

Current Status of Asian Elephants in Bhutan

Karma Jigme¹ and A. Christy Williams²

¹Wildlife Conservation Department, Department of Forests, Thimpu, Bhutan

²WWF AREAS, Kathmandu, Nepal

*Corresponding author's e-mail: kjigme@yahoo.com

Introduction

In Bhutan, the elephant has always been revered as a godly figure known by various names such as Meme Sanjay (Grandpa Buddha) by the Sharchopas and Lord Ganesh by the Hindu Lhotsampas. The religious significance of the elephant is depicted through paintings of elephants on the walls of monasteries and temples across Bhutan. One of the most prominent elephant paintings is “four harmonious friends” that collaborate together to get fruits or jewels of wisdom.

The legal status of elephants in Bhutan guarantees complete protection with inclusion in Schedule I of the Forests & Nature Conservation Act of Bhutan (MoA 1995) equivalent to Appendix I of CITES.

Unlike many of the other elephant range countries, Bhutan has substantial areas of undisturbed natural environments. Forests cover 80.80% of the land area (MoAF 2010) and 51.44 % of the land area is under the protected area network. This has contributed to successful conservation of elephants in Bhutan.

Wild elephants

Elephant numbers

There is no established baseline for elephant populations in Bhutan as a nationwide survey has not been conducted. Estimates of the number of elephants in Bhutan range from 60-150 (Santiapillai & Jackson 1990). Increase in crop raiding incidences, may indicate a stable or increasing elephant population due to uncultivated agricultural land becoming forested,

and strict law enforcement resulting in decrease of poaching and death of elephants in the last ten years.

The first nationwide elephant survey was attempted in 2005 based on direct sightings of elephants and block counts. The survey did not provide results because of very limited sightings. In 2010, a dung transect survey was conducted in Samtse, Sarpang and Phipsoo Wildlife Sanctuaries based on 5x5 grids located in and around areas known to have elephants, with a random sample of 30% of the grids being surveyed by 4 km line transects. Elephant density was estimated at 0.641 elephants/km² with a 95% CL of 0.038-2.246 elephants/km². This gives a total of 513 elephants with a 95% CL of 30-1797 for the 800 km² area in Samtse, Sarpang and Phipsoo Wildlife Sanctuaries. In May 2011, the survey was scaled up across the southern belt of Bhutan and simultaneously dung was collected for DNA analysis, the results of which are not yet available.

Current elephant distribution

Elephants are now seen at altitudes as high as 1400 m whereas in the past the sightings were reportedly below 300m. Therefore, although found in the same Dzongkhags (districts) their range has possibly increased. The elephant distribution covers foothills along the Southern border in the districts of Samdrupjongkhar, Sarpang, Tsirang, Samtse and Gedu. During the 1990's the elephant population in Samdrupjongkhar is reported to have been lower than now (G. Kuenley, pers. comm.). A likely reason could be the increase in habitat due to relocation of villages. Security threats have forced huge migrations along other stretches of southern Bhutan also, thereby

gradually transforming agricultural lands into forests (W. Ugyen, pers. comm.).

Most elephants migrate seasonally to neighbouring India and are mostly observed in Bhutan during the growing seasons of the major crops. During the non growing seasons, elephant sightings are rare. The movement patterns of elephants in Bhutan are not known and understanding such patterns could help human elephant conflict (HEC) mitigation.

Elephants are present in protected areas including Royal Manas National Park (RMNP), Phipsoo Wildlife Sanctuary (PWS) and Khaling Wildlife Sanctuary (KWS) (Fig. 1). The relative numbers of elephants residing within and outside protected areas is unknown. Field reports suggest that elephants are resident at Phipsoo Wildlife Sanctuary (Gyem Tshering, pers. comm.). This maybe due to the low human pressure at Phipsoo compared to other protected areas, and the availability of saltlicks within the sanctuary - where elephants are commonly sighted.

Threats

Much of the elephant habitats in Bhutan run across high hills and steep slopes that are prone to soil erosion. The rugged terrain has caused the

highest proportion of elephant casualties in the past (Table 1).

The inadequate number of forestry personal with scientific expertise on elephants has restricted information collection and maintenance of databases on elephants and conflicts. The shortage of field staff has also effected the implementation of conservation activities such as anti-poaching, research and monitoring. Inadequate financial support and the security threat along the Bhutan-India border have restricted long term research on elephants.

