

# Wild Life Conservation and Management System

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**Abstract – Wildlife Conservation is the practice of protecting endangered plant and animal species and their habitats. Among the goals of wildlife conservation are to ensure that nature will be around for future generations to enjoy and to recognize the importance of wildlife and wilderness lands to humans. Many nations have government agencies dedicated to wildlife conservation, which help to implement policies designed to protect wildlife. Numerous independent nonprofit organizations also promote various wildlife conservation causes.**

**In this website interested peoples can register and create their account. This site gives information's on endangered animals, birds and plants. Using this website user can share their knowledge about conservation of wildlife. These website also have the facility to view the article for unregistered user but registered user can upload and download the article related to the wildlife. It provides the wildlife crime map that gives the information regarding crimes happen in the wildlife. This website includes the facility to view the statics regarding the mortality in wildlife.**

**People can make this application useful for their research purpose related to wildlife conservation. This website also helpful for Analysis can be made and report can be generated.**

**Index Terms – Wild Life, Conservation, Animal.**

## 1. INTRODUCTION

Conservation is the practice of protecting wild plant and animal species and their habitats. The goal of wildlife conservation is to ensure that nature will be around for future generations to enjoy and also to recognize the importance of wildlife and wilderness for humans and other species alike.<sup>[1]</sup> Many nations have government agencies and NGO's dedicated to wildlife conservation, which help to implement policies designed to protect wildlife. Numerous independent non-profit organizations also promote various wildlife conservation causes. According to the National Wildlife Federation, wildlife in the United States gets a majority of their funding through appropriations from the federal budget, annual federal and state grants, and financial efforts from programs such as the Conservation Reserve Program, Wetlands Reserve Program and Wildlife Habitat Incentives Program. Furthermore, a substantial amount of funding comes from the state through the sale of hunting/fishing licenses, game tags, stamps, and excise taxes from the purchase of hunting equipment and ammunition,

which collects around \$200 million annually.<sup>[5]</sup>

Wildlife conservation has become an increasingly important practice due to the negative effects of human activity on wildlife. An endangered species is defined as a population of a living species that is in the danger of becoming extinct because of several reasons. Some of The reasons can be, that 1. the species have a very low population, or 2. they are threatened by the varying environmental or positional parameters

### Segments:

- Applications- On Demand
- Infrastructure

### Applications- On Demand

Promote community-based natural resource management and tourism development: Often in challenging political environments.

Help countries achieve their biodiversity goals: It will support the implementation of country priorities identified in the National Biodiversity Strategy and Action Plan, Elephant

Action Plan and other wildlife and tourism national strategies.

Accelerate learning: It will develop an online repository of information and conduct training and capacity building workshops to ensure knowledge exchange between countries, partners and other stakeholders. It will provide opportunities for regional and global knowledge exchanges.

### Infrastructure

Infrastructure is a necessary part of the development associated with a growing human population, but it can also have devastating impacts on the environment. The road through the rainforest may fragment habitat or cut off the migration route for an endangered species. The dam may have diverted water from freshwater habitats already struggling through a drought. A spill from the oil platform may have killed marine organisms and left the shoreline polluted. Environmental concerns are not always considered during the design, planning and construction of infrastructure projects. WWF works with governments, industry and other leaders to encourage the consideration of

sustainability in

For some species, particularly those that are large, rare, or are regularly brought into contact with busy roads (e.g., migration pathways), road-kills can have a significant effect on conservation status. (v) Road systems are a source of biotic and abiotic effects on the surrounding landscape. The extensive area occupied by road systems and the ecological impact of roads on wildlife means that they are too important to be neglected in conservation planning. Wildlife conservation must receive thorough consideration in the planning, construction and on-going management of road systems. The reserved status of roads, their geographical extent and continuity, and their network structure provide valuable opportunities for retaining and expanding wildlife habitat in disturbed environments, and for restoring or enhancing continuity to natural elements in the landscape. However, wildlife managers and managers of road systems must investigate further and implement practical measures to reduce the isolating effects of roads that bisect natural environments, to minimize the mortality of animals on roads and to limit disturbance to the surrounding environment these efforts, including examining innovative ways reduce environmental impact and protecting sensitive habitat that may be irrevocably damaged by these projects.

