7. Daszak, P., A.A. Cunningham, and A.E. Hyatt. 2000. Emerging infectious diseases of wildlife – threats to biodiversity and human health. Science, 287: 443-449.
8. www.cbd.int/sustainable/addis.shtml
9. www.cites.org and www.cms.int

Further reading

CBD. 2014. Global biodiversity outlook 4. 2014. Montreal.
Groombridge, B. and M.D. Jenkins. 2002. World atlas of biodiversity. Cambridge, UNEP/WCMC.

CPW, October 2014

KEY MESSAGES

- **Sustainable wildlife management is an essential tool** to conserve certain biodiversity and is vital for maintaining and enhancing ecosystem services.
- Species biodiversity confers resilience to ecosystems, underpins the functioning of ecosystems and provides a multitude of products and services to society. Hence, it is imperative for **present and future generations to play an active role in safeguarding biodiversity** and sustainably using wildlife resources.
- **Improved education and cooperative management** are important aspects of successful SWM and conservation.
- **Incentive-driven approaches to manage and use wildlife sustainably** can contribute in a major way to wildlife and biodiversity conservation and benefit sharing with local communities.
- Many **SWM techniques could reduce pressure on species**, if implemented properly and maintained over time with political support.
- Biodiversity conservation is best achieved if **planned and implemented at the landscape level** for large species and for whole ecosystems, although in certain cases individual species approaches are warranted. SWM and species conservation strategies should be complementary for priority species.
- The capacity to implement **SWM needs to be continually improved through monitoring** and assessment, and adjusted with respect to changing human needs.
- The **effective implementation of national policies and global commitments** in support of SWM, such as those made under CBD, CITES or CMS, are important to address the challenges at appropriate levels.