The conflicts mostly occur outside protected areas or in buffer zones, since there are few settlements inside the protected areas. Crop depredations and damage to property occur regularly and death and injury of humans occasionally, across southern Bhutan. Over the years, threats to life and property, and damage to crops by elephants has contributed to economic loss and social pressure on farmers in southern Bhutan. The constant state of fear and regular economic losses without compensation has invited criticism and amplified the communities' negative perception of conservation. This has led to a change in communities' perception of elephants, although the change was not alarming at this point of time (Nagdrel 2008). Thus HEC may become

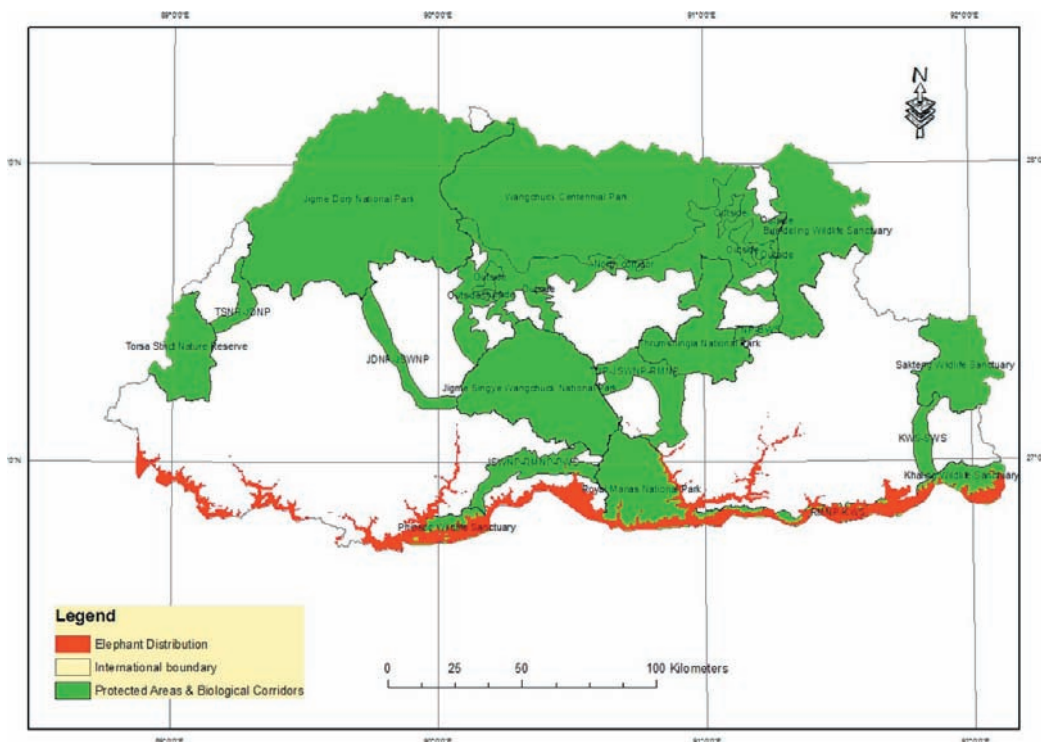


Figure 1. Elephant distribution map.

Table 1. Wild elephant casualty reports 2005 to 2011.

Sex	Age	Causes	Date	Location	Remarks
Male	30 years	Retaliation	Nov. 2005	Sarpang	Tusk intact
Female		Electrocuted	10.2.2008	S/jongkhar	4" tusks intact
Juvenile	2 years	Fall off cliff	28.2.2008	S/jongkhar	
Juvenile		Fall off cliff	25.7.2008	S/jongkhar	Decayed
Male	4 years	Electrocuted	Nov. 2008	Sarpang	Tusks intact
Male		Unknown	7.7.2009	Samtse	Tusks intact
Female		Fall off cliff	5.10.2009	S/jongkhar	Decayed
Male	11 years	Fall off cliff	15.4.2010	RMNP	Tusks intact
Juvenile	4 months	Unknown	8.3.2011	RMNP	
Male		Unknown	8.7.2011	Samtse	Tusks intact

the greatest threat to the survival of elephants in Bhutan.

The damage caused varies from one place to the other with some areas being frequently and extensively damaged. The annual crop loss to elephants was estimated to range from 0.3 to 18 % of total household income (DFPS 2008). On average farmers spend about two months per year guarding their maize and paddy from wild animals. Guarding is mostly done at night and has cost farmers untold hardships, additional expenses, and possible injury (DFPS 2008). The economic impact on humans has become a challenge faced by the Department of Forests & Park Services (DFPS) in conserving elephants. Damage caused by elephants plays a significant role in creating animosity among communities. This is becoming a key issue concerning elephant conservation.