## 2. LITERATURE REVIEW

### ROADS, ROADSIDES AND WILDLIFE CONSERVATION

Roads are transport corridors imposed on the environment by humans for the movement of people and materials. Road systems are extensive in length and in the area that they occupy, and they extend pervasively throughout most terrestrial landscapes and habitats. A review of published literature reveals five major impacts of road systems on wildlife: (i) Road reserves provide habitat for wildlife. Roadside vegetation has greatest value as a wildlife habitat when it comprises remnant or regenerated strips of indigenous vegetation. (ii) Roads, roadside habitats and the aerial space above roads can facilitate the movement of animals along the direction of the road reserve. (iii) Road reserves can act as a filter or barrier to the movements of wildlife through the landscape, thus dividing and isolating populations to varying extents. (iv) Roads are a source of mortality for wildlife

**Human-wildlife conflict (HWC)** is fast becoming a critical threat to the survival of many globally endangered species, in particular to large and rare mammals such as the Sumatran tiger (*Panthera tigris sumatrae*) and the Asian lion (*Panthera leo persica*), but also to less endangered species such as the snow leopard (*Uncia uncia*) and the Red colobus monkey (*Procolobus kirkii*). The numerous cases from countries all over the world demonstrate the severity of human-wildlife conflict and suggest that an in depth analysis is essential to understand the problem and support the conservation prospects

of threatened and potentially endangered species. Protected areas, the cornerstone of modern biodiversity conservation, go some way to protecting species (Bruner et al., 2001). However, they do not completely resolve human wildlife conflicts since they do not always exclude destructive human impacts (Liu et al., 2001). Equally, protected areas often only protect a part of an ecosystem or species range, and wildlife dispersal from such areas may increase conflict with man (Woodroffe & Ginsberg, 1998). Even as alternative forms of land use, such as wildlife tourism, are implemented in an attempt to derive sustainable benefits from wildlife, conflict may remain (Roe et al., 1997; Goodwin et al., 1998). However what is the exact definition of HWC, when and where does it usually occur?

According to the World Conservation Union (World Park Congress 2003), it occurs when wildlife's requirements overlap with those of human populations, creating costs to residents and wild animals. Decker et al. 2000, defines Human-wildlife conflicts as interactions between humans and wildlife where negative consequences, whether perceived or real, exist for one or both parties (Decker et al. 2002). Direct contact with wildlife occurs in both urban and rural areas, but it is generally more common inside and around protected areas, where wildlife population density is higher and animals often stray into adjacent cultivated fields or grazing areas. A set of global trends has contributed to the escalation of HWC worldwide. These can be grouped into human population growth, land use transformation, species habitat loss, degradation and fragmentation, growing interest in ecotourism and increasing access to nature reserves, increasing livestock populations and competitive exclusion of wild herbivores, abundance and distribution of wild prey, increasing wildlife population as a result of conservation programmes, climatic factors and stochastic events.

HWC has far reaching environmental impacts. Species most exposed to conflict are shown to be more prone to extinction (Ogada et al., 2003) because of injury and death caused by humans; these can be either accidental, such as road traffic and railway accidents, capture in snares set for other species or from falling into farm wells, or intentional, caused by retaliatory shooting, poison or capture. Such human-induced mortality affects not only the population viability of some of the most endangered species, but also has broader environmental impacts on ecosystem equilibrium and biodiversity preservation. Human-wildlife conflicts undermine human welfare, health and safety, and have economic and social costs. Nuisance encounters with small animals, exposure to zoonotic diseases, physical injury or even death caused by large predators' attacks have high financial costs for individuals and society in the form of medical treatments to cure and prevent infections transmitted from animals through human contact (Ministry of Water, Land and Air Protection, British Columbia, 2003). Humans can be economically affected through destruction and damage to property and

infrastructure (e.g. agricultural crops, orchards, grain stores, water installation, fencing, and pipes), livestock depredation,

Transmission of domestic animal diseases, such as foot and mouth. Negative social impacts include missed school and work, additional labor costs, loss of sleep, fear, restriction of travel or loss of pets (Hoare, 1992; Human-Elephant Conflict Working Group, HECWG). Such broad environmental, human health and safety, economic and social impacts suggest that governments, wildlife managers, scientists and local communities need to be aware of the problem and adopt measures to resolve them in the interest of humans, wild animals and the environment. The aim of this research therefore, was to facilitate the coexistence of humans and wildlife and assist affected communities of Chiyaba GMA in applying best management practices through Environmental Education. However, the point to note is that, there is no simple or single solution. Different circumstances, beliefs and values are to be taken into account in evaluating which approaches are the best

#### **A BRIEF HISTORY OF HUMAN-WILDLIFE CONFLICT**

Fossil records show that the first hominids fell prey to the animals with which they shared their habitats and shelters. Forensic evidence has recently demonstrated that the “Taung skull”, perhaps the most famous hominid fossil, which was discovered in South Africa in 1924, belonged to a child who was killed by an eagle two million years ago (Berger and Clarke, 1995; Berger, 2006). Crocodiles have an ancient lineage dating back to the Mesozoic era, and have remained functionally unchanged for longer than the human species has been in existence. It is likely that crocodiles have attacked and eaten humans and their predecessors in Africa over the last four million years. Egyptian historical records reveal that in 2000 BC, hippopotamuses in the Nile delta in Egypt fed on cultivated crops while crocodiles ate livestock and occasionally humans. It is no coincidence that the Egyptian god of evil was depicted as the crocodile-headed deity Sobek.

Human-elephant conflict is as old as agriculture in Africa (Treves and Naughton-Treves, 1999). San or Bushman rock art in Africa frequently portrays people fleeing from predators or other large animals. Pre-colonial and early nineteenth century historians describe areas in Africa and other parts of the world where elephants invaded human cultivations, causing food shortages and leading to the displacement of settlements (Barnes, 1996). Some authors blame colonialism for ruining traditionally harmonious relations between wildlife and local people (Adams and McShane, 1992). In actual fact, from the eighteenth to the mid-twentieth centuries, the larger African mammals were regarded more as a resource to be exploited than a major threat. Ivory formed a cornerstone of the early trade with Europe and the Orient, while meat and hides were essential products both for the African people and colonialists

alike. In the twentieth century, with the expansion and development of modern agriculture, exploitation diminished and interaction with large wildlife species came to be increasingly dominated by conflict.

#### **STATEMENT OF THE PROBLEM**

Human-animal conflict, particularly human-carnivore conflict, is a growing problem in today’s crowded world, and can have significant impacts on both human and wildlife populations. For instance, species most exposed to conflict are shown to be more prone to extinction (Ogada et al., 2003) because of injury and death caused by humans; these can be either accidental, such as road traffic and railway accidents, capture in snares set for other species or from falling into farm wells, or intentional, caused by retaliatory shooting, poison or capture. Such human-induced mortality affects not only the population viability of some of the most endangered species, but also has broader environmental impacts on ecosystem equilibrium and biodiversity preservation. Human-wildlife conflicts undermine human welfare, health and safety, and have economic and social costs. Nuisance encounters with small animals, exposure to zoonotic diseases, physical injury or even death caused by large predators’ attacks have high financial costs for individuals and society in the form of medical treatments to cure and prevent infections transmitted from animals through human contact (Ministry of Water, Land and Air Protection, British Columbia, 2003). Humans can be economically affected through destruction and damage to property and infrastructure (e.g. agricultural crops, orchards, grain stores, water installation, fencing, and pipes), livestock depredation, transmission of domestic animal diseases, such as foot and mouth.

Negative social impacts include missed school and work, additional labour costs, loss of sleep, fear, restriction of travel or loss of pets (Hoare, 1992; Human-Elephant Conflict Working Group, HECWG). Despite the application of different management practices, both locally and globally, the problem still exists. This calls for techniques and innovative approaches that could make a meaningful contribution to resolving such a long-term problem. One such technique and innovation is environmental education which in the context of this study was applied to address the problem in Zambia’s Chiyaba Game Management Area. Being an innovation, 6 environmental education and its role in the community was not yet known or understood by key players in the human-animal conflict of Chiyaba. Such a situation posed a problem which needed to be investigated and, hence, the present study