A significant number of elephants in Bhutan have trans-boundary ranges, and they are prone to environmental disturbance outside Bhutan. Illegal harvesting of timber especially along the southern border with India could contribute to considerable habitat destruction in the near future, with resultant negative impacts on elephants.

Elephant management and HEC mitigation

HEC is of increasing concern to the Department of Forests & Park Services and communities in southern Bhutan (Nagdrel 2010).

In 2009 a solar electric fence was erected at Senge Gewog in Sarpang Dzongkhag with

financial support from UNDP and WWF. It was of a high standard with iron posts and 3 strands of wire, instead of 1 strand and wooden posts as earlier. The 4.5 km solar electric fence covered an area of 271 acres. Since the construction of the fence, the people of Senge Gewog have started growing crops on fallow land. Subsequent field reports cited success in keeping elephants away from the fields, with 50 households consisting of 340 people having benefited from this mitigation measure.

At Umling geog, a low cost solar electric fence of 2.57 km was constructed in 2007 to benefit more than 420 households in five villages. In 2010, with additional financial support from WWF the wooden posts were replaced with iron posts. An additional 2.3 km fence was erected covering the main elephant entry points. In 2010 the UNDP extended its support to construct a 6.7 km solar electric fence in Samtse. Understanding the gravity of the conflict situation, the Royal Government of Bhutan (RGoB) in 2010 further supported construction of solar electric fences at Dina, Samtse. The construction of a 10 km solar electric fence (low cost with use of sal posts) in Lhamoizingkha was recently completed with support from WWF. The Wildlife Conservation Division (WCD) has sought UNDP support to construct solar electric fences at Diafarm in Samdrupjongkhar.

Supplying equipment such as sound alarm fences and heavy duty torches to farmers and forestry personals has been done as a HEC mitigation measure. An ultra-sonic sound device was piloted at Senge village in 2010. Besides

these, communities still practice the following indigenous elephant driving techniques:

- Lighting of bonfire and shouting by the assemblage of villagers
- Use of fire crackers
- Beating of empty vessels to produce loud sound
- Performing rituals
- Chasing away with support from forestry personals

With human-wildlife conflict becoming a national concern, the DoFPS has initiated crop and livestock insurance schemes. A crop insurance scheme was piloted in Lhamoizingkha with seed money of Nu 300,000 (ca. US\$ 5650) from WWF. In order to make the scheme sustainable the 'Endowment Fund for Human Wildlife Conflict Management' was established in 2010. The funds raised will be invested in the 'Bhutan Trust Fund for Environmental Conservation' (BTFEC) and interest generated will be made available as seed money to the Gewog Conservation Committee (GCC). The community will be responsible to partially cover the annual insurance premium, which will provide an inherent check and balance for the utilization of funds in a prudent and transparent manner. The GCC can also initiate fund raising for their respective endowment fund. As their first program they will oversee the livestock and crop insurance compensation scheme – an initiative, which is targeted at offering monetary compensation in the form of insurance coverage. The formation of GCCs will facilitate the gradual transfer of custodianship of responsibility for nature conservation to the people. In the future the GCC will be mainly responsible for taking up all conservation related activities in Gewog.

Captive elephants

Bhutan has 10 captive elephants (2 males, 6 females and 2 juveniles) with the Department of Forests & Park Services. All of the captive elephants were rescued as young orphans and were trained by a process of grooming. They were never subjected to physical abuse. Each elephant is looked after by two caretakers from the beginning of their captive life. As Bhutan did

not have a history of employing elephants and the Department of Forests & Park Services does not favour the idea of captivity, but the need to have captive elephants has become an imperative. Captive elephants are important for forestry personal living in far flung outposts of parks. They are the only means of transport to carry supplies when accessibility is completely cut off during most part of the rainy season. Captive elephants can also be used for anti poaching patrolling within protected areas. Since all the protected areas in southern Bhutan are closed for tourists, elephants are not used in ecotourism. Elephants are mostly left free under the care of the DoFPS till the onset of next monsoon season.

Records show the birth of two calves to two females in captivity. A male was born in 1997 and a female in 2003. Both were fathered by the same male who later died of old age. Breeding still occurs among captive elephants. Probability of breeding captive elephants with the wild population is limited, as the captive elephants do not venture unescorted into forests. So far three captive elephants have died of natural causes (old age) and one was killed by a lightning strike.

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