#### **Overview of the Human-Wildlife Conflict Worldwide**

This chapter reviews a selection of cases to provide a better understanding of HWC worldwide and to highlight common problems across local, regional and national levels. The case studies cover Europe, Africa, North America and Asia and

demonstrate that HWC is more intense in the tropics and in developing countries where livestock holdings and agriculture are an important part of rural people's livelihoods and incomes. In these regions, competition between local communities and wild animals, for the use of natural resources, is particularly intense and direct and resident human populations are very vulnerable. Of course, the relative impact of wildlife damage on farm production and household income varies greatly according to the amount of land owned and people's economic dependence on rural activities (Messmer, 2000). Clearly people with a low standard of living are particularly at risk, as are agro-pastoralists who depend exclusively on production and income from their land. This overview confirms that conflict is particularly common in reserve borders, where species that rely on extensive territories come into contact with human settlements. In effect, border zones of protected areas may be considered population sinks: critical zones in which conflict is the major cause of mortality (Woodroffe and Ginsberg, 1998). These case studies also demonstrate that conflict is most acute in zones in which a wide range of species coexists with high-density human populations (Ogada et al., 2003).

Nature reserves that encompass densely populated human settlements seem to pose the greatest challenge. Many of the cases reported here are from India, where 69 % of the reserves support an estimated local population of more than three million people, who engage in agriculture, livestock grazing and extraction of forest products (Madhusudan, 2003) or Kenya, where the largest park system of the country, Tsavo National Park buffer zone (ca.20, 000km<sup>2</sup>) supports almost 250,000 people (Patterson et al., 2004). The cases briefly described below are sorted by geographical regions, taking into consideration many different species and subspecies and helping explain a specific issue, dimension or aspect of HWC. A small paragraph before each case study explains the reasons for their inclusion in the review. When the species' conservation status is of particular interest, it is specified according to the World Conservation Union (IUCN) Red List of threatened species (2003).

It is important to note that most of the species concerned are carnivores and large home range species, which are important from a conservation point of view. In fact, they have a profound influence on biological communities and often alter the structure and function of the entire ecosystem via interspecific competition and regulation of prey population density (Treves and Karanth, 2003b). If large home range and keystone species are not protected, the entire biodiversity conservation is undermined. In addition to the species discussed in this report, there are some well-known groups of invasive vertebrates such as rodents, dogs, birds (blackbird, pigeon) and snakes causing problems in urban and rural areas; they will not be mentioned because numerous comprehensive overviews of conflict, technical information and management options have been recently published (Fall and Jackson, 2002).

### Wildlife Conflict in India

Tigers (*Panthera tigris*), endangered; Leopard (*Panthera pardus*), endangered] In the Indian state of Rajasthan, the Sariska Tiger Reserve supports a population of about 107,770 people distributed in 117 villages, which are located in and around the protected area. The study quantifies the cost of living in close proximity to a nature reserve and estimates the extent of crop and livestock losses, given that agriculture and livestock keeping are the main economic activities. Many species of wild herbivores are blamed for crop raiding in this region: Nilgai (*Boselaphus tragocamelus*) and wild boar (*Sus scrofa*) are reported to be responsible for at least 50% of the damage, while other species as sambar (*Cervus unicolor*), chital (*Axis axis*), common langur (*Presbytis entellus*), rhesus monkey (*Macaca mulatta*) and parakeets (*Psittacula krameri*) accounted for the rest.

Nilgai usually raids crops in the evening and tends to favour the degraded edges of forest villages. Wild boar instead, acts at night, while other ungulates such as sambar and chital are usually confined to forest cores. The data on crop damage relevant from 1996-1997 revealed that the annual crop losses varied according to the type of crop grown, in fact the annual loss for chickpeas (*Cicer arietinum*) 10-27% per hectare (ha), maize (*Zea mays*) 12-24% per ha and mustard (*Brassica campestris*) 10-27% were higher than for wheat (*Triticum aestivum*) 6-14% per ha and pearl millet (*Pennisetum typhoideum*) 6-15% per ha. The percentages ranged so broadly because the distance between the reserve border and the household surveyed varied from 0 to 3 Km and in general the depredation increased with closer proximity to the reserve. In monetary terms, the annual average value of crop losses in that period of time, corresponded to 3,280 Indian Rupees(Rs)(US\$ 91)per household located inside the reserve, and Rs.2,430(US\$ 67) per household located 2.5 Km away(Sekhar, 1998). Among wild carnivores, the main livestock predators were reported to be tigers and leopards, with the former preying on large domestic animals such as cattle and buffaloes and the latter on smaller animals like goats, sheep and calves. Tigers were reported to be a major threat in villages located inside and close to the reserve; leopards instead, avoided competition with tigers and frequented areas further outside the villages. The calculation of the economic impact was based on domestic animal prices provided by those agro-pastoralists interviewed 26 during the survey, which revealed that between 1994 and 1996, the annual family loss amounted to Rs.270-610(US\$ 7-17). This is much less than crop losses and is certainly enhanced by the villagers taking their domestic animals into the reserve for grazing throughout the year (Sekhar, 1998).

### Preventive Strategies

Artificial and Natural Barriers (physical and biological) Barriers have the function of preventing spatial overlapping among wild animals and local communities; they are usually

man-made, but natural barriers such as rivers, coasts or mountain ranges may occur along a nature reserve boundary. Spatial separation has been proved to be a successful strategy when physical barriers enclose a large reserve (Nyphus and Tilson 2004b), for example, recorded limited tiger conflict around the Way Kambas National Park in Sumatra, owing to the presence of rivers along more than two-thirds of the park's boundary, which discouraged tigers from leaving the park, Polisar et al., (2003), in suggesting how to promote coexistence of jaguars and pumas with cattle in Venezuela, advised on excluding cattle from the forest and maintaining adequate distance between calving areas and the big cats' territory.

However, spatial separation is not always a satisfactory solution; in India, for instance, in the state of Gujarat, chain link fencing of the eastern boundary of Gir National Park was expected to stop lions and leopards from straying out of the park and to prevent illegal grazing at the same time. Instead, it was proved not to be economically viable and was only partially successful. In the same area, other types of barriers are under experimentation, such as rubble walls and barbed wire fencing, which have been constructed along some sections of the reserve's boundary (Vijayan and Pati, 2002). Some concern about the negative impacts of physical barriers on the ecological equilibrium of the region has been expressed by different authors, Vijayan and Pati (2002), Sekhar (1998), Hoare (1992) point out that fencing reserves may affect the population dynamics of animals and hinder their natural migratory and dispersal behavior, especially in the case of highly territorial species like lions. It is also essential to take into consideration the different, unexpected effects that fencing may have on a wide range of non-target species. Another option is the construction of physical barriers in human settlements to protect crop fields and livestock, while defining properties and gathering farm animals. Fencing homestead areas instead of an entire reserve boundary is not only less expensive, but allows greater wildlife dispersal. Farmers often build pens which are small enclosures with 1.5-1.8m high walls with no ceiling. They can be walls made from different materials such as stone, mud, brushwood, or high rubble, barbed wire or mesh-wire

fences. The type of fence depends on locally available materials, as the farmers generally use local products.

### 3. SYSTEM IMPLEMENTATION

System Implementation is the stage in the project where the theoretical design is turned into a working system. The most critical stage is achieving a successful system and in giving confidence on the new system for the user that it will work efficiently and effectively.

There is a wide scope for future enhancement for this website .hence people can conduct awareness classes through webinars more wildlife category can be added other than animal ,plants and birds. Location based endangered wildlife can be consider in future . along with endangered wildlife conservation vulnerable and threatened species can be added.

### 4. CONCLUSIONS

In this paper, we proposed a new public auditing The system was designed in such a way that future modifications can be done easily. This website has been very well satisfied with the efficient performance of this wildlife area. This website is a right way for share the information about wildlife. This website also provides for the facility upload and downloads for registered users. Registered user can share his/her suggestion on any topic regarding wildlife. Statistical reports of wildlife mortality are available. It gives a quick awareness among people. This website provides other authorized website reference for the people to follow.

This website has gone through testing and has proved user friendly is done by providing an easy registration process. And user can easy to download. It has been successful implemented on the server. The organization has been satisfied the performance of the website.

### REFERENCES

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